Misleading in social decision-making : a motivational approach
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Misleading in Social Decision-Making: A Motivational Approach

Wolfgang Steinel
MISLEADING
IN SOCIAL DECISION-MAKING:
A MOTIVATIONAL APPROACH

ACADEMISCH PROEFSCHRIJT

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aan de Universiteit van Amsterdam
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ten overstaan van een door het college voor promoties ingestelde
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Wolfgang Steinel
geboren te Neurenberg, Duitsland
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What do people communicate to interdependent others in order to influence their decision making? How do they provide information? What motivates people to mislead others, and what motivates them not to do so? These are the issues I have been investigating in the last four years. I hope that this book can get us closer to an answer...

Having an understanding of these questions is important for understanding everyday human interaction. In today's information age, trying to influence people's decisions and actions by abuse or simply by undue demonstration of power is fortunately going out of fashion in many parts of the world, as we become increasingly self-willed and independent, taking self-imposed commitments more seriously than externally imposed ones. Obviously thus, influencing people's decisions by fine-tuning information provision is becoming an ever more powerful tool.

Moving to Amsterdam was one of the more important decisions I made in my life. My decision to start working on a PhD project was largely influenced by the information I received from Carsten De Dreu. He told me that doing research at the Department of Work and Organizational Psychology at the University of Amsterdam and attending lectures at the Kurt Lewin Institute was an inspiring, pleasurable, and gratifying occupation. Luckily, I was not misled, as it turned out that this information was highly accurate. (I'm writing this sentence with certain pride, as the findings reported in Chapter 3 show that it is cooperative people who receive highly accurate information.)
Moving to Amsterdam was a good decision to make. In the first place, Carsten’s catching enthusiasm for science makes him a great teacher and a very inspiring person to collaborate with. I am really happy that I had the chance to work with him and to receive top-class support and guidance throughout my research project. In addition, I became acquainted with a bunch of very sociable, enthusiastic and competent young researchers. I had countless delicious cups of coffee, inspiring discussions, and a great time going to conferences (or to the pub) together with Andreas, Bram, Cathy, Dimitri, Dominique, Eric, Femke, Fieke, Irene, Katherine, Lotte, Marjolein and Sonja. I am particularly thankful to Astrid Homan, Bernard Nijstad, Bianca Beersma, Daan van Knippenberg, and Maria Dijkstra who were a wealth of constructive comments, sound advice and creative expertise whenever wracking my brains wouldn’t take me much further. Special thanks go to Jelte, Suzanne, Ina, and especially Joke for their unfailing practical support. I would also like to thank the participants in the experiments, and all the students whose interest in psychology is stimulating and encouraging. Finally, I am particularly indebted to Gerben van Kleef. Not only was it most pleasant and much fun to share an office for almost four years, he also helped me to integrate successfully into Dutch society – the practical implications of his research were essential for me each time I needed to make short work of the bureaucratic red tape.

Moving to Amsterdam was the right decision. Nevertheless, I would not have taken it, if my then girlfriend and meanwhile wife, Margarita, had not left her sunny homeland to come with me. I would like to thank her for being such a devoted, yet critical reader of various drafts of this thesis and a wonderful person to love and share a life with. My love and a very special debt gratitude come her way.

Wolfgang Steinel
Amsterdam, autumn 2003
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The Netherlands was shocked when, in February 2003, Royal Ahold announced that its revenues had been overstated for years by a total of at least $500 million ("Opzettelijke misleiding," 2003). The shares of Ahold, one of the largest Dutch companies and the world's biggest food retailer, lost about 60 percent of their value after the accounting irregularities became public ("Ahold," 2003; "Börse," 2003). The massive scale of deception and withholding of information dumbfounded investors, customers, and the general public alike (Meeus, 2003), and even comparisons with the Enron case emerged (Gumbel, 2003).

About one year previously, large-scale accounting irregularities led to the implosion of energy trader Enron Corp., causing the biggest bankruptcy in U.S. history (Kadlec, 2002). During Senate investigations, chairmen of the Enron board laid the blame on company accountants and the management, who had been withholding key financial information and had misled even members of the company's executive board ("Enron board," 2002). Other charges against a group of Enron executives included insider trading and illegally inflating the company's stock price by lying about the existence of a certain Internet technology (Eichenwald & Markoff, 2003).

To cite two more recent examples of corporate deception, WorldCom Corp. have inflated their profits by more than $9 billion within less than three years (Feder, 2003), and HealthSouth Corp., the largest chain of rehabilitation hospitals in the United States, reported income of $1.6 billion before tax, falsifying business records in an attempt to match Wall Street expectations. In reality, however, they had only made $169 million. The accounting fraud spanned more than a decade (Freudenheim & Abelson, 2003).

Company deceit is not limited to the provision of fraudulent accounting information. Drugmaker Parke-Davis wrote articles about the alleged effects of the
drug Neurontin in treatments, for which it was neither effective, nor approved by the FDA (i.e., the United States Food and Drug Administration). The company even paid scientists to publish such articles in professional journals (Carey, 2002). Tobacco companies are often accused of misrepresenting the facts about the addictive properties of their products ("Blowing smoke," 1996; Day & Glater, 2003).

Many marketing practices aim to mislead the consumer (Aditya, 2001). One marketing con trick is to represent products as if they were the means to achieve a highly desired end, like status or popularity. Aditya describes the example of a US mail order company promoting a shoe insert that increases a person's height without changing the outward appearance of the shoe. The company promoted the insert by creating the (obviously false) impression that the shoe insert would help to increase career success. Some companies hope to capitalize on the gullibility of consumers who fall for the simple advertising trick of using blue handwriting fonts to create the impression of a personal note in letters advertising dubious products or services. Furthermore, direct marketers send unsolicited promotional materials by e-mail (often referred to as "spam") and give their messages titles like "RE: our meeting" to trick the recipients into believing that the content is personal in nature. As the number of people who access the Internet keeps growing, so does the number of con tricks, swindles, and frauds, which now already cost American consumers over $100 billion per year (Black, 2003; Hafner & Flynn, 2003; Kimmel, 2001; Langenderfer & Shimp, 2001).

These randomly chosen examples show that lying, deception, and misleading are phenomena that can have tremendous consequences. Of course, to engage in lying and deception is not a privilege of leading figures in business, marketing, or politics. Rather, providing inaccurate information about one's opinion, priorities, or interests is a common activity, with people telling about one or two lies a day on average (DePaulo, Kashy, Kirkendol, Wyer, & Epstein, 1996).

In this dissertation, I will address such questions as "When and why are people likely to deceive an interdependent counterpart?"; "How do people fine-tune the provision of accurate and inaccurate information to influence the other's decision-making?"; "What motivates people to engage in lying and deception?"; or "What factors affect people's decisions to refrain from lying and deception?" Approaching lying and deception from a motivational perspective, I will
investigate the influence of people's own social value orientation (i.e., whether they are pro-socially or selfishly motivated) and the influence of people's expectations about their counterpart's motivational goal (i.e., whether they expect to interact with a cooperative or a competitive opponent)\(^1\) on the provision of accurate and inaccurate information. Further, I will investigate the role of fear of exploitation, greed, and punitive sentiments as factors which promote the use of lying and deception, on the one hand, and concern with reputation and self-monitoring as factors inhibiting lying and deception in social decision-making, on the other hand.

In the remainder of this chapter, I will first discuss some definitional issues to clarify what is meant by lying and deception and then proceed with some classifications of lying and deception. Thereafter, I will discuss four lines of research on lying and deception, namely (1) the social-psychological analysis of patterns of deceptive behavior, (2) a forensic-psychological analysis of differences between liars and truth-tellers, and (3) an organizational-psychological orientation towards developing scales to measure integrity and faking on personality measures. Subsequently, I will review (4) the literature on when and why people deceive in interdependent decision-making, such as experimental games and negotiations. These studies provide the background against which the current dissertation research was conducted.

**Defining Lying and Deception**

What do we mean when we talk about lying and deception? Webster's dictionary (Cayne, 1991) defines the terms *deception* and *deceit* as "the state of being deceived; something that deceives or tricks; a hoax; imposture" and "to make (someone) believe what is false; to mislead." The latter term *to mislead* is defined as "to deceive by causing to infer something not actually true." A *lie*, finally, is defined as "an intentionally false statement or impression."

From a philosopher's point of view, the intention to mislead is crucial to the distinction between the terms deceiving and lying. Sisela Bok (1978), for example, argues that we are deceived all the time, through no one's fault. We are deceived

---

\(^1\) For ease of reading, the term *social value orientation* will refer to the (questionnaire-measured) personality trait of the participant, and the term *motivational goal* will refer to the (instruction-manipulated) expectation about the interdependent other.
when messages are misunderstood, which can happen due to a variety of distortions, such as noise, fatigue, or language problems. Our eyes frequently deceive us as well. According to Bok, deception can only be called a lie, when it is done with the intention to mislead. In her definition, a lie is "any intentionally deceptive message which is stated" (p. 13).

The social psychologist Paul Ekman adds to this definition the notion that the target of deception gets no warning. A magician, for example, does deceive his audience. However, he is not lying, because his audience expects to be misled. In Ekman's (1985) definition of a lie, "one person intends to mislead another, doing so deliberately, without prior notification of this purpose, and without having been explicitly asked to do so by the target" (p. 28). Aldert Vrij (2000) adds to this definition that also unsuccessful attempts to deceive are lies, and defines lying as "a successful or unsuccessful deliberate attempt, without forewarning, to create in another a belief which the communicator considers to be untrue" (p. 6). Finally, the sociologist Irving Goffman (1974), in his definition of what he calls fabrications, adds the notion that both deceiver and target can be more than one individual. He defines fabrications as "the intentional effort of one or more individuals to manage activity so that a party of one or more others will be induced to have a false belief about what it is that is going on" (p. 83). In the present dissertation, I will only use the term deception to refer to actions that one individual directs towards one interdependent other. This restriction also excludes the area of self-deception. Self-deception is an irrelevant phenomenon for this thesis, as people who fall prey to self-deception are neither lying, nor are they deliberately misleading someone.

The purpose of this thesis is to explore when, how, and why people mislead an interdependent opponent and to shed light on people's motivations behind the provision of misleading information. Hence, the focus is on intended rather than unintended deceit, which makes the philosophical distinction between the terms lying and deception redundant. DePaulo et al. (2003) define deception as a deliberate attempt to mislead others and use the terms lying and deception interchangeably. In order to keep my terminology clear, I will use the term lying to refer to the act of providing inaccurate information about one's own interests to an interdependent other, whereas deception will be used to refer to dishonest behavior towards an interdependent other regarded in its entirety.
Another term, which some authors use as a synonym for lying and deception, is misrepresentation (e.g., O'Connor & Carnevale, 1997; Tenbrunsel, 1998). Misrepresentation is a broad term. Webster's dictionary (Cayne, 1991) defines to misrepresent as "to give a false impression or account of, either deliberately or unintentionally," while, in popular use, the term conveys the idea of intentional untruth. Thus, misrepresentation can refer to any deceptive statement. With the purpose of keeping my terminology clear and coherent in mind, I will use the term misrepresentation only in a restricted sense. For example, I do not refer to deceitful exaggerations as misrepresentations. Only then will I call a deceptive statement misrepresentation, when the aim is to make things "look the other way round," that is, when one pretends to have interests which are opposed to his or her actual interests.

Classifying Lying and Deception

Seeking to describe the concept of deception, scholars have reasoned about possible motivations which drive liars to engage in deceptive communication. Goffman (1974), for example, distinguishes between exploitive fabrications and benign fabrications. Benign fabrications are construed "in the interest of the person contained by them, or, if not quite in his interests and for his benefit, then at least not done against his interest" (p. 87). Benign fabrications can take various forms, such as playful deceit (e.g., pulling someone's leg), training hoaxes (e.g., a fire drill to train the evacuation of a school building), or paternal construction (e.g., a pilot who does not mention technical problems during the flight, in order to keep the passengers from worrying too much). Experimental hoaxing, that is, lying to participants in a psychological experiment, which is often unavoidable for methodological reasons, is another form of benign fabrication. Exploitive fabrications, on the other hand, aim to serve the interests of the liar and are "clearly inimical to the private interests" (p. 103) of the target of deception.

Other scholars, communication researchers, sociologists, and psychologists alike, have designed a variety of similar taxonomies, which classify lies according to the suspected motivation of the liar (e.g., Camden, Motley, & Wilson, 1984; Hample, 1980; Lippard, 1988; Lindskold & Walters, 1983; Saarni & Lewis, 1993; Turner, Edgley, & Olmstead, 1975). Far from claiming completeness, and in no
particular order, here are some reasons for lying: People may lie to help others (e.g., I tell my boss that my colleague is at the dentist’s, even though I know that he has overslept), people may lie to avoid conflict (e.g., when I receive an angry phone call, I pretend that the battery of my cell phone is dead), people may lie to make a good impression (e.g., I pretend to recognize the fine whisky by its taste, whereas I simply caught a glimpse of the label on the bottle), people may lie to protect themselves (e.g., I tell my boss that my computer crashed just the moment before I finished my work, even though the computer is working fine, and I have been lazy), people may lie for their own benefit (e.g., My colleague asked me to buy him a bottle of single malt whisky during my vacation in Scotland. I did so, and pretended that I paid the regular price, while I bought it duty-free), or people may lie to harm others (e.g., a tourist asked me the way in a rather unfriendly way, so I pointed in the wrong direction).

These classifications have two main disadvantages: First, they suffer from a high level of subjectivity, as behaviors (i.e., acts of deception) are classified according to an observer’s assumptions about the actor’s underlying motivations. Second, the number of classes is virtually unlimited. Therefore, some authors (e.g., Metts, 1989) classified the reasons why participants lie into the following four broader categories: partner-focused (e.g., making a false compliment about a friend’s new hair-do), teller-focused (e.g., not admitting a mistake out of concern with self-presentation), relationship-focused (e.g., pretending to agree in order to avoid conflict and unpleasant scenes), or issue-focused (e.g., lying about issues because they are too private).

Types of lies are also distinguished according to the behavior actors apply in order to deceive (e.g., Buller & Burgoon, 1994; Ekman, 1985; Metts, 1989; Turner et al., 1975) – that is, whether liars leave out crucial information in order to make others draw false conclusions, whether they slightly alter what would otherwise have been accurate information, or whether they fabricate inaccurate information. Usually, three classes of lies are distinguished: omissions (some authors call these concealments), distortions (or equivocations), and falsifications (or outright falsehoods). Falsification means to maintain information that contradicts the truth (e.g., a car salesman explicitly tells a customer that the car has run only 50,000 kilometers, even though he knows that the car has run twice as much, and he has
tampered with the odometer). Distortion is the manipulation of information through exaggeration or minimization, so that a listener would misinterpret the information provided (e.g., the car dealer mentions that the car has a low mileage), and omission means to withhold crucial information (e.g., not mentioning that the brakes do not work properly).

DePaulo et al. (1996) developed a taxonomy of lies which categorizes lies along their (1) content, (2) type, and (3) referent. The content of a lie can be a feeling (e.g., feigning a feeling or a judgment: "Your muffins are the best ever!"), an achievement (e.g., "I did well on the test."), an action (e.g., lying about what one has done, is doing, or is planning to do: "I will go out with you sometime"), an explanation (e.g., misstating the reason or explanation for one's behavior, like "I did not take out the garbage because I don't know where to put it."), or a fact (e.g., lying about facts about objects, events, people or possessions, like "My uncle runs that restaurant."). DePaulo et al. differentiate between three types of lies. The first type of lies is outright lies. These are total falsehoods (e.g. "I never drink any alcohol at all"). The second type is exaggerations. These overstate the facts or stretch the truth (e.g. "I am so terribly sorry that I am too late"). Finally, the third type is subtle lies. Telling subtle lies means telling the literal truth, but designing a misleading impression by omitting relevant details (e.g., "Sorry that I'm late, there was a traffic jam," not mentioning that the traffic jam was in the lane in the opposite direction, and the liar simply slept too long). The last factor in DePaulo et al.'s taxonomy of lies is the referent. The referent of the lie is not to confuse with the target of the lie – the target is the person to whom the lie is told, whereas the referent is the person about whom a lie is told. The referent can be the liar him or herself, when the lie refers to something the lie-teller did or felt (e.g., "I model for a New York agency"). Analogously, the referent can also be the target of the lie, another person, or any other object or event.

Most of the experiments reported in Chapters 3 and 4 of this thesis are laboratory experiments which use a relatively context-poor decision-task. As I will explain in detail in Chapter 2 where I discuss the Information Provision Game developed for this dissertation research, people can choose between providing accurate information, providing information which deviates to some extent from what is objectively true, or giving no information at all. Lies can be self-oriented, for
example when participants lie in order to increase their own outcomes, or other-oriented, for example when participants lie in order to decrease the opponent's outcomes. Lying by omission is hardly possible in the experimental situation I have used, because there are no cues in the situation that would create a false impression when no information is given. Therefore I do not consider omissions as lying, but rather as the provision of no information. Lying and misleading thus refer to giving falsified information about facts concerning the liar (i.e., own priorities and preferences in an interdependent task) to an interdependent other. Those falsifications can be self- or other-oriented.

Exploring Patterns of Deceptive Behavior

The key questions in the social psychological approach to lying and deception are "Do people behave differently when they are lying as compared with when they are telling the truth?" and, as a consequence, "How can deception be detected?" Ekman and Friesen (1969), for example, developed a theoretical framework in an attempt to pin down the behavioral aspects of deception. They described specific types of body movements and facial expressions which accompany dishonest behavior and attempts to hide deception, and called those cues leakage clues and deception clues: "Deception clues tip him [the target of deception] off that deception is in progress but do not reveal the concealed information; the betrayal of that withheld information we call leakage" (p. 89). Leakage clues can result from the deceiver's attempt to obey social norms. Ekman and Friesen describe how deceivers not only attempt to inhibit certain unwanted displays (e.g., trying hard not to show nervousness in a job interview), but also try and simulate wanted displays (e.g., appearing self-assured in a job interview). Ekman (1985) extended the theory by looking at the role of emotions in deception. In order to detect deception, he argues, one has to understand the emotions liars are experiencing in a certain situation. Detection apprehension, for example, could leak in high-pitched voice or speech hesitations, whereas guilt could leak in lower pitch and downward gazing.

In their Four-Factor Model, Zuckerman, DePaulo and Rosenthal (1981) tried to explain the processes governing deceptive behavior. Their model does not list a set of behaviors which are more or less likely to be observed when people are lying.
as compared to when they are telling the truth. Rather, the model identifies four factors which influence people's behavior while they are lying. These are (1) general arousal, (2) feelings that liars experience, (3) cognitive aspects of deception, and (4) attempts to control the situation. Consequently, there is not just one single type of behavior clearly indicative of deception. Rather, there are a couple of behaviors which occur more or less frequently when people are telling the truth as compared to when they are lying. Liars could, for example, show more blinking, more speech disturbances and greater pupil dilation due to increased general arousal. They may experience feelings like guilt or anxiety, and might, as a consequence, speak in a more distant way by using the third person rather than the first. The Zuckerman et al. model conceptualizes lying as cognitively more demanding than telling the truth. The cognitive challenge could accordingly manifest itself in longer response latencies or more speech hesitations. Finally, attempts by liars to control the situation and to hide their deception could result in suspicious uncommon behaviors.

Buller, Burgoon and colleagues (Buller & Burgoon, 1994; Buller, Burgoon, Buslig, & Roiger, 1994; Buller, Burgoon, White, & Ebesu, 1994; Buller, Strzyzewski, & Comstock, 1991; Buller, Strzyzewski, & Hunsaker, 1991; Burgoon & Buller, 1994; Burgoon, Buller, Dillman, & Walther, 1995; Burgoon, Buller, Ebesu, & Rockwell, 1994; Burgoon, Buller, & Guerrero, 1995; Burgoon, Buller, Guerrero, Afifi, & Feldman, 1996; Burgoon, Buller, White, Afifi, & Buslig, 1999) developed the Interpersonal Deception Theory. They approach deception from a communication perspective and argue that deception is a dyadic and interactive event. Central to the theory is the notion that in order to deceive successfully, people have to simultaneously engage in several strategic behaviors. These strategic behaviors include, apart from actually conveying the message, inter alia, signaling trustworthiness and sincerity, suppressing signs of negative arousal and closely monitoring the target of the deceptive message. In case the receiver shows suspicion of the message, the deceiver has to adapt his/her behavior. This variety of demands makes deceptive communication a taxing task, which may strain the mental capacity of the communicator. As a result, a liar does not only show strategic behavior, but also tell-tale non-strategic behaviors, like increased arousal or impaired communication performance.
The early social-psychological approaches to deception discussed thus far share the assumption that lying is a stressful, sophisticated and shame-evoking process. Lying is considered a selfish act, and people lie in order to gain advantages for themselves. It is only logical then that the selfish liar is highly motivated not to get caught in a lie, as detected lies could have tremendous consequences. That is what makes lying an emotionally demanding task. Lying is cognitively demanding too, because it involves the construction of an alternative coherent story, while truth-telling is simply referring to known facts or scripts. All this can lead to increased arousal during lying, therefore signs of a liar's increased arousal or a liar's attempts to hide such signs could indicate that deception is in progress. What the above mentioned approaches have in common is that they explicitly or implicitly consider lying an event which is somehow out of the ordinary.

However, as DePaulo et al. (1996, p. 979) note, "the debate on deceit has in some important ways proceeded virtually unconstrained by data." In an early study, Turner, Edgley, and Olmstead (1975) analyzed 130 dyadic conversations and found that people lied in about two thirds of their conversations. DePaulo et al. (1996) conducted a larger and more systematic diary study, involving a community sample and a sample of college students. Their data confirmed the view that lying is not extraordinary, but rather a fact of daily life. Community members reported telling about one lie a day, students two (formal polite answers like "fine" to the question "how are you?" were not regarded as lies). This means that community members told a lie in about one out of five interactions, and, during one week, they lied at least once to 30% of the people they interacted with. Students reported a slightly higher frequency of lying.

This high rate of deceptive behavior does not necessarily imply that people are selfish liars who mislead others for the pursuit of material gain. DePaulo et al. (1996) also assessed the situations in which lies are told, the object of the lie, the motivation for lying, the consequences of each instance of deception and the liar's own feelings about having lied. Similar patterns emerged from both samples. In favor of the depiction of liars as "selfish," the overwhelming majority of lies were self-serving, in that people lied about themselves, and twice as many lies were told to benefit the liar rather than other people. Contradicting the assumption of the selfish liar, however, people hardly ever lied in pursuit of material gain. Most lies
served psychological rather than material benefits. People lie in order to appear smarter or more sophisticated than they think they are, or to protect themselves from embarrassment or disapproval. In a recent meta-analysis of 116 studies in which behavior while telling the truth was compared to behavior while lying, DePaulo et al. investigated more than one thousand estimates of 158 cues to deception. The two main findings were, first, that effect sizes for cues to deception were generally weak, and, second, that cues were stronger when the motivation to lie was identity-relevant rather than instrumental.

**Telling the Guilty from the Innocent and Exposing Falsifiers and Fibbers**

The knowledge about how people behave when they are telling the truth and when they are lying is of special importance to two major fields of applied psychology, namely forensic psychology and organizational psychology. A key question for forensic psychologists has always been to determine whether a testimony is true or false, that is, whether a defendant who pleads not guilty and insists that he or she has not committed the offence under scrutiny is lying or telling the truth.

One of the first articles dealing with interview techniques to determine guilt or innocence was published in 1925 (Larson, 1925) and since then much research has addressed people's ability to detect lies (for a recent review, see DePaulo et al., 2003). Forensic psychologists have considered the effectiveness of using instruments to observe ocular stability (e.g., Berrien, 1942), pupillary responses (e.g., Harney, 1943), and voice modulation (e.g., Olechowski, 1967). Perhaps the most widely known method is the polygraph, a device which accurately measures a variety of bodily activities, like palmar sweating, blood pressure and respiration, sometimes also brain electrical activity. Changes in physiological activity are often associated with arousal.

The standard procedure to investigate whether a suspect is guilty (i.e., he or she is lying when pleading innocent) or innocent (i.e., he or she is not lying when pleading innocent) is the Control Question Test, which comprises three different types of questions. Neutral questions (i.e., name, place of birth) are used as distractors. Control questions are questions related to a crime, but not to the crime in question (i.e., if the suspect had ever stolen anything when he or she was a child).
Control questions are formulated in such a way that the examinee's negative answer will always be untruthful. Guilty and innocent suspects are expected to respond with the same level of arousal to those control questions. However, guilty suspects should show stronger reactions to the so-called relevant questions (i.e., questions directly related to the crime in question), than to the control questions, whereas innocent suspects should show weaker reactions to the relevant questions. Polygraph tests are currently used in criminal investigations in countries all over the world, including Canada, Israel, Japan, South Korea, Mexico, Pakistan, the Philippines, Taiwan, Thailand and the USA (Lykken, 1998).

However, the use of polygraphs is disputed, as there are doubts as to whether polygraph outcomes are accurate, valid and reliable, whether it could pass unnoticed when suspects do falsify information during polygraph examinations, and whether the use of polygraphs is ethical (for critical reviews and discussions, see Bashore & Rapp, 1993; Ekman, 1991; Ford, 1995; Iacono & Lykken, 1997; Iacono & Patrick, 1999; Saxe, 1991, 1994; Vrij, 2000).

In connection with the increased awareness about national security in the United States, alternative means to detect deception suited for mass security screening are being developed. One such technical means is thermal imaging (Pavlidis, Eberhardt, & Levine, 2002a). A remote thermal camera assesses instantaneous warming around the eyes of an unaware subject during interrogation. Increased blood circulation could hint at a fright/flight response of the sympathetic nervous system, which could be indicative of deceit. However, this method suffers from a high false-positive rate, which makes it problematic for security screening purposes (Pavlidis, Eberhardt, & Levine, 2002b).

Detecting deceitful answers during interrogation is a challenge not only in legal proceedings, but also in organizational contexts. In the area of personnel selection, for example, Walley and Smith (1998) have described how deception on the part of the job candidate and the selector alike can extend over the whole duration of the selection procedure. Selectors may provide misleading information about the job, working conditions, pay scales or promotion criteria, or conceal unfavorable information, for instance about possible reorganization or takeovers, to name but a few options. Candidates may provide inaccurate information about their qualifications, experience, or biographical details, or misleadingly omit
unfavorable information such as an earlier dismissal, health problems, or a criminal record. Candidates' self-presentation strategies are sometimes truthful, like, for example, when candidates highlight their own qualities, but can also involve "false advertising" through the use of exaggeration, fabrication, deception and outright lying" (Rosenfeld, Giacalone, & Riordan, 1995, p. 7).

Job interviews are vulnerable to deceit, because interviewers' impressions about interviewees are highly subjective. Interviewers are fallible due to various biases and errors in information processing. In a field study among personnel and line managers who completed assessments of 330 interviewees, Anderson and Shackleton (1990) found that interviewers' overall evaluations of an applicant as suited for a job is strongly correlated with personal liking and with ratings of similarity to self. Outcome decisions depended strongly on the interviewees' self-presentation and non-verbal behavior. The authors concluded that "the purpose to which the interview is devoted in graduate recruitment therefore requires careful re-appraisal" (p. 75).

Likewise, applicants are not always entirely trustworthy during the selection process (Donovan, Dwight, & Hurtz, 2002; Levin & Zickar, 2002). Levin and Zickar (2002) estimated the prevalence of deception among job applicants, and found remarkably high base rates (i.e., about 40% in most cases) for a variety of deceitful behaviors, such as exaggerating own positive attributes, work experience, or own skills, fabricating information about oneself in order to get the job, or giving false opinions. Though not directly tested, it is a safe assumption that applicants adjust their self-presentation in a way they think would meet their interviewer's demands.

Hoping to detect such tendencies, selectors append psychometric tests to the interviews (Walley & Smith, 1998). Personality tests, however, do not preclude deception (Viswesvaran & Ones, 1999). Psychometrics scholars have been concerned with the fact that lying manifests itself in distortions and biases in questionnaire responses. This concern has resulted in the development of tests measuring integrity, of so-called honesty tests (O'Bannon, Goldinger, & Appleby, 1989; Ones, Viswesvaran, & Schmidt, 1993; Sackett, Burris, & Callahan, 1989; Sackett & Harris, 1984) and of several techniques to detect bias in answers and self-reports due to social desirability and self-presentation concerns (Hough & Ones, 2001; see also Yuile, 1989).
When, Why, and How do People Deceive? The Present Dissertation

As the examples at the beginning of this chapter illustrate, deception occurs at all levels in organizations, and egregious lies can have exorbitant consequences. As became clear in the preceding sections, researchers have been trying to uncover what people do when they are lying and deceiving, and how liars can be differentiated from truth-tellers. Research has remained relatively silent, however, about the conditions that foster or inhibit tendencies to mislead others. Investigating when, why, and how people mislead interdependent others will thus be the focus of this dissertation.

This dissertation research investigates lying and deception in the context of conflict and negotiation. Conflict – the state of two (or more) parties who perceive their goals as incompatible – almost necessarily arises when people interact (Pruitt & Carnevale, 1993), and is common to organizational life (De Dreu & Van de Vliert, 1997). In social interaction, inside and outside organizations, individuals experience mixed-motive interdependence. They are interdependent, because their outcomes depend in part on the decisions of the other. The interdependence structure is mixed-motive because parties have cooperative incentives to work together so as to increase joint gain, and competitive incentives to work against each other so as to increase personal gain (Axelrod, 1980; Dawes, 1980; Carnevale & Pruitt, 1992; Komorita & Parks, 1995; Schelling, 1960).

The cooperative incentive present in mixed-motive interdependence makes the situation particularly conducive to the exchange of honest and accurate information, because doing so successfully fosters high joint gain (Thompson, 1991). The competitive incentive present in mixed-motive interdependence makes the situation particularly conducive to using misrepresentation and deception, because doing so successfully fosters one’s immediate, personal self-interest (Triandis et al., 2001). Thus individuals in mixed-motive interdependence find themselves in what has been called the information dilemma – should they provide accurate information to achieve high collective outcomes, or strategically misrepresent their preferences to foster good personal outcomes (Kelley & Thibaut, 1978; Murnighan, Babcock, Thompson, & Pillutla, 1999)?

When people face an information dilemma, they can engage in a variety of deceitful activities (e.g., Kelley, 1966; Lewicki, 1983; Robinson, Lewicki, & Donahue,
Traditional competitive bargaining can involve deception. For example, negotiators may make an opening demand that is far greater than what they really expect to have to settle for, or they may convey the false impression that they are in a hurry, thereby putting time pressure on the opponent. Further, negotiators can make false promises. They may offer future concessions which they do not intend to make, or may guarantee that their constituents will approve a certain agreement while they know that they will not do so. They can lie in order to attack the opponent’s network, for example by making the false threat that they could make the opponent look foolish in the eyes of his or her constituents. Negotiators can also deceive by misrepresenting information in various ways. They may intentionally misrepresent factual information to the opponent in order to strengthen their own position, or deny the validity of information provided by the opponent, despite knowing that it is true. These examples of deceptive bargaining tactics are taken from the items of a questionnaire measuring self-reported inappropriate negotiation strategies, the SINS scale (Robinson et al., 2000). The SINS scale consists of 16 items, each describing an inappropriate negotiation strategy. Several studies (e.g., Anton, 1990; Robinson et al., 2000) have shown that these 16 behaviors can be categorized into the broader tactics mentioned above, and that people perceive those behaviors as different on a continuum of ethical permissibility.

So, how do negotiators deal with the information dilemma? Under what circumstances do they engage in deceitful activities? A starting point for the investigation of lying and deception in organizational settings is Lewicki’s (1983) behavioral model of lying and deception. Building on the assumption that the primary function of lying and deception in interdependent decision-making is to achieve a tactical advantage (e.g., French & Raven, 1959; Rubin & Brown, 1975), Lewicki conceptualizes lying and deception as influence strategies, which result from an influence situation (e.g., a negotiation) and have consequences for both the actor and the target of deception. Lewicki suggests a couple of factors which influence the motivation to select a deceptive influence strategy. On the one hand, deception is a function of the consequences of the (deceptive) behavior and the evaluation of these consequences. On the other hand, Lewicki suggests that situational factors, such as relationship between the parties, power, status, or norms, and individual differences, such as values, traits, or demographic variables,
influence the motivation to lie. Each of these will be discussed below.

Some scholars have cast *individual differences* in the tendency to lie and deceive in terms of Kohlberg's (1969) model of cognitive *moral development*. According to that model, individuals can reach various stages of moral development, ranging from stage one, obedience and punishment orientation, to stage six, universal ethical principles. Reaching higher levels should lead to more moral actions, and, consequently, to fewer unethical behaviors, including lying and deception. Although some studies (e.g., Leming, 1978; Trevino, 1986) support the notion that people at higher stages of moral development cheat less, reviews of the literature (Blasi, 1980; Rest, 1979) conclude that moral reasoning is important, but does not totally explain unethical behavior.

Several studies have related lying and deception to *Machiavellianism*. Machiavellianism is a personality construct, which is measured on an attitude scale of items derived from the writings of the famous political philosopher Niccolo Machiavelli (1469-1527). His work "The Prince" brought him a reputation for being an amoral cynic, and is widely associated with a corrupt government. Consequently, individuals who score high on the Machiavellianism scale (Christie & Geis, 1970) are generally regarded as behaving selfishly and unaltruistically, being manipulative, lacking affect in personal relationships, and exhibiting a certain disregard for conventional morality.

Exline, Thibaut, Hickey, and Gumpert (1970) gave participants a chance to cheat on a test and confronted them afterwards with the accusation that they were dishonest. While high Machs (i.e., individuals who score high on the Machiavellianism scale) did not differ consistently in their moral conduct from low Machs, the former denied the accusation longer and were more convincing at it than the latter. High Machs, thus, did not lie more, but were better at manipulating people's impressions than low Machs. DePaulo and Rosenthal (1979) found that high Machs employed successful deception strategies more often than low Machs. O'Hair, Cody, and McLaughlin (1981) assumed that high Machs, being the more skilled social performers, would be more convincing in telling spontaneous lies, whereas Machiavellianism should not influence the performance in telling prepared lies. While O'Hair et al. found no relationship between Machiavellianism and deception, Shapiro, Lewicki, and Devine (1995) found that Machiavellianism
was significantly related to employees' willingness to use deception when faced with unwanted organizational changes.

A third individual differences variable that has been brought up in connection with lying and deception is *locus of control*. Locus of control (Rotter, 1966) refers to individual differences in generalized beliefs about which forces determine the outcomes of behavior. People with an internal locus of control believe that the outcome of their behavior depends, for the most part, on their own ability or effort. People with an external locus of control, however, believe that the outcomes of their behavior depend on external forces, such as chance, luck, fate, the control of powerful others, or are simply unpredictable. Lewicki (1983) suggested that locus of control is related to the tendency to deceive. However, it depends on the situation and the reward structure which individuals are more predisposed to lie. Individuals with an internal locus of control may lie in negotiations in order to get better outcomes and boost their self-perception as good negotiators, whereas individuals with an external locus of control may lie in order to compensate for their lack of luck in the negotiation. In fact, people with an internal locus of control seem to be more likely to do what they think is right, and even to endure the disadvantages of that behavior (Lefcourt, 1982). Consequently, in management decision-making experiments, participants with an internal locus of control tend to exhibit more ethical behavior than participants with an external locus of control (Hegarty & Sims, 1978; Trevino & Youngblood, 1990).

Apart from moral development, Machiavellianism, and locus of control, Lewicki (1983) further suggests the possibility that individual differences in values could influence the motivation to engage in lying and deception. Homant and Rokeach (1970) manipulated the salience of honesty and assessed the cheating behavior of 12-year old children. However, the idea of personal values as predictors of lying and deception among adults has not received much attention in the empirical literature, maybe because the classifications of human values as they were proposed by several authors (e.g., Allport, Vernon, & Lindzey, 1960; England, 1967; Rokeach, 1973) are too broad to predict specific behaviors such as lying and deception in a particular situation (Lewicki, 1983). I will return to the role of personal values when I examine social value orientation in Chapter 3.

As noted earlier, Lewicki's (1983) model of lying and deception proposed
that certain situational variables influence lying and deception along with the individual differences mentioned above. In his review, Lewicki discussed contingent rewards and punishments, norms, power and status differences, and relationship between the actor and the target. More recent research has also focused on social motives and the distribution of information.

The proposition that lying and deception depends on the rewards or punishments an individual has received for earlier lying and deception has been given only little attention by empirical researchers. Hegarty and Sims (1978) had their participants engage in a simulated managerial decision-making task and manipulated the consequences of unethical business tactics. They found that the likelihood of unethical decisions increased when participants were rewarded, whereas threat of punishment counteracted the impact of rewards. Boles, Croson, and Murnighan (2000) had their participants engage in a series of four ultimatum bargaining tasks. One party, the proposer, had to divide a certain amount of money between him/herself and the other party, the responder, who could either accept the division, or reject it and receive an alternative payoff, while the proposer would receive nothing. In one experimental condition, responders did not know how much money the proposer had to distribute. This feature provided the proposer with an opportunity to lie about the amount (e.g., offer a little share to the responder and pretend it was a fair split). When the actual amount was revealed, the deceit became public and the proposer did not "get away with their lie," but rather had to face retribution by the deceived responders in subsequent rounds. Proposers did get away when the real amount was not revealed. In the former case, proposers offered considerably more to responders in subsequent rounds than in the latter. Although the study by Boles et al. was designed to investigate the dynamics of deception and retribution, it also suggests that rewards and punishments of earlier deceptive acts determine the likelihood of future deception. When proposers were rewarded (i.e., when they successfully deceived and their deceit was not revealed), they went on, whereas they became more honest and offered larger shares when they were punished (i.e., when their deceit was revealed and they had to face retribution).

Other studies have focused on incentives to lie and investigated how the expected rewards from deceptive behavior influence the tendency to deceive.
Rowatt, Cunninham, and Druen (1999) showed that people were more deceitful about themselves when they tried to initiate a date with a facially attractive (i.e., highly rewarding) rather than an unattractive (i.e., less rewarding) person. Aune, Levine, Ching, and Yoshimoto (1993) investigated the flip side of this, namely attributions of deceptiveness. Their subjects watched videotape messages showing either attractive or unattractive women. Although both displayed behaviors stereotypically associated with deceptiveness, the more attractive women was rated as significantly less deceptive. Both studies fit in Lewicki’s (1983) model that proposes that people lie to the extent that it benefits them. Tenbrunsel (1998) demonstrated both effects in an experiment on ethical decision-making. She found that incentives (i.e., the chance of winning a high vs. a low monetary prize at stake) influenced deceptive behavior of the target actor, and that the incentive of a target actor's opponent influenced the target actor's expectation that the opponent would engage in deception. Trevino and Youngblood (1990) showed that the likelihood of ethical conduct among managers increased with their likelihood of being rewarded for it by their organization.

In line with Lewicki’s (1983) proposition that group and/or cultural norms influence lying and deception, Aquino (1998) found that participants in a bargaining experiment deceived less when ethical climate was made salient, that is, when they were told that their company’s culture dictated that they should be honest with their customers and suppliers. Group norms do not only stimulate honest behavior, they also influence one’s perception of others' behavior as honest or otherwise. Levine et al. (2000) asked college students to make veracity judgments about the behavior of another person, which either fitted with or deviated from a group norm and that was either expected or unexpected. Weird behavior, whether expected or unexpected, was rated as less honest than normative behavior.

Some studies have tested the link between power or status differences and the use of deception. Those studies, however, produced rather mixed results. Crott, Kayser, and Lamm (1980) had male students engage in dyadic bargaining in which one party was in an advantaged bargaining position as he had better payoff possibilities than his counterpart. Crott et al. reported that advantaged bargainers bluffed more frequently than disadvantaged ones, unless they were instructed to engage in honest communication. While one might argue that this relation between
bluffing and power difference could be an artifact of the paradigm –
underestimating high payoff possibilities could be the better strategy than
underestimating low ones, Keating and Heltman (1994) have shown that social
power in fact relates to the ability to deceive. They independently assessed people’s
dominance in social interactions and their capacity to send deceptive messages.
Children and male adults who were more successful in encoding credible,
deceptive messages exerted more dominance during peer group interactions.
Keating and Heltman conclude that manipulative ability is integral to dominance
and social power.

While these studies seem to suggest that powerful individuals are more
successful or more frequent liars, the perception of having a lower status can
motivate people to engage in deception, too. In a context of consumer behavior,
Sengupta, Dahl, and Gorn (2002) found that status differences motivate people to
engage in deceptive self-presentational actions. Their participants misrepresented
the purchase price of luxury goods for self-presentational reasons. When talking to
someone of a higher socioeconomic status, people were more likely to pretend that
they paid the regular price when they bought a luxury good at a discount price.
They did not lie towards someone with a comparable status.

Blair, Nelson and Coleman (2001) investigated the relationship among
deception and power in students’ romantic relationships. They asked students to
assess their power status relative to their romantic partner, and had them rate how
likely they are to choose certain courses of (deceptive or non-deceptive) action in
several relationship-related scenarios. Both men and women reported that men
held significantly more power in the relationships. Men indicated significantly
more than women that they would be inclined to use deceptive strategies.
However, Blair et al. found no correlation between power and deception scores.

While Blair et al. (2001) investigated the influence of power distribution on
the use of deceptive strategies within couples, other studies have directly linked
lying and deception to aspects of the relationship and have thereby addressed
Lewicki’s (1983) assumption that lying and deception depend on the *relationship
between actor and target* of a lie. Studies investigating lying and deceptive
communication in close or intimate relationships (e.g., Boon & McLeod, 2001; Cole,
2001; Loving & Agnew, 2001; Metts, 1989; see also Miller, Mongeau, & Sleight, 1986)
generally show that the quality of the relation influences the type of deceptive behavior people engage in. Metts (1989) found that dating couples engaged in more falsification, whereas married couples lied more by omission. Cole (2001) had student couples to fill in their questionnaires at the same time, but unobserved by their partner. He found that lying was related to lower levels of commitment, trust and intimacy. A person's use of deception was associated with the belief that his or her partner engages in deception. Boon and McLeod (2001) found in their questionnaire study that the more strongly dating students endorsed the view that complete honesty is important in a romantic relationship, the less likely they were to report using falsification.

The relation between actor and target of a lie is not only influential within close relationships. Gruder (1971) reports that the perceived quality of one's relation to an opponent influences the use of deception in interpersonal bargaining. He had his participants engage in a simulated bargaining task, in which the preprogrammed counteroffer of the fictitious opponent was either clearly exploitative or reasonable and fair. Participants who perceived their opponent as exploitative engaged in more deception than those who perceived their opponent as cooperative. Similarly, participants in a bargaining study by Schweitzer and Croson (1999) were more deceptive when they faced a stranger rather than a friend. When selling their car to a friend, they would not lie about a technical problem, even when they were not explicitly asked about it. When the seller was a stranger, however, they were much less likely to reveal the problem, especially when they were not directly asked.

Despite not originally being part of Lewicki's (1983) model, two situational variables have been linked to lying and deception in recent empirical literature. These are social motives and distribution of information. O'Connor and Carnevale (1997) investigated the influence of social motive and of distribution of information on the use of deception in interpersonal bargaining. They assigned their participants the role of either a union or a management representative and had bargaining dyads negotiate a contract involving five employment issues, including one issue for which both parties wanted the same outcome. The common-value issue consisted in both parties' preference for a late starting date of the contract to an early one. There were three different information condition: either both bargainers
knew what their opponent's interest on the common-value issue was, or only one party knew about the common-value character of the issue, or both parties were unaware of it. A bargainer who knows (or finds out) that his or her counterpart prefers a late starting date, too, can pretend opposed interests, offer a late starting date in exchange for a concession on a different issue, thereby getting excellent outcomes on two issues. Such misrepresentation occurred less frequently when both bargainers knew about the common-value issue, and occurred especially when bargainers were instructed to maximize personal rather than joint gains. Other studies have manipulated the distribution of information and bargaining experience within a dyad and found that deception increases when parties know the opponent lacks information (Boles et al., 2000) and that lying and deception are more likely to occur when negotiators have experience with the task at hand (Murnighan et al., 1999).

Overview of the Chapters to Follow

Lewicki's (1983) model provides a good starting point for addressing the question which individual differences and situations predispose people to lie and deceive. Subsequent research has addressed many of these factors. However, this research has several shortcomings. First, it has been systematically assumed that individuals in conflict and negotiation are exclusively motivated to do well personally and to disregard the outcomes of their negotiating partners. Second, the fact that individuals often have information or beliefs about their partner's cooperative or competitive goals has been ignored. Third, previous work remained silent on the fact that in conflict and negotiation people are more or less concerned with face and reputation. Fourth, and finally, past work has greatly illuminated when and how often people lie and deceive, but gave little insight over why they did, nor how they did so. All these issues will we addressed in the present dissertation.

Research into lying and deception has used an arsenal of different research paradigms, like questionnaires, scenario studies, face-to-face negotiations, or bargaining games. These experimental paradigms have strengths and weaknesses, which I will discuss in Chapter 2. Taking the strengths of the various paradigms to investigate the "when" and the "how" of misleading an interdependent other, and
avoiding their shortcomings, led to the development of the Information Provision Game, used in five of the experiments in this dissertation. I will describe and discuss the Information Provision Game in Chapter 2, as well.

Recognizing the importance of social value orientation for social decision-making, the first question of this dissertation is whether and how one's own social value orientation influences one's tendency to engage in lying and deception. As social decision-making involves choices of (at least) two persons, I reason that one player's expectation about the counterpart's social motive should be crucial in his or her attempt to influence the counterpart's decision-making. The second question of this dissertation is, therefore, whether and how one's expectations about other's social motive influence one's tendency to engage in lying and deception. The third question that arises is to explore the mediating processes, or, the motives why certain people mislead other people. Is deception driven by greed, by fear of exploitation, or by some desire to punish (expected) wrongdoing?

These first three questions are addressed in Chapter 3, in which I try to shed more light on the factors that motivate people to engage in lying and deception. I argue that people take their perception of their opponent's motivational goal into consideration. I show that people honestly provide accurate information to a counterpart they believe to be cooperative, while they provide inaccurate and misleading information when they expect their counterpart to be competitively motivated. I further investigate the motivation behind that behavior.

Whereas the studies in Chapter 3 focus on factors that stimulate lying and deception, in Chapter 4, I investigate one possible motivation for refraining from self-serving lying, namely concern with reputation. I argue that people lie less when they have a reason to assume that engaging in lying and deception would harm their reputation. When and why reputation matters can be explained from a social psychological and an economic model of behavior. The predictions from both models will be contrasted, and an individual differences variable will be added to the list discussed above. Specifically, I argue and show that people's predisposition to engage in self-monitoring (Lennox & Wolfe, 1984; Snyder, 1974) moderates the effects of their concern with reputation on lying and deception.

In Chapter 5, I summarize the findings, provide a general discussion, and suggest some avenues for further research.
Research into lying and deception has used a variety of research paradigms. Techniques as different as scenarios, ultimatum bargaining games, or face-to-face negotiations have been applied to investigate the antecedents, the motives behind, and the consequences of deception. In the following, I will describe some of the paradigms which have been used to investigate lying and deception in empirical research. I will illustrate each paradigm with an example of a study in which that particular paradigm was used, and will discuss its strengths and weaknesses. I will then describe the "Information Provision Game." The Information Provision Game is the research paradigm that I have developed and used in most of the experiments. It combines the important strengths of the aforementioned paradigms, but is without some of their crucial limitations.

Observing or Assessing Real-Life Interactions

Intuitively, one could argue that the best way to find out when, how, and why people lie, is to observe them, keep track of when and how they lie and ask them why they did it. Unfortunately, things are not that simple. Even if an omniscient researcher would be able to systematically observe a large and representative sample of people twenty-four hours a day, and would manage to do that without being noticed by her subjects, she would still not know whether the behavior she has observed really is the construct that interested her. As we know from the extensive literature on lie-detection (see Chapter 1), there are no thoroughly reliable technical means or theoretically sound guidelines to help one spot lying and deception, so we have to dismiss our hypothetical omniscient researcher who could determine from
mere observation whether someone is lying or not as wishful thinking for the time being.

Despite this problem, there are some studies on lying behavior in real-life settings. Vrij and Mann (2001) investigated lying behavior and the detectability of lies in high-stake situations. They analyzed videotapes of police interviews with a suspect who was accused of murder. The suspect kept denying that he had committed the crime throughout the entire police investigation, but was later convicted on the basis of solid evidence, and finally confessed. From videotapes of the police interrogation, the authors selected fragments in which the suspect either lied or told the truth. This original material of lying and truth-telling in a high-stake situation was then used to test the accuracy with which police officers could discriminate between truth-telling and lying. Owing to the use of original material which was analyzed for cues to deception, Vrij and Mann's (2001) approach has proven be successful in validating experimental findings in high-stake situations which cannot be created in a laboratory setting. However, a murderer lying during police investigation is certainly a very special case of lying. By interpreting observations arising out of such cases, therefore, we could not possibly gain much insight into the question of when, how, and why "common people" engage in lying and deception.

When collecting observational data on the prevalence of lying in everyday life, researchers face the problem that they have to determine whether an observed everyday interaction contains lying. One way to avoid this problem is to rely on people's self-report about when and why they lied. Lying and deception are not directly observable constructs, therefore the quality of a researcher's observational data is limited by his or her ability as a lie detector. However, as lying is an intentional behavior (see Chapter 1), liars themselves could collect data on their own lying behavior. Self-reports can be gathered in various ways, such as in open, structured, or semi-structured interviews (e.g., Pugh-Lilly, Neville, & Poulin, 2001), in survey research (e.g., Backbier & Sieswerda, 1997; Metts, 1989), or by making people keep track of and post-hoc analyze their own behavior (e.g., DePaulo, Kashy, Kirkendol, Wyer, & Epstein, 1996; Turner, Edgley, & Olmstead, 1975).

*Diary studies* are widely used in areas as different as social psychology, work and organizational psychology, health psychology, and developmental psychology.
(e.g., Carney, Armeli, Tennen, Affleck, & O'Neil, 2000; Conner, Fitter, & Fletcher, 1999; Donahue, 1993; Reis & Wheeler, 1991; Sonnentag, 2001; Wheeler & Reis, 1991; see also Reis & Gable, 2000; and Visser, Krosnick, & Lavrakas, 2000). The largest and most systematic diary study of lying and deception in everyday life to date was conducted by DePaulo et al. (1996; Kashy & DePaulo, 1996). During one week, two samples of participants, one consisting of 77 undergraduate students and the other of 70 community members, recorded all social interactions of ten minutes and longer, and shorter interactions just in case they contained a lying incident. For each interaction, participants indicated various measures, such as date, time, and duration, the number of persons involved, gender of those, a rating of how pleasant and how superficial or meaningful the interaction was, and whether the participant was more influenced by his or her partner, or vice versa. In case that the participant had told a lie during the interaction, he or she briefly described the lie and the reasons why he or she told it (formal polite answers like "fine" on the question "how are you?" were not regarded as lies). Participants further indicated for every lie in how far they had prepared it, how important they considered it not to get caught, how serious they considered the lie, how comfortable or uncomfortable they felt before, while, and after telling the lie, and their impression of the target's reaction to the lie. One week later, participants reported back to the researchers telling them whether their lie had been discovered, and whether they would lie in the same situation again. Additionally, personality measures, like self-esteem, social participation, manipulative behavior, impression management, social self-confidence and sociability, were collected. The data collected in this diary study confirmed the view that lying is not extraordinary, but rather a fact of daily life. Both college students and community members frequently told lies. They reported that they considered most of their lies as being of little importance, and that they neither regretted having lied, nor were afraid of getting caught (see also Chapter 1).

Self-report studies are a useful tool to gather data from a representative sample, even on behaviors which are difficult to observe. An accurately done diary or survey study can elicit insights into the prevalence of certain types of tactical behavior (e.g., lying and deception) in the general population. Self-report studies can further our understanding of lying and deception, and of co-occurring phenomena.

A caveat of diary studies, like of any other self-report measure, is that they are
open to various distortions which systematically influence what participants report. To diminish distortions, DePaulo et al. (1996) took many steps to elicit highly accurate and complete records of their lies. They thoroughly trained their participants in the use of the interaction records and informed them about the importance of accurate records. Anonymity was secured and the amoral approach to lying was made clear to them. Participants also knew that they would receive their reward, even if they would stop prematurely. Nevertheless, one cannot rule out that, for example, participants hesitate to report severe lies because they might feel ashamed of themselves for doing such an outrageous thing. And even if participants are sure about their anonymity and would report all the lies they remember, their report would hardly be objective either. It is possible that shame-evoking lies prevail in the diaries, because they are more easily retrievable from memory, as the liar has been more intensely busy thinking about them. Yet it is also possible that shame-evoking lies are more difficult to remember. Psychoanalytic theory claims that one psychological defense mechanism of the self is repression, the mechanism to exclude unacceptable mental contents from the awareness (Freud, 1935).

Even if participants could report all their lies, one would still wonder whether the motivations and antecedent situations they describe can give one accurate insights into the reasons for and causes of their lying. A single lie is a distinct incident, and if people tell a couple of lies a day, it must be possible that they report all of them accurately, one should think. The situational circumstances around each specific instance of deception, however, are numerous. The person is in a unique state of mind. He or she might experience a number of different emotions, such as anger, happiness, guilt, envy, disappointment, he or she might be bored, excited, frustrated, tense or relaxed, etc. The situation in which the lie was told has many aspects which could have influenced the person to tell the lie, like the time of day, the place, other people around, maybe even the weather. Also, the interaction in which the lie was told has an indefinite number of aspects. The prior experiences of the liar with the target alone can be virtually infinite. Finally, person and situation variables can interact to influence the person’s tendency to lie – maybe the fact that somebody is bored with their current task while the weather is fine and they would rather go swimming motivates them to engage in lying. Altogether, a lie could be a distinct incident which people should be able to report correctly in their diary. This
incident, however, occurs in a very rich situation. Even if a participant could report a lie in an unbiased way, distortions may occur in his or her report of the situation and the antecedents of the lie. Participants’ self-reports might be biased due to their desire to justify having lied (e.g., they could overstate the situational pressure to lie, or understate how severely the lie affects the target). Another potential source of bias is inherent in the participants’ potential failure to remember every detail of the situation around their lie. In that likely case, their reports might rather reflect their implicit hypotheses about lying than their actual behavior and motivations.

Another caveat of most diary studies is that the observations are correlational. Although some self-report studies are designed as experiments, for example by randomizing different versions of the questionnaire among the respondents, causality is difficult to prove in diary studies. Even though the correlations between some personality measures and lying and deception in the diary study by Kashy and DePaulo (1996) seem to suggest that certain personality traits make people more or less apt to lying, the findings of the study cannot be interpreted as proof of the above causality. Theoretically, the causality could be the other way round, that is, people acquire certain personality traits because of their tendency to lie. Kashy and DePaulo, for example, hypothesized that the better the relationship the more that hampers lying. Their data showed that people who report more satisfying same-sex relationships engage in less lying and deception, while no such correlation emerged for different-sex relationship quality and lying. The correlation cannot be interpreted as causal evidence: Either people do not lie towards same-sex individuals with whom they have a satisfying relationship, or they have satisfying same-sex relationships when they refrain from lying. Alternatively, third variables could influence the tendency to lie and personality measures alike, causing the spurious correlation. Maybe personality determines the situations people get involved in, and different situations offer different possibilities or temptations to lie.

Despite the development of various approaches to establishing causal relationships in quasi-experimental settings (see Campbell & Stanley, 1963), the most solid way to show causality rather than co-occurrence is the controlled experiment. In the following, I will discuss some paradigms that can be fittingly used to investigate lying and deception in controlled experimental settings.
Instructing Participants to Lie

In the most recent review of the literature on deception, DePaulo et al. (2003) list the experimental paradigms which have been and are widely used to investigate lying and truth-telling. Frequently, participants were explicitly asked to lie or tell the truth about different personal matters, or about their opinions and beliefs. For example, the participants in a study by DePaulo and Bell (1996) had to select from a number of paintings the ones they liked most and the ones they liked least. Then, they were confronted with a confederate who allegedly was an art student and had painted some of the paintings. Participants were either instructed to be honest, or to be polite when expressing their opinion about these paintings. In other studies, an even more explicit deception induction was applied. Participants were asked questions and were instructed to answer a certain number of questions honestly, and then switch to giving untrue answers (e.g., Burgoon, Buller, White, Afifi, & Buslig, 1999; DePaulo, Lanier, & Davis, 1983).

Several variations of this paradigm exist. Some, for example, involve film sequences or photographs which are shown to participants, who are then asked to either describe truthfully or lie about what they saw (e.g., Vrij, Edward, & Bull, 2001a, 2001b).

Many studies applied a paradigm in which participants were induced to cheat on a test and had to conceal this in the subsequent interview (e.g., Exline, Thibaut, Hickey, & Gumpert, 1970). Similarly, in mock crime paradigms, participants are instructed to "steal" a small amount of money, which they were allowed to keep when they managed to successfully lie about the "crime" in an interview. In card tests, participants receive a number of playing cards and are instructed to lie if asked whether they possess certain cards.

The aforementioned paradigms have in common that people are explicitly instructed to tell the truth or to lie. Therefore, those are useful paradigms to investigate people's behavior while lying, or to assess their success in conveying deceptive messages. However, experiments in which people are instructed to lie do not tell us much about when, how, and why people themselves decide to engage in deceptive behavior. In the following, I will describe what DePaulo et al. (2003) call "naturalistic paradigms," that is, paradigms in which participants are not instructed to lie, but rather choose on their own between truthfulness and dishonest behavior.
Scenario Studies

Using a scenario paradigm, Schweitzer and Croson (1999) investigated whether direct questions keep people from lying. Their participants read four versions of a vignette and had to imagine that they were about to sell their 7-year old car, which had a transmission problem which was not immediately noticeable, but would need to be fixed. Participants had to indicate how likely they would be to mention the transmission problem if a potential buyer, either a friend or a stranger, explicitly asked whether there are any technical problems and how likely they would be to mention it if not asked about it. The authors found that participants lied less to friends than to strangers, and that they lied less when directly asked than when not asked.

A scenario experiment like the one done by Schweitzer and Croson (1999) has a couple of strengths and advantages. First, it is a cost-effective way to collect data. Scenario questionnaires are quite easy to administer to almost any population. Second, a scenario questionnaire offers a high degree of experimental control over the variables which are manipulated. Furthermore, the questionnaire items usually provide good estimates of latent variables such as motivation or intention.

Nevertheless, the scenario study suffers from a methodological shortcoming which is inherent in the experimental paradigm. This unavoidable weakness is that in a scenario study it is only possible to measure intentions rather than behavior. Self-reported behavioral intentions differ from actual behavior in a couple of ways. One reason is bias due to self-presentation. Maybe the participants in the study by Schweitzer and Croson (1999) would in fact lie about the transmission problem when selling a car to a friend, but they would not tell the experimenter that they would do so. This might be the case due to social desirability bias. Alternatively, participants may be ashamed to indicate that they would lie to friend.

Biases due to concern with self-presentation are not the only possible reason why behavioral intention can differ from real behavior. Even when participants indicate as accurately as possible how they think they would behave, this intention can differ from how they might end up behaving in a real situation. Maybe the participants were convinced that they would not lie to their friend about the technical problem when they read the vignette. When they experience the situation for real, however, subjects may act differently, as the reasons why they should
nevertheless lie can be numerous. For example, greed could come into play when they cannot resist the temptation to make some extra money. Alternatively, they may, upon seeing their friend's eyes glisten with delight during the test ride, feel obliged to lie about the technical problem, in order not to spoil the friend's joy about buying the car.

Due to this limitation, the results from scenario studies must be interpreted with caution. Schweitzer and Croson (1999) conducted a follow-up experiment in which they replicated their scenario findings in a role-play negotiation task. When combined with a confirmative experiment applying a different paradigm, the shortcomings of a scenario study do not weight as heavily. Scenario studies can definitely contribute to the external validity of experimental findings by extending them beyond laboratory settings and student populations.

**Interpersonal Bargaining**

One way to study real bargaining behavior rather than intentions is to have participants engage in role-play interpersonal bargaining. This paradigm allows researchers, in a highly standardized experimental situation, to explore the influence of various variables on the way people behave in interdependent situations.

In negotiation experiments, participants usually engage in what Schelling (1960) called "explicit bargaining." Explicit bargaining requires that parties have divergent interests, communication and mutual compromise are possible, and parties can exchange provisional offers, which do not set the tangible outcomes until mutually accepted. A negotiation experiment typically involves two people who negotiate an economic exchange. Both parties receive information about the own payoffs of all possible agreements; sometimes they receive information about the other's payoffs as well. By exchanging offers, both parties try to reach an agreement.

The paradigm of role-play negotiations can take various forms to fit the theoretical demands of the study. One characteristic of the task at hand is the number of issues at stake. The negotiation can consist of only one issue (e.g., the price of a used car), or of various issues (e.g., the price of a new car, warranty, equipment, color, delivery date, etc.). In the former case, the negotiation is a completely competitive win-lose task. In the latter case, parties might have different priorities between the issues at stake, which makes the negotiation a problem-
solving task which offers win-win solutions from which both parties gain more than from simple compromise. Another characteristic along which role-play negotiation paradigm can vary is the communication medium. The two parties can negotiate while they sit face-to-face at the bargaining table, or they can interact via a more restricted medium, like the telephone, email, written messages, and so forth. In interpersonal bargaining experiments, participants do not necessarily have to negotiate until they reach an agreement. Some research questions (e.g., research on first impressions or pre-negotiation information processing) do not require the bargaining process to be completed – a few number of rounds, or even only the exchange of opening offers might suffice.

O'Connor and Carnevale (1997) used a two-party face-to-face interpersonal bargaining setting to investigate the use and effect of misrepresentation. Participants were assigned to a negotiating dyad, each member was given the role of either a union or a management representative, and each received a payoff table showing the five employment issues on which they had to reach an agreement. On four of those issues, namely salary, vacation, annual raise and medical coverage, parties had different interests. The management preferred to pay a lower salary, give less vacation, and so forth, while the union preferred a higher salary, more vacation, and so forth. On the fifth issue, starting date, both parties had the same preference, namely, both gained most when agreeing on a late starting date. This common-value issue gave both parties the opportunity to dishonestly claim that they would prefer an early starting date, and ask for a concession on a different issue in order to agree on a late starting date. The participants negotiated until they reached an agreement. The tape-recordings of their communication were transcribed and coded for the occurrence of negotiation behaviors such as the provision of numerical information, the provision of priority information, requests for information, threats, positional commitments, offers, and rejection of offers. Additional codes were given for misrepresentation by commission, that is, when one bargainer misleads the opponent on purpose and states opposed interests with regard to the common-value issue, and for misrepresentation by omission, that is, when a bargainer fails to correct an opponent who has made a faulty assumption. O'Connor and Carnevale found that in about 28% of the dyads, a negotiator applied that "nasty but effective negotiation strategy" (p. 504) of misrepresentation. As they had expected, deception
occurred especially when bargainers were instructed to increase individual rather than collective outcomes, misrepresentation occurred together with other competitive behaviors, and deception increased the individual outcome of the deceiver.

The interpersonal bargaining paradigm is a well suited way to explore under which circumstances people lie to an independent other. Because it is possible to experimentally manipulate those circumstances, interpersonal bargaining experiments allow testing causal relations, and it is possible to observe deceptive behavior rather than intentions.

However, the interpersonal bargaining paradigm has some shortcomings as well. The experimenter or the raters have to determine for each behavior they observe whether that certain behavior represents an instance of lying and deception. The more naturalistic the setting (with face-to-face negotiations probably being the most naturalistic experimental setting), the more communication channels the bargainer can use, and the greater the likelihood that instances of lying and deception might remain unnoticed by the raters, or that raters might perceive a statement as deceptive, while it was neither intended so by the focal negotiator, nor understood as such by the target. A bargainer pretending opposed interests and simultaneously blinking with one eye to mark the statement as a joke and thereby actually revealing information might be an example of a negotiation behavior which raters might erroneously code as a lie.

Furthermore, the free interaction of two (or more) participants reduces the experimental control. Lying and deception could, for example, leak through nonverbal behavior, which influences the bargaining process, but remains unnoticed by the experimenter. Experimental control can be enhanced by having only one experimental participant negotiate with a confederate who follows a script, or, in case of the computer-mediated negotiation, with a pre-programmed computer. The enhanced experimental control comes at the expense of diminished "richness" of the data and maybe less mundane realism of the experiment. I will return to the latter point in the conclusion of this chapter.

The so-called experimental games have been developed as a possibility to translate the crucial aspects of mutual dependence which are present in negotiation into a highly controlled setting. In the following paragraph, I will describe
Experimental games as a model of a bargaining situation and will discuss in how far they can be applied to the study of lying and deception.

The Prisoner's Dilemma and Similar Experimental Games

Having two participants engage in explicit bargaining almost necessarily results in lack of experimental control. To address this practical issue, researchers have developed several highly structured experimental paradigms to investigate mixed-motive interaction. The most famous of these two-person, two-choice experimental games is the Prisoner's Dilemma Game (henceforth, PDG; see Rapoport & Guyer, 1966). In the PDG, two players (A and B) face the same decision, whether to choose move 1 or move 2. If both players choose move 1, both receive a reward (for example both earn 10 points). If both go for move 2, both get punished (i.e., both receive only 5 points). If the players make different choices, then the player who chooses move 1 receives a more severe punishment than when both choose move 2 (e.g., 0 points), while the player who opts for move 2 receives a higher reward than when both choose move 1 (e.g., 15 points).

The dilemma in this game consists in the following: Choosing an individually favorable move prevents the players from reaching a collectively favorable outcome. For each player, choosing move 2 is a guarantee of higher individual gain than choosing move 1, regardless of the choice of the other player. Choosing move 2 yields 15 points when the other goes for move 1, and 5 points when the other goes for move 2. Choosing move 1 yields 10 points when the other player opts for move 1 too and 0 points when the player who is second to choose goes for move 2. Parties who base their choices on rationality therefore choose move 2 and get locked in mutual defection. Move 1 is also referred to as the "cooperative move" (or move C), because when both players choose move 1 the joint profit is maximized. Analogously, move 2 is also referred to as the "defective move" (or move D), as choosing move 2 increases the own outcome and decreases the other player's outcome, irrespective of the other player's choice. The outcome matrix of a PDG resembles the interdependence structure of many real-life situations, like bargaining, or the information dilemma (see Chapter 1; see Nemeth, 1972, for a critical review of the PDG).

Some studies have investigated what happens when players in a prisoner's
dilemma game lie or tell the truth when they announce that they would adopt a certain strategy (e.g., Benton, Gelber, Kelley, & Liebling, 1969; Bonoma, Tedeschi, & Helm, 1974; Lindskold & Horai, 1974; Monteverde, Paschke, & Tedeschi, 1974). However, these studies do not further our knowledge of when, why and how people mislead an interdependent other, because they focus on the consequences rather than the antecedents of deceit.\(^2\)

The PDG and related two-person, two-choice experimental games are deficient to study lying and deception for two reasons. First, in a prisoner's dilemma, players can only choose between two (sometimes three) distinct courses of action and they usually have full knowledge of what their action means for their own outcome and the outcome of their opponent. Lying and deception, therefore, when it occurs, is almost necessarily lying about one's intentions. The only lie which "makes sense" in a PDG is to announce a cooperative move (i.e., to say 'I'll choose move 1 in the next game' or 'Let's both choose move 1'), in order to make the other player choose the cooperative move (i.e., choose move 1 so as to achieve the highest joint gain). The player who has made the mendacious announcement that he or she will go for the cooperative move can then increase his or her own gain by making the competitive move instead.

\(^2\) Related to experimental games such as the PDG, game theorists, economists and mathematicians have provided structural analyses of people's behavior alternatives and of expected outcomes. They approached basic questions such as "Under what circumstances is it a rational choice to engage in lying and deception?" in a variety of ways: by developing mathematical models to determine rational choices for actors in interdependent situations, by deducing which interdependence structures or market conditions are most susceptible to deception (Darby & Karni, 1973), by analyzing the influence of reputation in exchange relationships (Lahno, 1995), or the deception possibilities of parties in conflict (Brams, 1977; Brams & Zagare, 1977, 1981; Inohara, Takahashi, & Nakano, 1997) and by designing bargaining procedures which should induce bargainers to be honest in proposing settlements (Brams, 1990; Chatterjee, 1985). Mathematical models, however, cannot explain people's behavior. Rather, they can give prescriptive advice about how likely it is that certain behavior will lead to certain outcomes. As such, mathematical models might be a starting point to derive hypotheses about variables that influence behavior, but they cannot test these hypotheses. The aim of this dissertation, however, is to investigate when, how, and why people deceive interdependent others. Therefore, I will ignore those approaches to lying and deception which are prescriptive rather than descriptive and will focus on research paradigms which allow one to test specific hypotheses in empirical studies.
The second reason why the PDG is deficient to study lying and deception is the fact that deceiving in the PDG is fundamentally different from real-life cheating. In a PDG, the cheater cannot assume that he or she will "get away with it." The deceit in a PDG is immediately revealed as both parties can deduce which move the other party has made from the outcomes they get. This is the opposite of the situation of the "everyday liar," who assumes that his or her lie will not be detected by the target (DePaulo et al., 1996).

The Ultimatum Bargaining Game

The Ultimatum Bargaining Game (henceforth, UBG) is a two-player game. One player, the proposer, suggests the division of a given amount of money (or coins) between himself and the other player. The money to be divided is often called "the pie." The other player, the responder, can either accept or reject the proposed division. When the responder accepts, each player receives their respective portion of the pie as divided by the proposer. When the responder rejects, however, both players receive nothing (see Camerer & Thaler, 1995, for a review on ultimatum bargaining).

The UBG is a very simple bargaining game, for which game theory offers a straightforward prediction about how players (seen as income maximizers) should behave. Responders should accept any offer, because anything is better than nothing. Proposers, therefore, should offer one cent, and keep the greatest share for themselves (Camerer & Thaler, 1995; Roth, 1995). However, people do not behave according to game theoretical predictions. Proposers typically offer shares of 30 to 40 percent, and even fifty-fifty splits are often suggested. Offers of 20 percent are most frequently rejected. Responders seem to prefer getting nothing to accepting a division which yields more profit to the proposers. A frequently investigated explanation for this behavior has been concern with fairness (e.g., Blount, 1995; Croson, 1996; Güth & Tietz, 1990; Pillutla & Murnighan, 1995, 1996).

Pillutla and Murninghan (1995) investigated whether proposers tried to be fair or to appear fair. To this end, they manipulated the responders' knowledge of the size of the pie which was to be divided. Additionally, some offers were given the label "fair," either by the proposer, or by a neutral third party. When proposers could give a label to their own offers, the vast majority of them strategically used their
information advantage and made smaller offers whenever the responder did not know about the size of the pie, while making larger offers when the responder was aware of it. More interestingly, more than 60 percent of the proposers made lower offers when they could add a fairness label than when they could not. This means that when proposers had the chance to (falsely) claim that they acted fair, they in fact made offers which were less fair. Pillutla and Murnighan conclude that the proposers were trying to appear fair, while they actually attempted to maximize their own outcomes. Rather than being truly fair (e.g., proposing equal splits when they label an offer as fair), they used cheap talk – they fraudulently labeled exploitative offers as fair.

Boles, Croson and Murnighan (2000) used the UBG paradigm to further explore the dynamics of deception and retribution. Their participants engaged in several rounds of ultimatum bargaining. Proposers always knew what the size of the pie was, and responders always knew what the size of their outside option was, that is, the amount of money responders would get when they reject the proposer's offer. Whether or not the proposer was aware of the outside option, and whether or not the respondent was aware of the size of the pie was experimentally manipulated. Respondents started the game by sending a message to the proposer. In this free message, responders could make a specific demand, truthfully reveal their outside option, misrepresent the value of their outside option, or make any other statement. The proposer, then, replied with an offer and a message (which could include truthful or deceptive statements about the size of the pie, doubts, threats, apologies, etc.). The responders, finally, rejected or accepted the offer. Boles et al. found that proposers exploited the responders' lack of knowledge, as offers were lower when the responder was not aware of the size of the pie.

More importantly, players, proposers and responders alike, also took advantage of the other party's lack of knowledge by sending deceptive messages only when the opponent was not aware of their private information. To investigate reaction to detected deceit, the private information of some players was revealed after two rounds of ultimatum bargaining. Players who found out that they had been deceived by their counterpart rated the other player as less truthful and trustworthy, and expressed a diminished desire to engage in future interaction. Responders reacted to revealed deception by demanding greater shares and by
rejecting subsequent offers. That is, responders who found out that they had been deceived in earlier rounds rejected many offers, whereas responders who did not know that they had been deceived accepted similar offers.

As the study by Boles et al. (2000) demonstrates, the UBG is a useful paradigm to explore the dynamics of deception and retribution in repeated bargaining. However, some caveats inherent in the standard ultimatum bargaining game limit its appropriateness for the purposes of this dissertation, namely to investigate when, why, and how people use the provision of accurate and inaccurate information to influence a counterpart’s decision-making. Firstly, like in the standard interpersonal bargaining experiments, one cannot measure deception directly. One rather has to figure out from the messages parties send whether or not deception has occurred. Therefore, it remains disputable if a party has deceived at all, at least in those cases where deceivers have been careful with their words and have given the deceptive message in an implicit way. Secondly, there is no clear measure of the "magnitude" of the deception, that is, how far does the deceptive statement deviate from what would have been an accurate statement. Finally and most importantly, the UBG does not allow the researcher to study the "direction of deceit," as it was done in the interpersonal bargaining study by O'Connor and Carnevale (1997). To address these issues, I have designed a task that makes it possible to measure both the amount of deception and the direction of deceit. This task, the Information Provision Game, will be described in detail in the next section.

The Information Provision Game

The Information Provision Game is modeled after the Dictator Game. Participants are made to believe that they would interact in pairs, with one player taking a decision which determines both parties outcomes. The decision maker has no information about what his or her decision means for the other party involved. The other player, in turn, plays the role of information provider. The information provider may inform the decision maker about what the latter's decision would mean to them. That is, the information provider can reveal his or her private information to the decision maker. In doing so, the information provider can be honest or deceive. Deceiving means that the information provider does not communicate his or her real preferences, but tries to mislead the decision maker by
stating different preferences. In actual fact, all participants play the role of information provider and could influence the decision of the decision maker by the information they send to him or her. By providing accurate or inaccurate information, participants can make some options appear more or less attractive and thus try to steer the other’s decision.

Participants are seated in cubicles equipped with a computer, a pen and several blank sheets of paper. On their computer screens, participants can read the instructions for playing a decision game. They find out that they are about to be paired with another player, with whom they are going to interact via the computer network. Participants are told that they would never find out with whom they played, and roles (player 1 or player 2) would be determined at random. In fact, each participant is placed in the role of information provider (player 1).

The purpose of the decision game is to determine an outcome concerning two issues, A and B. On both issues, one out of three levels, x, y, or z, has to be chosen. Player 2 (henceforth referred to as decision maker) would determine for both the issues A and B which level (x, y, or z) would be chosen, and, as such, would determine both his or her own outcomes and the outcomes of player 1 (henceforth referred to as information provider). Participants also read that the decision maker would receive information about his or her own payoffs, but would never receive objective information about the information provider’s payoffs. Thus, the decision maker would only have incomplete information. The information provider would receive information about both his or her payoffs and the decision maker’s payoffs (with one exception, see below).

The information provider would start the game by sending a message to the decision maker with information about the outcomes he or she would receive for each of the possible decision options the decision maker could choose from. The decision maker would then be asked to make a decision determining both his or her own outcomes and the information provider’s outcomes. It is emphasized that decisions would result in a number of points, and that points would be converted into lottery tickets. The more points gained, the more lottery tickets one would get and, hence, the greater one’s chance of winning a cash prize.

Participants receive their payoff tables and a detailed explanation. A quiz ensures that the instructions are understood. In their payoff table, they can see that,
on issue A, they could earn 6, 3, or 0 points and on issue B, 2, 1, or 0 points on the levels z, y, or x, respectively. The decision maker's payoff table is the mirror image of their own. (In the first experiment, I manipulated the task structure and participants were shown different payoff tables, see the Method section of Chapter 3). The information that the participant is "player 1" and the payoff tables of "player 1" and "player 2" remain visible on the screen (see Appendix A).

It is repeated that the decision maker has no information about the payoffs of the information provider and would never get objective information. Participants are told that they could provide information about their own payoffs to the decision maker, that is, they could show the decision maker how their payoff table looks like. For this purpose they could fill out an empty payoff table that would be sent to the decision maker. Participants are also told that they could claim anything they wanted, that is, they could give as much information as they wanted and are free to choose between giving accurate and inaccurate information.

Participants are then shown an empty payoff table and, on the same screen, a row with 25 boxes containing the numbers from -12 to +12, and a box containing a question mark. Participants are told that for each of the six cells of the payoff table they could select by mouse-click either a number between -12 and +12, or click on the box with the question mark when they do not want to give any information about their points in that cell (see Appendix A). The choice would then appear in the appropriate cell of the payoff table (see Appendix B). After this choice is made for all six cells, participants can change their choices as often as they want. Only after they confirm by clicking the "send" button, would their choices become definite. The payoff table with the values participants claim they get (in cells xA, yA, zA, xB, yB, and zB) is then allegedly sent to the decision maker.

The reader can consult Appendices A and B for the computer screen the participants can see during the game, along with two hypothetical response screens, one filled out by a participant providing full and accurate information, and one filled out by a participant providing full but inaccurate information.

The numbers provided in each cell (i.e., the numbers participants claim to be the values of the cells xA, yA, zA, xB, yB, and zB in their own payoff table) are used to create two related indices of information provision. All information is classified as either accurate or inaccurate. Inaccurate means that the number a participant entered
into a cell was higher or lower than their actual payoff in that cell. The *amount of accurate information* is the number of cells that contain accurate information, and the *amount of inaccurate information* is the number of cells that contain inaccurate information. Both indices are discrete with a range of 0 to 6, the sum of both indices equals the *total amount of information* provided. As participants have to enter numbers or question marks into six cells of the payoff table, the number of cells in which they give no information (question marks) equals six minus the amount of accurate information minus the amount of inaccurate information.

The aim of this dissertation is to investigate when, why, and how people influence the decision-making of interdependent others by the provision of accurate or misleading information. As a paradigm to investigate these questions, the Information Provision Game is constructed to combine the strength of the paradigms outlined above and to avoid many of their limitations. First, being an experimental paradigm, the Information Provision Game makes testing causal hypotheses possible. In many of the experiments in Chapters 3 and 4, for example, I have manipulated the expectations about the decision maker's motivational goal. Of course, other structural variables can be manipulated, like the importance of outcomes to both parties (see Experiment 2 in Chapter 3), or the presence or absence of observers (see Chapter 4). As participants are randomly assigned to experimental conditions, observed differences can indisputably be attributed to the experimental manipulation. This is a clear advantage over diary or quasi-experimental studies, which cannot rule out the possibility that the findings are also caused by third variables.

Second, the Information Provision Game is a tight paradigm which offers a high level of experimental control. The interdependence situation in the Information Provision Game is reduced to an abstract setting. Participants have to influence the decision of an anonymous other on two issues, A and B. The abstractness of the social situation minimizes random uncontrollable influences of the social setting. In environmentally richer experiments, like the scenario of selling a used car (Schweitzer & Croson, 1999), participants might act according to certain social norms or according to prior experiences with similar situations. This is hardly the case in the Information Provision Game – in real life, you do not consider whether to choose level x or z on issue A.
So how realistic are experiments based on the Information Provision Game? In my view, the abstractness of the Information Provision Game setting is an advantage rather than a limitation. Aronson and Carlsmith (1968) argued that experiments can be realistic in two senses. One of the senses is the so-called mundane realism. An experiment has mundane realism when the events that occur in the experimental situation are similar to events which occur in "real life." Mundane realism, however, is not a prerequisite for an experiment to be important.

More important than mundane realism is experimental realism. Experimental realism is present when the situation involves the participants and has an impact on them. Having observed the participants during five Information Provision Game experiments, and talked to many of them after that, I do not doubt the experimental realism of the Information Provision Game. Some participants were disappointed when they found out that they were not the ones to take the decision, some were relieved when they received the (false) information that their opponent was a cooperative person. Many participants corrected their messages several times until they "looked good," before definitely sending them. Some were even so proud about how they managed to mislead the other that they were disappointed when they were debriefed and told that they did not really interact with any real person.

To mention two more strong points of the Information Provision Game, not only is it exciting to play, but it also has another major advantage – the main dependent variable observed is a behavior. People do not just indicate whether they would deceive someone if they were in a position to do so, they really do something: They either hold back, or accurately disclose information, or they lie and mislead their opponent.

Finally, the Information Provision Game allows a quantitative as well as a qualitative assessment of deceit. In one of the first social-psychological experiments on lying and deception, Kelley (1966, p. 60) reasoned that for negotiators, "in giving information there are three alternatives: to tell the truth, to lie, or to say nothing." While I will surely not contradict this statement, the Information Provision Game allows assessing more than which of these three alternatives people choose. In contrast to previous research on lying and deception in social decision-making, the Information Provision Game allows one not only to examine the extent to which individuals misrepresent their preferences and priorities, but also the direction in
which they try to mislead their counterpart. Furthermore, the Information Provision Game can reveal some information about the magnitude of a lie, as it is possible to assess how far the inaccurate information that a participant provides deviates from the objective information.

Altogether, the experimental task allowed us to look at the provision of information in close detail, learning about the amount of accurate and inaccurate information provided, and about the direction of deceit. We see this as an important advance over earlier studies on lying and deception, which were only able to code whether lying or deception occurred or not.
In his classic novel "The Adventures of Tom Sawyer," Mark Twain tells the story of Tom Sawyer, who is painting Aunt Polly's fence when Ben Rogers walks by, eating an apple and heading for the river to go for a swim. It is a beautiful day and when Ben asks why Tom is painting the fence rather than going for a swim, Tom decides not to answer truthfully — instead he tells Ben that he is actually enjoying himself and that painting the fence is an interesting and gratifying activity. Tom is so convincing that he actually increases Ben's desire to engage in whitewashing and, after some negotiation, Tom hands the brush over to Ben, and lies down in the shadow, savoring the rest of Ben's apple.

By suggesting he loves whitewashing, and thus misrepresenting his true preferences, Tom Sawyer manipulates Ben Rogers to make a decision that is favorable to Tom. And although few of us may be as cunning and convincing as Tom Sawyer, we often find ourselves in situations where we can influence others by manipulating information and misrepresenting our true preferences and priorities. Tobacco companies misrepresent the addictive properties of nicotine (Tenbrunsel, 1998). Car owners deliberately conceal technical problems when trying to sell their car (Schweitzer & Croson, 1999). When negotiating a divorce, a husband may misrepresent the importance of having child custody to induce his spouse to concede on alimentation costs (O'Connor & Carnevale, 1997).

Although lying and deception have been of interest to the social sciences for

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3 This chapter is adapted from Steinel and De Dreu (in press).
many decades, research has mainly focused on animal and human ability to distinguish cheaters from non-cheaters (e.g., Cosmides & Tooby, 1992; DePaulo, 1992). Far less research has been concerned with what Tom Sawyer was doing – the active misrepresentation of values, preferences and priorities. Extending interdependence theory (Kelley & Thibaut, 1978; Rusbult & Van Lange, 1996, 2003), and goal expectation theory (Pruitt & Kimmel, 1977), we study the influence of one's counterpart's cooperative or competitive motivation and one's own pro-social or selfish value orientation on the tendency to provide accurate or inaccurate information, answering such basic questions as "When and why are people likely to deceive their counterparts?" and "How do people fine-tune the provision of accurate or inaccurate information to influence their counterpart's decision making?"

Lying and Deception in Social Interaction

Misrepresentation, lying, and deception have all been the subject of considerable research in psychology. Social psychologists have focused on the individual's ability to detect lying and deception (e.g., DePaulo, Lanier, & Davis, 1983; DePaulo, Stone, & Lassiter, 1985; Ekman, O'Sullivan, & Frank, 1999; Riggio & Friedman, 1983; Vrij, 2001; Zuckerman, Koestner, & Alton, 1984; see also DePaulo et al., 2003). Even when people try hard to suppress and misrepresent their true feelings and thoughts, they usually are not very successful (e.g., DePaulo, 1992; Ekman & Friesen, 1982; Ekman, Friesen, & O'Sullivan, 1988; Vrij, Edward, & Bull, 2001b; Zuckerman, Lipets, Koivumaki, & Rosenthal, 1975). Lie detection has also received much attention in forensic and applied psychology. For instance, research has looked at the effectiveness of technical devices such as the polygraph to tell truth tellers from liars (e.g., Bashore & Rapp, 1993; Saxe, 1991, 1994).

Relatively few studies have addressed the conditions that foster or inhibit people's tendency to be honest and accurate, or dishonest and inaccurate. Some studies have examined the role of Machiavellianism (Exline, Thibaut, Hickey, & Gumpert, 1970; O'Hair, Cody, & McLaughlin, 1981), but have only provided rather mixed results. Most insights into the conditions predicting lying and deception come from research on conflict and negotiation.

In conflict and negotiation, individuals experience mixed-motive interdependence. They have cooperative incentives to work together with the other
party to increase joint gain, and competitive incentives to work against the other party to increase personal gain (Axelrod, 1980; Carnevale & Pruitt, 1992; Dawes, 1980; Komorita & Parks, 1995; Schelling, 1960). The cooperative incentive makes the situation particularly conducive to the exchange of honest and accurate information, because doing so successfully fosters high joint gain (Thompson, 1991). The competitive incentive makes the situation especially conducive to the use of misrepresentation and deception, because successfully lying can fosters one's immediate, personal self-interest (Triandis et al., 2001). Thus individuals in mixed motive interdependence find themselves in what has been called the "information dilemma" - should they provide accurate information to achieve high collective outcomes, or strategically misrepresent their preferences to secure good personal outcomes (Kelley & Thibaut, 1978; Murnighan, Babcock, Thompson, & Pillutla, 1999)?

Experiment 1

Individuals caught in an information dilemma engage in a variety of deceitful activities (e.g., Kelley, 1966; for a review, see Lewicki, 1983). Deception increases when parties know the opponent lacks information (Boles, Croson, & Murnighan, 2000), or when the stakes are higher (Tenbrunsel, 1998). Also, lying and deception are more likely when negotiators have experience with the task at hand (Murnighan et al., 1999), when they face a stranger rather than a friend (Schweitzer & Croson, 1999), and when they aim to maximize personal rather than joint gains (O'Connor & Carnevale, 1997). This research thus suggests that people deceive more when there is a greater need to serve one's own interests, or more opportunity to do so, or both.

Perception of Other's Competitiveness

People sometimes assume that their counterpart is competitive and "out to get them," on other occasions they believe that their counterpart has cooperative intentions and can be trusted (e.g., Kelley & Stahelski, 1970). Burnham, McCabe, and Smith (2000) found that a counterpart described as "partner" elicit more cooperation than others described as "opponent" (for reviews of similar findings, see De Dreu, Weingart & Kwon, 2000; Deutsch, 1973; Rubin & Brown, 1975). Other studies showed that people see others as cooperative rather than competitive when they have a
history of cooperative rather than competitive exchanges (e.g., Lindskold & Han, 1988), when the other belongs to a group stereotyped as moral and cooperative rather than opportunistic and greedy (De Dreu, Yzerbyt, & Leyens, 1995; Marlowe, Gergen, & Doob, 1966), when they expect to work together in the future (e.g., Ben-Yoav & Pruitt, 1984), or when those others are friends rather than strangers (Fry, Firestone, & Williams, 1983). Also, individuals differ in their propensity to trust others (Parks, Henager, & Scamahorn, 1996), and when individuals themselves are inclined to be cooperative, they tend to assume others are cooperative rather than competitive as well (e.g., Iedema & Poppe, 1995). In developing their goal expectation theory, Pruitt and Kimmel (1977) reviewed twenty years of research and concluded that perceiving the other as cooperative rather than competitive is a key factor in predicting cooperative choices in prisoner's dilemmas, social dilemmas and negotiation settings (see also Komorita & Parks, 1995; Pruitt, 1998).

Work on lying and deception has ignored the fact that individuals assume others to be competitive or cooperative, but the above research and theory suggest that this influences the tendency to be accurate or to deceive. First, facing a competitive rather than a cooperative other reduces the inhibition to engage in unethical behavior (Rubin, Pruitt, & Kim, 1994). Facing a competitive other may also make greed (i.e., the desire to get high personal outcomes) more salient, which in turn leads to more lying and deception which people try to use to their own advantage, perhaps even at the other's expense. Finally, facing a competitive other increases the fear of being exploited (Pruitt & Kimmel, 1977). Thus, we predict that facing a competitive rather than cooperative other reduces the tendency to be accurate and increases the provision of inaccurate information (Hypothesis 1).

Hypothesis 1 concerns the amount of deceit, and extends interdependence theory (Kelley & Thibaut, 1978; Rusbult & Van Lange, 1996, 2003) and goal expectation theory (Pruitt & Kimmel, 1977) to the domain of lying and deception. However, neither this hypothesis, nor the theories and research preceding it, specifies the direction of deceit. Therefore, there remains the question of how people misrepresent information when facing a competitive other. Non-cooperative tendencies may be reflected in withholding information, or in focused misrepresentation explicitly aimed at misleading the counterpart about the structure of the decision-making task. Thus, the specific direction of deceit in the case of a
competitive counterpart is less straightforward than it may appear at first sight.

When one's own interests are opposite to those of a competitive other, one serves one's own interests best by pretending that one's gains as well as one's losses would exceed the gains or losses of the opponent. To illustrate this strategic misrepresentation, imagine a situation in which a competitive counterpart has to choose between X and Y. To him or her, X is worth 0 points, and Y is worth 5 points. The other does not know that to you, X and Y are worth 5 and 0 points, respectively. If you are honest about your outcomes, your competitive counterpart will be tempted to choose Y because this maximizes his or her relative gain (i.e., 5 points for him or her, and zero points for you). To prevent this bad result, you could mislead the other and inform him or her that X gives you a negative outcome (e.g., -10 points) and that Y gives you outcomes greater than his or hers (e.g., +10 points). By doing so, you may tempt the competitive counterpart to choose X instead of Y, having induced him or her to believe that X maximizes relative gain (i.e., 0 points for him or her, and -10 points for you), whereas Y maximizes relative loss (i.e., 5 points for him or her, and 10 points for you). If your attempt at strategically misrepresenting of your outcomes is successful, your end result could be very good (recall that although the other thinks otherwise, X is worth 0 points to him or her and 5 points to you).

This example could be seen as a numerical shorthand for the episode we discussed earlier on – Tom Sawyer claiming that handing over the whitewash to Ben would be most disagreeable, as it would mean depriving oneself of a most pleasurable diversion, tempting thus Ben get the "treat" at a price – he has to parts with his apple before he can take over the whitewashing. These examples illustrate our prediction that when facing a competitive rather than a cooperative other, people engage in strategic misrepresentation, that is, they will misrepresent the situation in such a way that own gains and losses appear to exceed those of the opponent (Hypothesis 2).

**Overview of the Experiment**

In Experiment 1, participants played an Information Provision Game developed for this study. In this game, participants expect their counterpart to make a decision that yields outcomes to him or herself and to the participant. The game is
set up in such a way that the participant's and the decision maker's outcomes are negatively correlated, that is, there are opposed interests. However, participants are told that the decision maker has incomplete information and is only aware of the consequences of his or her decision to his or her own outcomes, and not of the consequences of his or her decision to the participant's outcomes (i.e., the decision maker does not know that the situation involves opposed interests). In contrast, the participant is given full information about his or her own outcomes and about the decision maker's outcomes, and thus knows that own and other's interests are opposed.

Prior to the decision-making, participants get the opportunity to inform the decision maker of the consequences of his or her decision for the participant's outcomes. Participants can accurately present the situation as involving opposed interests, they can withhold information, they can inaccurately present the situation as predicted in Hypothesis 2, or anything in between. Thus the Information Provision Game allows one to assess (a) the amount of accurate and inaccurate information participants give, and (b) the direction of deceit, that is, the way participants present the decision situation to their interdependent other.

The numerical example we gave when developing Hypothesis 2 involved a zero-sum situation – other's gain mirrors own loss and vice versa. Not all situations that involve opposing interests are zero-sum; when one party's gain exceeds the other party's loss, the situation is called variable-sum (Schelling, 1960). Participants in both zero-sum and variable-sum situations have full information. They know about their own and their counterpart's outcomes. In practice, however, people often have only incomplete information; they know their own outcomes but do not have a clue as to the other's outcomes (Pruitt, 1998). In these incomplete information situations, people are likely to make the so-called fixed-pie assumption – they assume the situation is zero-sum, and their behavior reflects this assumption (De Dreu, Koole, & Steinel, 2000; Schelling, 1960; Thompson & Hastie, 1990).

Some prior studies on deceit used zero-sum tasks (e.g., Boles et al., 2000), others used variable-sum tasks (e.g., O'Connor & Carnevale, 1997), and yet others used incomplete information tasks (e.g., Schweitzer & Croson, 1999). No previous work has examined deceit as a function of task structure. Furthermore, because we know little about the direction of deceit, and because the precise structure of the
situation may influence whether and how people misrepresent the situation to their uninformed counterpart, we thought it desirable to examine the amount and direction of deceit in across zero-sum, variable-sum, and incomplete information tasks. In one condition of Experiment 1 participants engaged in a zero-sum task, in a second condition they engaged in a variable-sum task, and in a third condition (the incomplete-information condition) they were presented with their own outcomes only (see the Method section for more detail). We had no a priori hypotheses about the influence of task structure. The variable task structure was included to examine the generality of findings in different versions of the newly developed Information Provision Game.

The decision maker was depicted as either cooperative or competitive (we also included a control condition in which no information about the decision maker was given). According to Hypothesis 1, facing a competitive rather than cooperative other reduces the amount of accurate information provided and increases the amount of inaccurate information given. According to Hypothesis 2, to competitive but not to cooperative others, individuals will misrepresent the situation in such a way that own outcomes will appear negative when the other gets zero, and better when the other's outcomes are positive.

Method

Participants and design. Two hundred and fourteen students at the University of Amsterdam (136 female and 78 male) were randomly assigned to the conditions of a 3 (other's motivation: cooperative, competitive, unknown) x 3 (task structure: variable-sum, zero-sum, incomplete information) between-participants factorial design. They received 20 Dutch guilders (approx. $8) for participation. Dependent variables were the information participants gave about their payoffs, perceptions of the other, and self-reported strategies.

Procedure and independent variables. Participants were seated in cubicles equipped with a computer, a pen and several blank sheets of paper. To manipulate other's cooperative or competitive goals (see below), participants were asked to complete a "collaboration skills test as part of a large-scale test-development project that is not related to the other tasks in this experiment." The test contained twenty items dealing with cooperation in daily life (e.g., "In the bus, I stand up and let older..."
people have my seat”; “I enjoy working with other people”; “Winning is everything”; 
"I like situations in which I can compete with others"). Participants indicated their 
agreement on a five-point scale (bounded by 1 = completely disagree and 5 = completely 
agree). Although there is no information about the validity of the scale, and thus it 
cannot be used to classify participants in terms of their own social motivation (see 
Experiment 3 and 4, however), previous research has shown that the scale has high 
face validity and can be convincingly used to generate false impressions about 
another person’s motives (De Dreu & Van Kleef, in press).

Upon completion of the "collaboration skills test," the experimenter collected 
the materials and participants started with a new task on the computer. On their 
computer screens, participants read the instructions of a decision game that involved 
two players who would interact via the computer network. Participants were told 
that they would never find out with whom they played, and roles (player 1 or player 
2) would be determined at random. In fact, each participant was placed in the role of 
player 1.

The purpose of the decision game was to determine an outcome concerning 
two issues, A and B. On both issues, one out of three levels, x, y, or z, had to be 
chosen. Player 2 (henceforth, decision maker) would determine for both the issues A 
and B which level (x, y, or z) would be chosen, and, by doing so, would determine 
both his or her own outcomes as well as the outcomes of player 1 (henceforth, 
information provider). Participants read in the instructions that the decision maker 
would receive information about his or her own payoffs, but would never receive 
objective information about the information provider's payoffs. Thus, the decision 
maker was presented as having incomplete information. The information provider 
would receive information about his or her payoffs and also about the decision 
maker's payoffs (except in one condition, see below).

The information provider would start the game by sending a message to the 
decision maker with information about the outcomes he or she would receive for 
each of the possible decision options the decision maker could choose from. The 
decision maker would then be asked to make a decision determining both his or her 
own outcomes and the information provider's outcomes. It was emphasized that 
decisions would results in a number of points, and that at the end of the experiment 
points would be converted into lottery tickets. The more points gained, the more
lottery tickets one would get and, hence, the greater one's chance of winning a cash prize of 50 guilders (approx. $20).

Participants received their payoff tables and detailed explanation. A quiz ensured that the instructions were understood. As can be seen in Table 3.1, which shows the tasks used in this experiment, payoffs for the participant were identical in all three tasks. They could earn 6, 3, or 0 points on issue A, and 2, 1, or 0 points on issue B, on the levels z, y, or x, respectively. The decision maker's payoffs differed, depending on experimental condition.

Table 3.1 Payoff Tables Used in Experiment 1 (Participants are Player 1)

<table>
<thead>
<tr>
<th>Zero-Sum Task</th>
<th>Outcome to Player 1</th>
<th>Outcome to Player 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Issue A</td>
<td>Issue B</td>
</tr>
<tr>
<td>Level x</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Level y</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Level z</td>
<td>6</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable-Sum Task</th>
<th>Outcome to Player 1</th>
<th>Outcome to Player 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Issue A</td>
<td>Issue B</td>
</tr>
<tr>
<td>Level x</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Level y</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Level z</td>
<td>6</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Incomplete Information Task</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Level x</td>
</tr>
<tr>
<td>Level y</td>
</tr>
<tr>
<td>Level z</td>
</tr>
</tbody>
</table>

*Note.* Participants (player 1) were told that the (fictitious) player 2 would not receive information about player 1's outcomes, but only about player 2's outcomes.

Participants in the incomplete-information condition did not get information about the decision maker's payoffs. Participants in the zero-sum task condition were shown the other's payoffs, which were the mirror image of their own. Finally,
participants in the variable-sum task condition were told that the other would obtain 2, 1, or 0 points on issue A, and 6, 3, or 0 points on issue B, on the levels x, y, or z, respectively. Thus in the variable-sum task, issue A is most important to player 1, and issue B to player 2. Different decisions thus produce different levels of joint outcome. For example, the decision (zA, xB) would yield 6 points for each player, while the decision (yA, yB) would yield only 4 points per player. The information that the participant was player 1, the payoff table of player 1, and, in the variable-sum and zero-sum condition, the payoff table of player 2, remained visible on the screen (see Appendix A).

We then manipulated the decision maker's motivation. Participants were told that we were interested in the effect of having information about the other player, and that they, but not their opponent, were randomly selected to receive some information about the other derived from the "collaboration skills" measure filled out earlier. They received the test allegedly filled out by the other, with circled numbers on the rating scales for each item being manipulated in such way that the other appeared either competitive or cooperative. For example, participants in the cooperative-other condition saw that the other had answered "4" on the item "In the bus, I stand up and let older people have my seat" (i.e., he or she agreed); participants in the competitive-other condition saw that on this item the other had answered "2" (i.e, he or she disagreed; see also De Dreu & Van Kleef, in press). In the unknown-other condition, participants received no information about the decision maker's test results.

It was repeated that the decision maker had no information about the payoffs of the information provider and would never get objective information. Participants were told that they could provide information about their own payoffs to the decision maker, that is, they could show the decision maker what their payoff table looks like. For this purpose they could fill out an empty payoff table that would afterwards be sent to the decision maker. Participants were told that they could give as much information as they wanted and were free to choose between giving accurate and inaccurate information. Participants were then shown an empty payoff table. On the same screen, there was a row with 25 boxes containing the numbers from -12 to +12, and a box containing a question mark. Participants were told that for each of the six cells of the payoff table they could select by mouse-click either a
number between -12 and +12, or click on the box with the question mark when they did not want to give any information about their points in that cell (see Appendix A). The choice would then appear in the appropriate cell of the payoff table (see Appendix B).

Having made their choices for all six cells, participants could change their choices as often as they wanted. Once they click the "send" button, however, their choices would become irreversible. The payoff table with the values participants pretend to have got (in cells xA, yA, zA, xB, yB, and zB) was then allegedly sent to the decision maker. The reader can consult Appendices A and B for the computer screen the participant saw during the game, along with two hypothetical response screens, one filled out by a participant providing full and accurate information, and one filled out by a participant providing full but inaccurate information as predicted in Hypothesis 2.

**Dependent measures.** The numbers participants claimed were the values of the cells xA, yA, zA, xB, yB, and zB in their own payoff table were used to create two related indices of information provision. We classified all information as accurate (i.e., identical with the actual value) or inaccurate (i.e., different from the actual value). By counting the cells that contained accurate and inaccurate information, we calculated an amount of accurate information and an amount of inaccurate information. Both indices are discrete with a range of 0 to 6, their sum equals the total amount of information given. As participants had to enter numbers or question marks into six cells of the payoff table, the number of cells in which they gave no information equals six minus the amount of accurate information minus the amount of inaccurate information.

Once participants had sent the information, they were asked whether or not they had applied the strategies (1) to "enter a high number into a cell to deter the other from choosing that cell," and (2) to "enter a low number into a cell to make the other choose that cell" (we did not specify which cells we were referring to) and (3) whether they had tried to mislead the other (all 0 = no, 1 = yes). As a manipulation check, participants rated their impression of the other on a five-point scale, bounded by 1 = cooperative and 5 = competitive. Participants were then told that the experiment was over, thanked for participation, paid and debriefed.
Results

Manipulation check. A 3 (task structure: variable-sum, zero-sum, incomplete information) x 3 (other's motivation: cooperative, competitive, unknown) analysis of variance (ANOVA) showed that a competitive other was seen as more competitive ($M = 4.18$, $SD = 0.96$) than an unknown ($M = 2.91$, $SD = 1.16$) and a cooperative other ($M = 2.01$, $SD = 1.01$), $F(2, 205) = 71.13$, $p < .001$. All conditions differed according to a Duncan test ($p < .05$).

Amount of accurate and inaccurate information. To test Hypothesis 1, we analyzed the amount of accurate and inaccurate information in a 3 (other's motivation) x 3 (task structure) x 2 (information: accurate or inaccurate) ANOVA with the last factor as a within-participants variable. A main effect for information showed that participants provided more inaccurate than accurate information ($M = 2.91$, $SD = 2.37$ vs. $M = 2.19$, $SD = 2.28$), $F(1, 205) = 9.97$, $p < .002$. An interaction between information and other's motivation, $F(1, 205) = 22.18$, $p < .001$, qualified this main effect. Table 3.2 shows the cell means and standard deviations.

Table 3.2 Amount of Accurate and Inaccurate Information as a Function of Other's Motivation; Experiment 1

<table>
<thead>
<tr>
<th>Other's Motivation</th>
<th>Accurate Information</th>
<th>Inaccurate Information</th>
<th>Total Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooperative ($n = 74$)</td>
<td>3.23&lt;sup&gt;a&lt;/sup&gt; (2.36)</td>
<td>2.08&lt;sup&gt;a&lt;/sup&gt; (2.44)</td>
<td>5.31&lt;sup&gt;a&lt;/sup&gt; (1.33)</td>
</tr>
<tr>
<td>Competitive ($n = 61$)</td>
<td>0.84&lt;sup&gt;c&lt;/sup&gt; (1.23)</td>
<td>4.26&lt;sup&gt;b&lt;/sup&gt; (1.89)</td>
<td>5.10&lt;sup&gt;a&lt;/sup&gt; (1.94)</td>
</tr>
<tr>
<td>Unknown ($n = 79$)</td>
<td>2.25&lt;sup&gt;b&lt;/sup&gt; (2.31)</td>
<td>2.63&lt;sup&gt;a&lt;/sup&gt; (2.39)</td>
<td>4.38&lt;sup&gt;a&lt;/sup&gt; (1.71)</td>
</tr>
</tbody>
</table>

Note. a, b, c Means within one row not sharing the same subscript differ at $p < .05$ according to a Duncan test. The numbers in parentheses are standard deviations.
Participants gave more accurate information when the other was cooperative rather than competitive, with the unknown other in between, and gave more inaccurate information when the other was competitive rather than cooperative. This supports Hypothesis 1. No other effects were found.

**Direction of deceit.** To examine the direction of deceit, the information provided in each cell was submitted to a 3 (task structure) x 3 (other's motivation) x 2 (issue: A vs. B) x 3 (level: x vs. y vs. z) ANOVA with the last two variables as within-participants factors. Question marks were treated as missing values, which led to the exclusion of 71 participants. A main effect of issue, $F(1, 134) = 4.00, p < .05$, showed that participants correctly told the decision maker that they got more points on issue A than on issue B ($M = 2.36, SD = 2.39$ vs. $M = 1.98, SD = 2.55$). An interaction between issue and other's motivation, $F(2, 134) = 4.60, p < .02$, shows that participants presented issue A as more valuable than issue B when they believed the other was cooperative. Trends suggest that they did so towards an unknown other, as well, whereas they presented issue A as less valuable than issue B to a competitive opponent (cell means and paired-sample $t$ tests are shown in Table 3.3).

**Table 3.3** Presented Value of Issues A and B, Broken down for Other’s Motivation; Experiment 1

<table>
<thead>
<tr>
<th>Other’s Motivation</th>
<th>Issue A</th>
<th>Issue B</th>
<th>paired-sample $t$ (df)</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooperative</td>
<td>2.35 (2.98)</td>
<td>1.55 (2.98)</td>
<td>3.29 (52)</td>
<td>&lt; .005</td>
</tr>
<tr>
<td>Competitive</td>
<td>2.19 (2.39)</td>
<td>2.67 (2.30)</td>
<td>-1.73 (39)</td>
<td>&lt; .10</td>
</tr>
<tr>
<td>Unknown</td>
<td>2.51 (1.62)</td>
<td>1.88 (2.16)</td>
<td>1.77 (49)</td>
<td>&lt; .10</td>
</tr>
</tbody>
</table>

Note. Numbers in parentheses in the first and second column are standard deviations.

The interaction between issue and level, $F(2, 133) = 3.91, p < .05$, shows that participants accurately stated that on level y and z, issue A was more valuable to them ($M_{yA} = 2.75, SD = 3.16; M_{zA} = 2.29, SD = 4.93$) than issue B ($M_{yB} = 2.11, SD = 3.22; t(142) = 2.78, p < .01; M_{zB} = 1.53, SD = 3.77, t(142) = 2.76, p < .01$), and that on level x there was no difference in value between the issues ($M_{xA} = 2.04, SD = 5.16$ vs. $M_{xB} =$
2.29, $SD = 4.86$). This interaction effect thus mainly reflects the specific numbers given in the payoff tables.

More importantly, an interaction between other’s motivation and level, $F(4, 268) = 11.45, p < .001$, indicated that, depending on other’s motivation, participants pretended they had different priorities within issues.

Figure 3.1 shows that participants were quite honest with a cooperative other and gave information which almost perfectly matches the actual values of 0, 2, and 4 points at level x, y, and z, respectively. With a competitive other, however, people misrepresent what truly are opposed interests as compatible interests. The information given to a competitive other (i.e., the pretended value) decreases from $M_x = 5.73$ through $M_y = 2.03$ to $M_z = -0.46$. The information given to an unknown other is in between, showing intermediate levels of misrepresenting preferences and priorities within issues.
A three-way interaction between other’s motivation, level, and issue, $F(4, 268) = 6.90, p < .01$, further qualified these findings. Participants with a cooperative other truthfully stated that they preferred level $z$ to level $y$ and level $x$. They also truthfully said that they would get more points in cell $zA$ than in cell $zB$ ($M_{zA} = 4.25$ vs. $M_{zB} = 2.17, t(52) = 5.03, p < .001$). Participants with a competitive other dishonestly pretended to prefer level $x$ to level $y$ and level $z$. Additionally, they misled their counterpart by stating that issue $A$ was of a higher value to them than issue $B$, and pretended to get equally high scores in cell $xA$ and in cell $xB$ ($M_{xA} = 5.83$ vs. $M_{xB} = 5.63, t(40) < 1, ns$).

Although the direction of deceit we observed is in line with Hypothesis 2, the above results do not tell us whether people indeed present outcomes as negative when the other gets zero (i.e., on level $z$; see Table 3.1), and as exceeding the other’s positive outcomes. We examined the number of participants who pretended to get negative outcomes in cells $zA$ and $zB$ as a function of other’s motivation. We excluded participants in the incomplete-information task condition because they had no information about other’s outcomes. Including them did not change the results. For issue $A$, the analysis showed a significant effect, $\chi^2(2, N = 144) = 24.90, p < .001$. Fewer people with a cooperative (2 out of 51; 4%) or an unknown counterpart (5 out of 54; 9%) than people with a competitive counterpart (13 out of 40; 33%) pretended that they received negative outcomes in cell $zA$. A similar pattern was found for issue $B$, $\chi^2(2, N = 144) = 6.91, p < .05$: Fewer people with a cooperative (4 out of 50; 8%) or an unknown counterpart (4 out of 54; 7%) than people with a competitive counterpart (9 out of 40; 23%) suggested they would receive negative outcomes in cell $zB$.

We then examined the number of participants suggesting their outcomes exceeded the highest outcomes of the other (i.e., in cells $xA$ and $xB$; see Table 3.1) as a function of other’s motivation. For issue $A$, the analysis showed a significant effect, $\chi^2(2, N = 144) = 17.54, p < .001$. Fewer people with a cooperative (4 out of 50; 8%) or an unknown counterpart (11 out of 54; 20%) than people with a competitive counterpart (18 out of 40; 45%) suggested their outcomes would exceed those of their counterpart in cell $xA$. We found a similar pattern for issue $B$, $\chi^2(2, N = 144) = 17.25, p < .001$: Fewer people with a cooperative (9 out of 50; 18%) and an unknown counterpart (14 out of 54; 26%) than people with a competitive counterpart (26 out of
40; 65%) suggested their outcomes would exceed those of the other in cell xB.

All in all, these results support Hypothesis 2: When dealing with a competitive rather than a cooperative or an unknown counterpart, people are more likely to pretend that one’s gains and losses would exceed the gains or losses of the opponent.

Self-reported strategies. Consistent with the above results, 77% of the participants with a competitive other stated that they have entered a high number to deter the other from choosing a certain cell. Only 20% of the participants with a cooperative other and 27% of those with an unknown other indicated that they have applied this strategy, \( \chi^2 (2, N = 214) = 53.26, p < .001 \). Likewise, 79% of the participants with a competitive other stated that they have entered a low number to make the other choose that cell, whereas only 28% of the participants with a cooperative other indicated having used that strategy. Participants with an unknown other (42%) were in between, \( \chi^2 (2, N = 214) = 35.67, p < .001 \). Finally, almost all participants with a competitive other (97%) as compared to less than half (47%) of those with a cooperative one indicated that they have tried to mislead the other. The unknown-other condition (61%) was in between, \( \chi^2 (2, N = 214) = 38.34, p < .001 \).

Discussion

As predicted in Hypothesis 1, participants were less accurate and more inaccurate with a competitive rather than a cooperative other. Consistent with Hypothesis 2, participants with a competitive other were also more likely to misrepresent their outcomes so that those appeared negative when the other got zero, and higher than the other’s outcome when the latter was positive. This misrepresentation may be strategically wise, as it may tempt the competitive other to make a decision that is good rather than bad for one’s own outcomes.

There were no significant effects for task structure. This suggests that participants in the incomplete-information condition assumed their outcomes were negatively correlated with those of their counterpart (i.e., the values they provided did not differ from those given in the zero-sum and the variable-sum conditions), which is consistent with negotiation studies showing that negotiators make a "fixed-pie assumption" (e.g., De Dreu, Koole, & Steinel, 2000; Gelfand & Christakopoulou, 1999; Pinkley, Griffith, & Northcraft, 1995; Thompson & Hastie, 1990). Although
some authors have speculated that the fixed-pie-assumption may be confined to negotiation settings (e.g., Pruitt, 1990), our results suggest that the fixed-pie assumption is also made in the type of situations studied here. For current purposes it is important that task structure had no effects on the amount of accurate or inaccurate information provided, or on the direction of deceit. Moreover, task structure did not interact with other's motivation. We conclude that task structure, alone or in combination with other's motivation, has no noticeable influence on deception and in the next experiments we therefore decided to focus on the zero-sum task.

**Experiment 2**

Although the results of Experiment 1 showed that people are especially likely to use deception when they face a competitive other, it remains unclear why. In general, non-cooperative behavior is predominantly motivated by either greed, fear of being exploited, or both (Coombs, 1973). In the Information Provision Game, both fear and greed play a role, because the information participants present to the decision maker may lead them to make choices that boost or harm their own outcome. Indeed, in Experiment 1, we observed more deception when the other was competitive rather than cooperative. This suggests that fear of being exploited is an important reason for misleading a competitive other. However, facing a competitive other in itself may elicit greed, and we need to examine empirically whether fear, greed, or the combination of both motivations can explain the tendency to mislead a competitive other.

Research into motives underlying punishment suggests some additional reasons for the decision to engage in lying and deception. Carlsmith, Darley, and Robinson (2002) distinguished between deterrence and just deserts as motives for punishing harm-doers. Deterrence refers to the desire to prevent or reduce future crimes, and seems closely linked to fear of being exploited. The notion of just deserts refers to the desire to pay back harm-doers for past crimes, and appears to be conceptually unrelated to both fear and greed. The just deserts motive seems to play a role in social decision-making. People who violate justice principles face sanctions, even by those whose outcomes are not affected by these violations (Fehr & Gächter, 2002; Folger & Skarlicki, 2001). People who have been deceived punish their
counterpart even when this is costly (Boles et al., 2000). In the context of social
dilemma research, Price, Cosmides, and Tooby (2002) reasoned that for collective
action to evolve, some mechanism must eliminate the advantage free riders have
over contributors. They propose punitive sentiment, "a desire that the target of the
sentiment is harmed" (p. 206), as an anti-free-rider device.

Altogether, three possible motivations – fear, greed, and punitive sentiment –
may explain the high levels of deception observed in the case of a competitive other.
The goal of Experiment 2 was to examine which (combination of) motivation(s)
explains the provision of accurate and inaccurate information to a competitive other.
Like in prior research on fear and greed (e.g., Bruins, Liebrand, & Wilke, 1989;
Rapoport & Eshed, 1989; Van Lange, Liebrand, & Kuhlman, 1990), the presence or
absence of fear and greed was manipulated by making the other's decision either
consequential or not for one's own outcomes. When the other's decision is
consequential for one's own outcomes, lying and deception may be motivated by a
desire to mislead the other into making decisions that benefit the falsifier the most
(i.e., greed), or a desire to mislead the other into making decisions that damage own
outcomes the least (i.e., fear). We used questionnaire items and mediation tests to
examine whether the effects are due to fear, greed, or both.

Similarly, the presence of punitive sentiment was manipulated by making the
decision either consequential or not for the opponent's outcomes. When the decision
has no consequences for the opponent's outcomes, lying and deception can hardly be
motivated by punitive sentiment. Put differently, if more lying and deception is
observed when the decision is consequential for the opponent's outcomes, then lying
and deception is likely to be due to punitive sentiment. Again we used questionnaire
items and mediation tests to examine whether punitive sentiment does indeed
explain possible effects.

Method

Participants and design. Seventy-seven students at the University of
Amsterdam (n = 38 female and n = 39 male) were randomly assigned to three
experimental conditions, in which the other's decision is either consequential to the
participant's outcomes only, to the opponent's outcomes only, or to both player's
outcomes (note that the last condition is a replication of the task used in Experiment
Dependent variables were the provision of accurate and inaccurate information, self-reported fear, greed, and punitive sentiment, and manipulation checks. Participants received 15 guilders (approx. $6) for participation.

**Procedure and independent variables.** The procedure was the same as in the competitive-other condition in Experiment 1, with a few changes to manipulate whether or not the decision is consequential to the outcomes of the participant and the opponent. Whether the other's decision was consequential to the participant's and/or the opponent's outcome was manipulated independently by making the participant's own outcome and the alleged opponent's outcome either relevant or irrelevant to winning an attractive prize. We announced a lottery in which three participants would win a voucher of 50 guilders (approx. $20), with the chances of winning being either dependent on or independent of the outcome of the decision game. Depending on the experimental condition, participants were either told that each point gained in the decision game was worth one lottery ticket to themselves and/or the decision maker, or that the participant and/or the decision maker would get a randomly determined number (between 0 and 8) of lottery tickets regardless of the outcome of the decision game. Thus, in some conditions the outcome of the decision game had consequences for the participant's and/or the decision maker's chances of winning additional cash, while in other conditions it had no consequences whatsoever. We further emphasized that only the information provider knew how lottery tickets could be obtained and that this information would not be shared with the decision maker. Consequently, the decision maker was believed to be unaware of the fact that his or her decision would affect his or her (and the participant's) chances of winning additional cash.

In the **consequential-to-participant condition**, the other's decision was consequential to the participant, but not to the opponent. Participants were told that they would receive one lottery ticket for each point they would gain in the decision game, whereas the opponent would receive a random number of tickets. In this condition, we assumed that both fear and greed would be relevant motives, while punitive sentiment would not.

In the **consequential-to-opponent condition**, the other's decision was consequential to the opponent, but not to the participant. Participants were told that they would get a randomly determined number of lottery tickets, whereas the
opponent would receive one lottery ticket for each point he or she would gain in the decision game. In this condition, we assumed that punitive sentiment would be a relevant motive, unlike fear and greed.

In the consequential-to-both condition, the other's decision was consequential to both players. Participants were told that they would receive one lottery ticket for each point gained in the decision game, and that the opponent would also receive one lottery ticket for each point gained in the decision game. In this condition, we assumed that fear, greed, and punitive sentiment would all be relevant motives.

**Dependent measures.** The measures for accurate information and for inaccurate information were the same as in Experiment 1. Honesty ("I tried to be honest"), fear ("I tried to avoid being exploited"), greed ("I aimed to enhance my own outcome"), and punitive sentiment ("I wanted to teach the other a lesson") were assessed on a five-point scale (bounded by 1 = not at all and 5 = very much). As a manipulation check, participants had to indicate how the lottery tickets were to be allocated to themselves (0 = randomly, 1 = according to their outcome) and to their opponent (0 = randomly, 1 = according to his or her outcome).

After that, participants were told that the experiment was over, were thanked for participation, paid and debriefed.

**Results**

**Treatment of the data and manipulation checks.** Nine participants, who answered one or both manipulation checks about the allocation of lottery tickets incorrectly were excluded from the sample. All analyses are based on the remaining 68 participants. As intended, participants rated the other as competitive. Ratings were above the scale mean of 3.0 (M = 4.40, SD = 0.74; t(67) = 15.66, p < .001) and were not influenced by the experimental condition, F(2, 65) < 1.

**Descriptive statistics.** Table 3.4 shows the means, standard deviations and intercorrelations of the dependent variables. The desire to be honest was positively correlated with giving accurate information, and negatively correlated with giving inaccurate information. Fear of exploitation was positively correlated with giving inaccurate information and negatively correlated with giving accurate information. Greed was negatively correlated with giving accurate information, and positively with giving inaccurate information. Punitive sentiment was negatively correlated
with giving accurate information, and positively, but not significantly, with giving inaccurate information. Finally, fear and greed were not correlated, but fear and punitive sentiment were moderately correlated.

**Table 3.4** Means, Standard Deviations, and Correlations of the Main Dependent Variables in Experiment 2

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Honesty</td>
<td>2.02</td>
<td>1.11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Fear of Exploitation</td>
<td>3.60</td>
<td>1.29</td>
<td>-.20*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Greed</td>
<td>3.96</td>
<td>1.30</td>
<td>-.22*</td>
<td>.19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Punitive Sentiment</td>
<td>2.81</td>
<td>1.38</td>
<td>-.01</td>
<td>.38**</td>
<td>.04</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Accurate Information</td>
<td>1.07</td>
<td>1.54</td>
<td>.37**</td>
<td>-.35**</td>
<td>-.47***</td>
<td>-.25*</td>
<td></td>
</tr>
<tr>
<td>6. Inaccurate Information</td>
<td>4.01</td>
<td>1.98</td>
<td>-.38**</td>
<td>.17</td>
<td>.45***</td>
<td>.18</td>
<td>-.74***</td>
</tr>
</tbody>
</table>

*Note.* *p < .10.* *p < .05.* **p < .01. ***p < .001 (two-tailed).

**Motives for lying and deception.** To examine whether our experimental manipulations influenced fear, greed, and punitive sentiment, we conducted three separate analyses of variance with condition as independent variable and motive as dependent variable. The effect of condition on fear was in the expected direction, $F(2, 65) = 3.06, p < .085$. When the decision was consequential for the participant's outcome (i.e., in the consequential-to-participant and the consequential-to-both condition), participants indicated that fear was a motive ($M = 3.81, SD = 1.13$; and $M = 3.84, SD = 1.17$, respectively), as they answered above the scale mean ($t(25) = 3.64, p < .001$, and $t(18) = 3.15, p < .01$, respectively). When the decision was not consequential for the participant's outcome (i.e., in the consequential-to-opponent condition), participants indicated less fear ($M = 3.17, SD = 1.50$) than in the other two conditions, $t(66) = 2.00, p < .05$.

A main effect of condition on greed, $F(2, 65) = 14.44, p < .001$, showed that when the decision was consequential for the participant's outcome (i.e., in the consequential-to-participant and the consequential-to-both condition), participants...
reported higher levels of greed \((M = 4.46, SD = 0.81)\) and \((M = 4.47, SD = 0.96)\) than when it was not consequential for the participant's outcome (i.e., in the consequential-to-opponent condition; \(M = 2.96, SD = 1.93\)). A Duncan test \((p < .05)\) showed that the former two differed from the latter condition, but not from each other.

There was no main effect of condition on punitive sentiment, \(F(2, 65) < 1, ns\) (overall \(M = 2.81, SD = 1.38\)). Together, these results support the conclusion that our experimental manipulations influenced fear and greed. The manipulations did not influence punitive sentiment. We shall return to this in the discussion section.

**Provision of accurate and inaccurate information.** The amount of accurate and inaccurate information was analyzed in a 3 (condition) x 2 (information: accurate vs. inaccurate) ANOVA with the last factor as a within-participants variable. A main effect of information, \(F(1, 65) = 67.93, p < .001\), indicated that participants gave more inaccurate \((M = 4.10, SD = 1.98)\) than accurate information \((M = 1.07, SD = 1.54)\). This makes sense because in all conditions the other was competitive, and the means are indeed similar to those in the competitive-other condition of Experiment 1.

Results further revealed an interaction of information with condition, \(F(2, 65) = 4.99, p < .01\). Table 3.5 shows that participants gave more accurate information and less inaccurate information when the decision was inconsequential rather than consequential for the participant's outcomes. Further, participants provided less accurate and more inaccurate information when the decision was consequential for both players' outcomes than when it was consequential only to the participant's outcomes. This is consistent with the idea that fear and greed motivate the provision of accurate and inaccurate information.

**Tests for mediation.** Experimental manipulations influenced fear (marginally significant) and greed, as well as the provision of accurate and inaccurate information. Fear and greed were also correlated with the provision of accurate and inaccurate information. Therefore, fear and greed qualify as a potential mediator between the manipulations and the provision of accurate and inaccurate information. However, mediation also requires that the effect of the manipulations on the provision of accurate and inaccurate information is reduced when the mediator is taken into account, and that the reduction in regression weight from simple to multiple regression is significant (Kenny, Kashy, & Bolger, 1998).
Table 3.5 Amount of Accurate and Inaccurate Information as a Function of Experimental Condition; Experiment 2

<table>
<thead>
<tr>
<th>Decision is Consequential to</th>
<th>Opponent (only) ($n = 23$)</th>
<th>Participant (only) ($n = 26$)</th>
<th>Both ($n = 19$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accurate Information</td>
<td>$1.70_a$ ($1.87$)</td>
<td>$1.08_b$ ($1.49$)</td>
<td>$0.32_c$ ($0.58$)</td>
</tr>
<tr>
<td>Inaccurate Information</td>
<td>$3.39_a$ ($2.13$)</td>
<td>$4.04_b$ ($2.03$)</td>
<td>$5.05$ ($1.31_c$)</td>
</tr>
</tbody>
</table>

Note. $a$, $b$ Means within one row not sharing the same subscript differ at $p < .05$ according to a Duncan test. The numbers in parentheses are standard deviations.

To verify whether the additional requirements hold up for fear and greed, we performed two regression analyses (one with accurate information, and one with inaccurate information as dependent variable) per motive, with experimental condition as the independent variable. A regression analysis with the provision of accurate information as dependent variable, experimental manipulations as independent variable, and fear as mediator revealed that the originally significant effect of experimental manipulations ($\beta = -.35, t = -3.06, p < .003$) dropped slightly ($\beta = -.29, t = -2.58, p < .012$). The predicted reduction in regression weight from simple to multiple regression was marginally significant, $Z = 1.69, p < .10$. A regression analysis with the provision of inaccurate information as dependent variable, experimental manipulations as independent variable, and fear as mediator revealed that the originally significant effect of experimental manipulations ($\beta = .33, t = 2.83, p < .006$) remained almost unaffected ($\beta = .31, t = 2.57, p < .013$). Indeed, the reduction in regression weight from simple to multiple regression was not significant, $Z < 1$. Thus, there is some evidence that fear partially mediates the effect of experimental manipulations on the provision of accurate information, but not the provision of inaccurate information.

A regression analysis with provision of accurate information as dependent variable, experimental manipulations as independent variable, and greed as mediator revealed that the originally significant effect of experimental
manipulations ($\beta = -.35, t = -3.06, p < .003$) dropped substantially ($\beta = -.17, t = -1.35, ns$). The reduction in regression weight from simple to multiple regression was significant, $Z = -2.55, p < .05$. A regression analysis with the provision of inaccurate information as dependent variable, experimental manipulations as independent variable, and greed as mediator revealed that the originally significant effect of experimental manipulations ($\beta = .33, t = -2.83, p < .006$) dropped substantially ($\beta = .15, t = -1.18, ns$). The reduction in regression weight from simple to multiple regression was significant, $Z = 2.27, p < .05$. These results show that greed mediates between the experimental manipulations and the provision of both accurate and inaccurate information.

**Direction of deceit.** The information provided in each of the six cells was submitted to a 3 (condition) x 2 (issue: A vs. B) x 3 (level: x vs. y vs. z) ANOVA, with the last two variables as within-participants factors. Question marks were regarded as missing data, which led to the exclusion of 14 participants. Results revealed a main effect of level, $F(2, 40) = 10.71, p < .001$, showing that participants pretended that to them level x was the most valuable ($M = 5.35, SD = 5.35$), that level y was intermediate ($M = 1.28, SD = 3.54$), and that level z was the least valuable ($M = -1.85, SD = 5.93$). There was no significant interaction with condition, $F(4, 82) = 1.36, ns$.

We also examined whether the number of participants who pretended to get negative outcomes when the other gets zero differed as a function of experimental condition. For issue A and issue B, condition had no effects, both $\chi^2 (2, N = 68) < 1.37, ps > .50$, and, consistent with the competitive-other condition of Experiment 1, 24 out of 68 participants (35%), and 25 out of 68 participants (37%) suggested they received negative outcomes in cell zA and zB, respectively. We then examined the number of participants suggesting their outcomes exceed those of the other on level x (see Table 3.1). Again, for issue A and issue B, condition had no effects, both $\chi^2 (2, N = 68) < 4.40, ps > .12$, and, consistent with the competitive-other condition of Experiment 1, 27 out of 68 participants (40%), and 40 out of 68 participants (59%) suggested their outcomes exceeded those of their counterpart in cell xA and xB, respectively.

These results support Hypothesis 2, because they show that with a competitive other people tend to misrepresent outcomes as if they receive negative outcomes when the other gets zero, and outcomes exceeding the others' outcomes when the latter are positive.
Discussion and Introduction to Experiment 3

Experiment 2 showed that giving accurate information is partially motivated by fear of being exploited, and by greed. Giving inaccurate information is motivated by greed only. Punitive sentiment, though negatively correlated with giving accurate information, did not mediate the effects of experimental conditions.

Measurement issues may account for the weak results regarding punitive sentiment. Indeed, single-item measures were used and although meaningful correlations between these measures, and with giving accurate and inaccurate information were found, it cannot be excluded that some measures were not very good. Alternatively, it may be that punitive sentiment is a motive that exists in some people more than in others, and is unlikely to be triggered temporarily by experimental manipulations like the ones we used in Experiment 2.

In fact, it can be argued that selfish individuals who are solely concerned with own outcomes tolerate others who are selfish more than do pro-social individuals who are concerned with fairness and collective welfare. Selfish individuals tend towards non-cooperative behavior, whereas those with a pro-social orientation tend to trust others and approach them in an open-minded, cooperative way (Pruitt & Kimmel, 1977; Van Lange, 1999). When the other is competitive, however, pro-social individuals tend to "over-assimilate" and respond even more competitively than selfish individuals (e.g., Kelley & Stahelski, 1970; Van Lange, 1992). Over-assimilation may be based on punitive sentiment and the moralistic desire the "teach the other a lesson," or on the belief that being overly competitive influences the other to change their behavior towards a more cooperation (Price et al., 2002).

In Experiment 2, punitive sentiment was negatively correlated with the provision of accurate information, and we reviewed arguments and evidence that pro-social individuals may be guided by punitive sentiment more than individuals with a selfish orientation. Drawing a parallel with the over-assimilation effect observed in social dilemmas, we hypothesize that compared to selfish individuals, pro-social will be more accurate towards a cooperative other, and more inaccurate towards a competitive other (Hypothesis 3).

Initial evidence for this hypothesis comes from a negotiation study by O'Connor and Carnevale (1997). They found more misrepresentation when both members of a dyad had a pro-social (i.e., maximize joint outcomes) rather than a
selfish goal (i.e., maximize personal outcomes). However, as dyad members in this study received the same goal instructions, their findings may reflect (1) a main effect of the other’s cooperative or competitive goal (our Hypothesis 1); (2) a main effect of the participant’s pro-social versus selfish orientation (O'Connor & Carnevale’s hypothesis); or (3) an interaction between the participant’s value orientation and the other’s cooperative versus competitive goal (our Hypothesis 3).

**Experiment 3**

*Method*

*Participants and design.* One hundred and fifty students (58 male and 92 female students) at the University of Amsterdam participated in the experiment and received 20 guilders (approx. $8). All participants were placed in the zero-sum task condition of Experiment 1. The design was a 2 (social value orientation: pro-social vs. selfish) x 3 (other’s motivation: cooperative, competitive, unknown) between-participants factorial, with the dependent variables information provided and self-reported strategies.

*Procedure and measurement of social value orientation.* The procedure was the same as in Experiment 1, except that prior to the experiment we measured social value orientation using the decomposed game method developed by Kuhlman and Marshello (1975). This method has good construct validity (Van Lange, 1999), internal consistency (e.g., Liebrand & Van Run, 1985) and test-retest reliability (Kuhlman, Camac, & Cunha, 1986).

Participants were presented with nine triple-dominance games. In each game, participants have to choose between option A, B, and C. In one game, for example, option A pays 550 points to oneself and 500 points to an unknown other, option B pays 500 points to oneself and 100 points to the other, and option C pays 500 points to both oneself and the other. Option A represents the individualistic choice because one receives more points (550) than in option B or C (both 500 points). Option B represents the competitive choice because it provides a greater advantage over the other's outcomes (500 - 100 = 400) than either option A (550 - 300 = 250) or option C (500 - 500 = 0). Finally, option C corresponds to a pro-social choice because it provides equality and a larger joint outcome (500 + 500 = 1000) than either option A (550 + 300 = 850) or option B (500 + 100 = 600).
To be classified into one of the three social value orientation groups, participants had to choose consistently on at least six out of nine trials. In the current study, 59 participants (39%) could be classified as pro-social, 66 participants (44%) as individualistic, and eight participants (5%) as competitive. This distribution is consistent with earlier research (e.g., De Dreu & Van Lange, 1995; Liebrand & Van Run, 1985). Following the example of earlier research (e.g., De Dreu & Van Lange, 1995; Liebrand, Jansen, Rijken, & Suhre, 1986; Liebrand & Van Run, 1985; Van Lange & Kuhlman, 1994), we combined competitive and individualistic participants into a broader category labeled "selfish." We excluded 17 participants (11%) from further analysis, because they did not make six consistent choices and were therefore unclassifiable. After the decomposed game measure and a 10-minute filler task, participants went on with the same procedure as in Experiment 1.

Dependent measures. The dependent measures – information provided, self-reported strategies, and impression of the other – were the same as in Experiment 1.

Results

Manipulation check. A 3 (other's motivation) x 2 (social value orientation) ANOVA showed that the manipulation of the counterpart's competitiveness was successful. Participants indeed rated a competitive counterpart as significantly more competitive (M = 4.00, SD = 1.11) than both a cooperative (M = 2.63, SD = 1.23) and an unknown counterpart (M = 3.00, SD = 0.96), F(2, 127) = 16.83, p < .001. A Duncan test (p < .05) revealed that the cooperative-other and the unknown-other condition differed from the competitive-other condition, but not from each other.

Provision of accurate and inaccurate information. The amount of accurate and inaccurate information was analyzed in a 3 (other's motivation) x 2 (social value orientation) x 2 (information: accurate vs. inaccurate) ANOVA, with the last factor within participants.

A within-participants main effect for information showed that participants gave more inaccurate information (M = 3.32, SD = 2.19) than accurate information (M = 1.99, SD = 2.07), F(1, 127) = 18.07, p < .001. This effect was qualified by an interaction between information and other's motivation, F(2, 127) = 16.63, p < .001. As predicted in Hypothesis 1, participants gave least accurate and most inaccurate information to a competitive other, more accurate information to an unknown other,
and most accurate and least inaccurate information to a cooperative other.

The predicted three-way interaction between information, other's motivation, and social value orientation, was significant, $F(2, 127) = 3.46, p < .05$. Compared to selfish participants, pro-social individuals gave more accurate information when the other was cooperative, and less accurate information when the other was competitive. Furthermore, compared to selfish individuals, pro-social individuals gave less inaccurate information when the counterpart was cooperative. Compared to selfish individuals, pro-social individuals also gave more, though not significantly more, inaccurate information when the other was competitive (see Table 3.6). All in all, these results support Hypothesis 3.

Table 3.6 Amount of Accurate and Inaccurate Information as a Function of Social Value Orientation and Other's Motivation; Experiment 3

<table>
<thead>
<tr>
<th>Social Value Orientation</th>
<th>Pro-Social</th>
<th></th>
<th>Selfish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other's Motivation</td>
<td>Cooper. $(n = 21)$</td>
<td>Compet. $(n = 16)$</td>
<td>Unknown $(n = 22)$</td>
</tr>
<tr>
<td>Inaccurate Information</td>
<td>3.90a (2.34)</td>
<td>0.50d (1.10)</td>
<td>1.82bc (2.02)</td>
</tr>
<tr>
<td>Accurate Information</td>
<td>1.67d (2.31)</td>
<td>4.63a (1.75)</td>
<td>3.59abc (2.15)</td>
</tr>
</tbody>
</table>

Note. a, b, c, d Means within one row not sharing the same subscript differ at $p < .05$ according to a Duncan test. The numbers in parentheses are standard deviations. "Cooper." = Cooperative. "Compet." = Competitive.

Direction of deceit. As in Experiment 1, we analyzed the information participants gave in the six cells in a 3 (other's motivation) x 2 (social value orientation) x 2 (issue A vs. issue B) x 3 (level x vs. y vs. z) ANOVA with the last two factors within participants. Question marks were treated as missing values, which led to the exclusion of 40 participants.
Results revealed, first of all, a within-participants main effect of issue, \( F(1, 87) = 49.24, p < .001 \), showing that participants correctly stated that they got more points on issue A (\( M = 1.87 \)) than on issue B (\( M = 0.68 \)). As in Experiment 1, an interaction between issue and level, \( F(2, 174) = 3.75, p < .005 \), showed that participants accurately stated that cell yA (\( M_{yA} = 1.89 \)) was worth more than cell yB (\( M_{yB} = 0.78, t(92) = 5.67, p < .001 \)) and that cell zA (\( M_{zA} = 2.42 \)) was worth more than cell zB (\( M_{zB} = 0.31, t(92) = 5.45, p < .001 \)), but that cell xA (\( M_{xA} = 1.31 \)) was worth just as little as cell xB (\( M_{xB} = 0.95, t(92) = 0.85, ns \)).

An interaction between level and other’s motivation, \( F(6, 174) = 17.59, p < .001 \), indicated that the information given to cooperative others increased from \( M = -2.01 \) at level x to \( M = 1.20 \) at level y to \( M = 2.87 \) at level z. The information given to competitive others decreased from \( M_x = 5.70 \) points to \( M_y = 1.32 \) to \( M_z = -2.14 \). This pattern is similar to the one found in Experiment 1 and provides additional support for Hypothesis 2 (see Figure 3.2).

![Figure 3.2](image-url)
An interaction between issue, level, and other's motivation further qualified this finding, $F(4, 174) = 9.82, p < .001$, and showed that, depending on the other's motivational goal, issue mattered on different levels. In the competitive-other condition, participants pretended to get more points in cell xA $(M = 7.04, SD = 4.58)$ than in cell xB $(M = 4.36, SD = 4.52; t(27) = 5.49, p < .001)$, while issue did not matter on level y $(M_{yA} = 1.57, SD = 4.61$ vs. $M_{yB} = 1.07, SD = 3.91; t(27) = 1.17, ns)$ and level z $(M_{zA} = -2.04, SD = 6.04$ vs. $M_{zB} = -2.25, SD = 4.53; t(27) < 1, ns)$. In the cooperative-other and the unknown-other condition, however, issue did not matter on level x, but it did matter on level y and level z. Participants told a cooperative other that they would get $M = -2.68 (SD = 5.69)$ points in cell xA and $M = -1.34 (SD = 4.69)$ in cell xB, which did not differ significantly, $t(37) = -1.66, ns$. On level y, they pretended to get more points in cell yA $(M = 1.97, SD = 2.38)$ than in cell yB $(M = 0.42, SD = 1.65; t(37) = 8.28, p < .001)$, and on level z, they pretended to get more points in cell zA $(M = 4.39, SD = 3.05)$ than in cell zB $(M = 1.18, SD = 1.98; t(37) = 9.28, p < .001)$. Similarly, participants told an unknown other that they would get $M = 1.00 (SD = 6.78)$ points in cell xA and $M = 0.63 (SD = 6.48)$ in cell xB, which did not differ significantly, $t(26) < 1, ns$. On level y, they pretended to get more points $(M = 2.11, SD = 1.55)$ in cell yA than in cell yB $(M = 1.00, SD = 1.82; t(26) = 2.68, p < .02)$, and on level z, they pretended to get more points $(M = 4.26, SD = 5.32)$ in cell zA than in cell zB $(M = 1.74, SD = 4.78; t(26) = 2.68, p < .02)$.

We also examined the number of participants who pretended to get negative outcomes when the other gets zero as a function of other's motivation and social value orientation. For issue A, a logistic regression with other's motivation, social value orientation, and their interaction as independent variables showed a significant effect of other's motivation, $B = 3.21, p < .01$. Fewer people with a cooperative (1 out of 48; 2%) or an unknown counterpart (3 out 42; 7%) than people with a competitive counterpart (15 out of 43; 35%) suggested they received negative outcomes. A similar pattern was found for issue B, $B = 2.28, p < .01$: Fewer people with a cooperative (3 out of 48; 6%) or an unknown counterpart (3 out of 42; 7%) than people with a competitive counterpart (17 out of 43; 40%) suggested they received negative outcomes.

We then examined the number of participants suggesting their outcomes exceeded those of the other in cells xA and xB (see Table 3.1) as a function of other's
motivation and social value orientation. For issue A, logistic regression showed a significant effect of other's motivation, $B = 3.94$, $p < .02$. Fewer people with a cooperative (1 out of 48; 2%) or an unknown counterpart (9 out of 42; 21%) than people with a competitive counterpart (21 out of 43; 49%) suggested their outcomes exceeded those of the other. A similar pattern was found for issue B, $B = 3.27$, $p < .001$: Fewer people with a cooperative (2 out of 48; 4%) or an unknown counterpart (11 out of 42; 26%) than people with a competitive counterpart (23 out of 43; 54%) suggested their outcomes exceeded those of the other. In all four logistic regression analyses, social value orientation and the interaction of social value orientation and other's motivation had no significant influence, all $ps > .50$

All in all, these results provide new support for Hypothesis 2: People with a competitive counterpart are more likely to misrepresent their outcomes as negative when the other gets zero, and as exceeding other's positive outcomes. Social value orientation did not qualify this general pattern.

Self-reported strategies. Consistent with the above results, 61% of the participants with a competitive other stated that they had entered a high number to deter the other from choosing that cell. This percentage was much lower in the case of a cooperative other (17%) or in the case of an unknown other (20%), $\chi^2(2, N = 133) = 18.64$, $p < .001$. Likewise, 84% of the participants with a competitive other reported having entered a low number to make the other choose that cell, while only 29% of participants with a cooperative other indicated that they used that strategy. Those with an unknown other (43%) were in between, $\chi^2(2, N = 133) = 28.70$, $p < .001$. Finally, almost all participants with a competitive other (98%), but only 58% of those with a cooperative other stated that they had tried to mislead the other. Participants with an unknown other (83%) were in between, $\chi^2(2, N = 133) = 21.83$, $p < .001$.

Discussion and Introduction of Experiment 4

Experiment 3 replicates and extends the scope of Experiment 1 and 2. As predicted in Hypothesis 1, we found that individuals with a cooperative other were the likeliest ones to give accurate information and the least likely ones to give inaccurate information, while the reverse holds for individuals with a competitive other. As predicted in Hypothesis 3, and indicative of an over-assimilation effect., this pattern was stronger for pro-social individuals than for selfish individuals.
Results for the direction of deceit were also consistent with those obtained in Experiment 1, and once again supported Hypothesis 2. Individuals with a cooperative other truthfully presented the situation as involving opposing interests, whereas individuals with a competitive other misrepresented their outcomes as negative when the other’s outcome was zero, and as exceeding the other’s outcomes when the latter were positive. Social value orientation did not influence this pattern, suggesting that pro-social and selfish individuals do not differ in their strategic misrepresentation.

Some limitations might be worthwhile to mention. First, the Information Provision Game is abstract and context-free. The reader may wonder whether behavior in this game informs us about strategic misrepresentation in daily settings. The first goal of Experiment 4 was to replicate the design of Experiment 3 in a different setting with a different scenario (i.e., the sale of one’s used car) and to submit Hypothesis 1 and 3 to a new test. Second, the use of psychology undergraduates in the first three experiments could be seen as a limitation. Because replicating results with a random sample drawn from the general population would further increase confidence in the generality of the findings, in Experiment 4 we sampled participants from the general population.

Experiment 4

Method

Experimenters, participants and design. Five M.A. students\(^4\) at the University of Amsterdam addressed people at random on a busy marketplace in Amsterdam, and in a commuter train connecting the inner city of Amsterdam with a suburban office and middleclass housing area. People were asked to fill out a questionnaire, in return for a chance of winning €20 in a lottery (approx. $18). About 40% of the people approached agreed to participate (\(N = 179\)). The most frequently mentioned reasons not to participate were not being able to read and write Dutch, or having no time. Fifty-seven percent (\(n = 101\)) of the participants were male, and the mean age was 25 (range between 19 and 59). Although 18% (\(n = 33\)) did not have the Dutch nationality, all participants were fluent in Dutch. Participants were assigned at

\(^4\) I thank Robbert Hardenberg, Jeroen Hess, Haita Hesse, Anna Küsters and Thea Wegner for their assistance in collecting the data of Experiment 4.
random to one of the three conditions (other's motivation: competitive, cooperative, or unknown). Social value orientation was included as a post-hoc blocking factor. Main dependent variables were perception of other's personality, and the likelihood of presenting accurate and inaccurate information.

Procedure and materials. Participants were asked to fill in questionnaire that was introduced as a study of people's decision making while purchasing goods and services. To provide the participants with some privacy and still be able to assist should something be unclear, the experimenters left them alone for a while but remained nearby. After about ten to fifteen minutes the experimenter collected the materials, explained the purpose of the study, and separately wrote down the name and address for the lottery.

The questionnaire began with an assessment of social value orientation using a paper-and-pencil version of the decomposed game method employed in Experiment 3. Twenty-eight percent of the participants \((n = 51)\) were pro-socially motivated, 17\% \((n = 30)\) were competitively motivated, 42\% \((n = 75)\) were individualistically motivated, and 13\% \((n = 23)\) could not be classified. The relatively low percentage of pro-socials (28\%) is not inconsistent with previous research (e.g., De Dreu & McCusker, 1997; Dehue, McClintock, & Liebrand, 1993), and does not suggest a preponderance of helpful people with a pro-social orientation. As in Experiment 3, we combined competitive and individualistic motivations into the overarching category "selfish."

Once participants had completed the value orientation measure, they were asked to imagine themselves selling their car. They read an advertisement they had allegedly placed in a local newspaper (i.e., information available to the buyer as well) and were also given some background information about the car, which was not mentioned in the advertisement (i.e., not available to the buyer) and created opportunity for deception and misrepresentation. To be more specific, they read that the odometer had been replaced, so that the actual mileage of the car was higher than displayed on the new odometer, that the gearshift was in working order most of the time, but would need to be replaced in the nearby future, that they did not care for the radio and intended to leave it in the car, and that they wanted to keep the car for a few more weeks before actually selling it.

Manipulation of other's motivation. Participants were then told to imagine
meeting a prospective buyer (all scenarios involved a male buyer) they recalled from a party some time ago, who himself, however, would not recognize them. In the cooperative-other condition, they read that they remembered the buyer as a pleasant and warm person who was interested in other people and seemed to care about other people's wellbeing. In the competitive-other condition, participants read that they remembered him as an unpleasant and cold person who was interested in himself only and did not appear to care about other people's wellbeing at all. In the unknown-other condition, participants read that though they remembered having met the person before, they could not remember any details about him.

Dependent variables. Participants read four brief scenarios. In each scenario, the buyer inquires about one of the features he was unaware of prior to the meeting. Participants rated on a five-point scale (bounded by 1 = very unlikely and 5 = very likely) the likelihood of providing accurate information and of reacting with an active lie. In the first scenario, the buyer mentions the low mileage. Participants had to indicate how likely they would inform the buyer about the replacement of the odometer and provide accurate information about the actual mileage (first accurate information), and how likely they would confirm the buyer's observation and stress the low mileage (first active lying). In the second scenario, the buyer inquires about the condition of the gearshift. Participants were asked how likely they would tell the buyer that it needs to be fixed soon (second accurate information), and how likely they would tell the buyer that the gearshift was fine (second active lying). In the third scenario, the buyer asks if he could buy the radio. Participants had to indicate how likely they would tell the buyer that the radio would stay in the car anyway (third accurate information), and how likely they would say that they wanted to keep the radio, and asked a higher price than what the buyer offered (third active lying). In the fourth scenario, the buyer asked if he could buy the car, but take it over one month later. Participants had to indicate how likely they would mention that they also preferred to keep the car for one more month (fourth accurate information), and how likely they would state that keeping the car causes difficulties and the buyer should pay a higher price in return (fourth active lying). As a manipulation check, respondents indicated on a five-point scale (bounded by 1 = cooperative and 5 = competitive) how they perceived the buyer. In several instruction checks crucial aspects of the scenarios were repeated and participants were asked to indicate whether the
statement was true or false. Finally, age, gender, and nationality were inquired, and, to control for negotiation experience, participants were asked how often they negotiate at work (1 = hardly ever to 5 = very often), and how often they had sold a car in the past ten years.

Results

Treatment of the data and manipulation check. Eight respondents had to be removed from the sample due to missing values, fourteen others were removed because they answered one or more instruction checks incorrectly, and another twenty-three respondents were removed because they could not be classified as pro-social or selfish. All analyses were based on the data of 136 participants. Demographic variables were neither associated with the provision of accurate or inaccurate information, nor did they interact with other's motivation or social value orientation.

A 3 (other's motivation) x 2 (social value orientation) ANOVA showed that the buyer was seen as more cooperative in the cooperative-other (M = 1.95, SD = 0.97) than in the competitive-other condition (M = 2.52, SD = 1.31), F(2, 127) = 4.15, p < .02. In the unknown-other condition, ratings were intermediate (M = 2.12, SD = 0.87) and did not differ from the other conditions according to a Duncan test, p < .05. A main effect of social value orientation, F(1, 127) = 13.22, p < .001, showed that pro-social participants rated the buyer as more cooperative (M = 2.67, SD = 1.20) than did selfish participants (M = 2.00, SD = 0.96).

Provision of accurate and inaccurate information. Scores of accurate information and of active lying were entered as dependent variables into a 3 x 2 x 4 x 2 ANOVA with other's motivation (cooperative vs. competitive vs. unknown) and own social value orientation (pro-social vs. selfish) as between-participants factors and scenario (1 vs. 2 vs. 3 vs. 4) and information (accurate information vs. active lying) as within-participants factors. A main effect of information revealed that, overall, participants thought they were more likely to provide accurate information than to engage in active lying (M = 3.16, SD = 1.02 vs. M = 2.37, SD = 0.87; F(1,130) = 27.40, p < .001). A main effect of scenario, F(3, 128) = 26.51, and an interaction of scenario with information, F(3, 128) = 9.22 (both ps < .001), indicated that in the third scenario (selling the radio instead of giving it to the seller for free) both active lying and
provision of accurate information were rated as more likely than in the other scenarios, and that in the fourth scenario (charging money in exchange for handing the car over some weeks later) lying was rated more likely than in the other three scenarios.

Of greater theoretical importance is the interaction of information with other's motivation, \( F(2, 130) = 18.89, p < .001 \), indicating that participants rated it more likely to give accurate information to a cooperative (\( M = 3.59, SD = 0.97 \)) than to a competitive other (\( M = 2.58, SD = 0.81 \)), with an unknown other in between (\( M = 3.24, SD = 0.98 \)). Participants also rated it more likely to actively deceive a competitive (\( M = 2.79, SD = 0.95 \)) than a cooperative buyer (\( M = 2.02, SD = 0.59 \)), with an unknown buyer falling in between (\( M = 2.36, SD = 0.87 \)). This pattern of results supports Hypothesis 1 and validates the results of Experiments 1 to 3. ANOVA also revealed an interaction between information, social value orientation, and other's motivation, \( F(2, 130) = 5.90, p < .01 \). As predicted in Hypothesis 3, the effect of other's motivation was stronger for pro-social participants than for selfish ones. Table 3.7 shows the means for providing accurate information and for active lying.

<table>
<thead>
<tr>
<th>Social Value Orientation</th>
<th>Pro-Social</th>
<th></th>
<th></th>
<th>Selfish</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cooper.</td>
<td>Compet.</td>
<td>Unknown</td>
<td>Cooper.</td>
</tr>
<tr>
<td>(n = 11)</td>
<td>(n = 11)</td>
<td>(n = 17)</td>
<td>(n = 31)</td>
<td>(n = 31)</td>
</tr>
<tr>
<td>Accurate Information</td>
<td>4.02d</td>
<td>2.11a</td>
<td>3.50cd</td>
<td>3.44cd</td>
</tr>
<tr>
<td></td>
<td>(0.89)</td>
<td>(0.90)</td>
<td>(0.85)</td>
<td>(0.97)</td>
</tr>
<tr>
<td>Inaccurate Information</td>
<td>2.02a</td>
<td>3.23c</td>
<td>1.88a</td>
<td>2.02a</td>
</tr>
<tr>
<td></td>
<td>(0.49)</td>
<td>(0.93)</td>
<td>(0.71)</td>
<td>(0.63)</td>
</tr>
</tbody>
</table>

Note. "Cooper." = Cooperative. "Compet." = Competitive. Scales run from 1 = very unlikely to 5 = very likely. a, b, c, d Means within one row not sharing the same subscript differ at \( p < .05 \) according to a Duncan test. The numbers in parentheses are standard deviations.
In the cooperative-other condition, pro-social individuals gave more accurate information than did selfish ones. In the competitive-other condition, however, pro-social individuals gave less accurate information than did selfish ones. This effect reflects the over-assimilation phenomenon predicted in Hypothesis 3, and validates the findings of Experiment 3. In the unknown-other condition, pro-socials tended to rate being accurate as more likely than selfish individuals, but this difference was not significant.

**General Discussion**

Lying and deception have been studied in a variety of disciplines, from a variety of perspectives. In social psychology, the bulk of research effort has been focused on discovering whether and how people's emotional display and nonverbal expressions change when telling lies in contrast to telling the truth (e.g., DePaulo, 1992; Ekman et al., 1988), and whether and to what extent people are able to distinguish liars from truth-tellers (e.g., Vrij, 2001).

In the current study, we approached the issue from a different angle and examined when, how, and why people in social decision-making engage in lying and deception. Based on interdependence theory (Kelley & Thibaut, 1978; Rusbult & Van Lange, 1996, 2003) and related research conducted in the behavioral decision tradition (e.g., Boles et al., 2000; Murnighan et al., 1999; Schweitzer & Croson, 1999), several hypotheses were developed and tested by means of a newly developed Information Provision Game.

In a nutshell, results showed that (1) individuals engage in more lying and deception when their counterpart is competitive rather than cooperative; (2) the provision of accurate and inaccurate information is correlated with fear of being exploited, greed, and punitive sentiment; (3) individuals deceive a competitive other because of greed, fear of exploitation, and perhaps also because of the activation of punitive sentiments; (4) compared to selfish individuals, those with a pro-social orientation are more honest towards a cooperative and more deceitful towards a competitive other; and (5) regardless of their social value orientation, individuals deceive a competitive other in such a way that their outcomes appear negative when the other gets zero, and as higher than the other's outcomes when the latter are positive.
Misleading in Social Decision-Making: A Motivational Approach

Theoretical Implications

Our work drew on two related theoretical accounts – interdependence theory (Kelley & Thibaut, 1978; Rusbult & Van Lange, 1996, 2003) and goal expectation theory (Pruitt & Kimmel, 1977). We further used insights from research in the behavioral decision tradition (Boles et al., 2000; Kagel & Roth, 1995; Murnighan et al., 1999; Schweitzer & Croson, 1999). Our study makes a contribution to each of these lines of inquiry, which will be discussed consecutively in the following.

Goal expectation theory derives from, and largely focuses on, cooperative and competitive choice behavior in the context of classic experimental games like the Prisoner’s Dilemma Game. It predicts that individuals become cooperative only when they (a) have cooperative goals, and (b) expect their counterpart to have cooperative goals too (Pruitt & Kimmel, 1977). Our results are highly consistent with this general prediction, and extend goal expectation theory to the domain of lying and deception. That is, from our experiments we can conclude that individuals provide truthful information only when (a) their counterpart is believed to be cooperative, and (b) they themselves have a pro-social value orientation.

Goal expectation theory is related to interdependence theory, developed by Kelley and Thibaut (1978; Rusbult & Van Lange, 1996). Like goal expectation theory, interdependence theory is primarily concerned with cooperative and non-cooperative behavior in Prisoner’s Dilemma type of situations (for recent extensions towards other interdependent situations such as negotiation and close relationships, see e.g., De Dreu & Van Lange, 1995; Van Lange, Agnew, Harinck, & Steemers, 1997). Within interdependence theory, social value orientations and expectations about other’s goals and intentions play a key role. As far as we know, however, no past research explicitly considered lying and deception as a function of social value orientation, or of expectations about other’s goals. The fact that our results were highly consistent with findings obtained in more traditional research focusing on cooperative and non-cooperative choice behavior indicates that key features of interdependence theory also apply to other types of behavior than cooperative and non-cooperative choices.

Consistent with both goal expectation theory and interdependence theory, we obtained strong evidence that deceiving a competitive other is motivated by a desire to do well oneself (greed), and some evidence that it is motivated by fear of being
exploited. It is interesting to note that greed appeared to motivate withholding accurate information as well as giving inaccurate information. Fear, in contrast, appeared to motivate only withholding accurate information, and was not related to giving inaccurate information. In other words, our results suggest that greed motivates a reduction in cooperative behavior, as well as an increase in competitive behavior, while fear only motivates a reduction in cooperative behavior. This may indicate that fear of being exploited activates avoidance tendencies and a desire to escape the situation, whereas greed activates approach tendencies. This seems intuitively appealing, but research is needed to examine this issue. Also, this result suggests that being honest and being deceptive are not the end points of one and the same continuum. Rather, they appear to be different types of behavior that can be motivated by the same, or by different goals.

Taking account of recent theory and research, we proposed a third possible motive underlying lying and deception, namely punitive sentiments (Price et al., 2002; see also Fehr & Gächter, 2002; Folger & Skarlicki, 2001). In Experiment 2, we found that lying and deception were positively correlated with punitive sentiment, but we were unsuccessful in inducing various levels of punitive sentiment. Drawing on social dilemma research, we argued that punitive sentiment may be stronger for some individuals than for others. Consistent with this claim, Experiment 3 and 4 revealed the so-called over-assimilation effect, that is, the tendency for pro-social individuals to be even more competitive (i.e., deceptive) towards competitive others than selfish individuals are (Kelley & Stahelski, 1970; Van Lange, 1992). The over-assimilation effect is usually explained by arguing that pro-social individuals try to "teach the competitive other a lesson," an explanation strongly compatible with the punitive sentiment motive studied in Experiment 2. Results could have been stronger – the test for mediation in Experiment 2 failed, and no measures of punitive sentiment were included in Experiment 3 and 4. Nevertheless, results suggest that lying and deception can be motivated by punitive sentiments, that is, the desire to punish the other for observed or expected wrongdoing. Future research could examine this issue in more detail.

Our experimental game, and some of our predictions, were inspired by research conducted in a behavioral decision approach to mixed-motive interdependence. Within this approach, decision makers are assumed to be bounded
in their rationality but otherwise motivated to maximize own profit (e.g., Boles et al., 2000; Kagel & Roth, 1995). Current findings contradict this assumption at least to some extent, in that they show that lying and deception were influenced by the participant’s social value orientation as well as by the participant’s beliefs about the other’s cooperative or competitive motivation. The influence of social value orientations indicates that individuals are motivated by other considerations than their immediate self-interest (for a discussion, see Rusbult & Van Lange, 1996). The influence of beliefs about other’s cooperative or competitive motivation is particularly troublesome for the behavioral decision approach, because self-interest dictates as much misrepresentation when the other is cooperative, as when the other is competitive. It cannot be understood in terms of immediate self-interest why individuals in a one-shot mixed-motive situation are open and honest when they believe their counterpart is cooperative (see also Paese & Gilin, 2000).

In contrast to previous research on lying and deception in social decision making, the current study allowed us not only to examine the extent to which individuals misrepresent their preferences and priorities, but also the direction in which they try to mislead their counterpart. Participants knew the situation was one in which own and other’s interests were opposed – the more the decision maker would get the less they themselves would obtain, and vice versa. As decision makers were only informed about their outcomes, and not about those of the participant, they did not know the exact structure of the situation. Participants could accurately or inaccurately describe the situation to the decision maker by providing accurate or inaccurate information about their own prospective outcomes, and thus influence the alleged consequences of the counterpart’s decision making for both the other’s and their own outcomes. Experiment 1 and 3, moreover, showed that when facing a cooperative other, participants provided information that (accurately) indicated they and their counterpart were in an opposed-interest situation. When facing a competitive other, participants gave information that (inaccurately) indicated they and their counterpart were in a situation in which their own outcomes were negative when the other gets zero, and higher than the other’s outcomes when the latter are positive (see also Figures 3.1 and 3.2).

Why would one accurately describe a situation as involving opposed interests when the other is believed to be cooperative, and inaccurately describe the situation
as involving compatible interests when the other is believed to be competitive? The answer to this question may be that facing a cooperative other triggers a cooperative mind-set that directs the participant towards honesty and cooperative behavior. This results in the provision of accurate information and, by default, a description of the situation as involving opposed interests. Given the other pursues a cooperative goal and seeks a fair distribution, this pattern of honest and accurate behavior may lead the other to favor the mid-point of the scale in the decision game (i.e., level y), thus providing both him- or herself and the participant with equally distributed outcomes that are neither great nor bad from a personal perspective. Facing a competitive other, in contrast, triggers a competitive mind-set that directs the participant towards dishonesty and competitive behavior. Greed, and to some extent fear, leads one to misrepresent one’s preferences and priorities in such a way that the situation appears to involve negative outcomes for the participant when the other gets zero (i.e., at level z), and participants outcomes exceeding the other’s outcomes when the latter are positive (i.e., at level x). Indeed, in all experiments about half of the participants in the competitive-other condition displayed this pattern. Given that the other pursues a competitive goal and seeks to maximize relative advantage, the most "rational" choice in the situation described by the participant would be to opt for level z. From his or her point of view, level z this supposedly gives him or her 0 and the participant some negative outcome; all other options in the situation described by the participant would provide him or her with less than the participant. Choosing any other level but z would hence move the decision maker away from rather than towards his or her competitive goal.

In other words, with a cooperative other people are honest and describe the situation accurately. With a competitive other people engage in rather sophisticated forms of strategic misrepresentation in which other’s competitive goal and his or her most likely course of action are taken into account when (misre)presenting information about the task structure.

The Information Provision Game

The contributions to the theory discussed above largely derive from a newly developed Information Provision Game. The game was modeled after the dictator game (Camerer & Thaler, 1995, Van Dijk & Vermunt, 2000) and resembles the social
interaction situation where one party has to decide whether to provide the other with information about one’s preferences and priorities. In the Information Provision Game, the participant’s own outcomes depend on a decision made by their counterpart. For each of the decision options the counterpart faces, the participant has full information about the payoffs to both oneself and the counterpart. The counterpart, in contrast, is believed to be informed only about his or her own payoffs, and to have no information about the consequences of his or her choice to the outcomes of the participant. Participants are given the possibility to provide information about the consequences the other’s decision would have for the participants’ outcomes. By providing accurate or inaccurate information, participants can make some options appear more or less attractive and thus try to steer the other’s decision.

The experimental task allowed us to look at the provision of information in close detail, learning about the amount of accurate and inaccurate information provided, and about the direction of deceit. This is, we believe, an important advance over earlier studies on lying and deception, which were only able to code whether lying or deception occurred or not.

Two questions require an answer. First, the reader may wonder whether findings obtained by means of this new game generalize to other settings. We believe they do, because the findings obtained in Experiment 3 were replicated in Experiment 4, which used a more conventional transaction decision setting used in previous research on lying and deception (see e.g., Schweitzer & Croson, 1999). Moreover, the results are highly consistent with those obtained in studies using face-to-face negotiation games (e.g., O'Connor & Carnevale, 1997; Murnighan et al., 1999). Second, the reader may feel the situation is set up in such a way that participants could easily guess the hypothesis and try to conform to the experimenter’s expectations. Although we cannot rule out the possibility that demand characteristics explain some of the results, it is unlikely that participants could accurately anticipate the over-assimilation effect found in Experiments 3 and 4. It seems equally unlikely that participants guessed our hypothesis about the direction of deceit, which was confirmed in Experiments 1 to 3. Thus, the more interesting and important results obtained by means of the Information Provision Game (a) are difficult to explain in terms of demand characteristics, and (b) generalize to other
settings.

This being said, it should be noted that some features of the Information Provision Game might have facilitated lying and deception. The setting ruled out negative long-term effects of lying (cf., Boles et al., 2000), participants did not have to fear that others may detect their lies by noticing a telltale incongruous facial expression (Drolet & Morris, 2000). Moreover, participants could have seen their lack of decision power as a justification for lying (Deutsch, 2000). Obviously, these features may affect the overall base rate of lying and deception but not the specific effects of experimental manipulations. The fact that we replicated the key findings of Experiments 1 and 3 with a more traditional methodology in Experiment 4 suggests that the effects of the experimental manipulations are valid and reliable. Moreover, the features just noted can be easily altered, for example to study lying and deception as a function of visual access, decision power, concern for long-term relationships, or concern with reputation.

**Summary and Conclusions**

Most research on the social psychology of lying and deception has been devoted to understanding the human ability to convincingly deceive others (e.g., Vrij et al., 2001b) or to detect lying and deception by others (see DePaulo et al., 2003). To ascertain when and why individuals provide accurate or inaccurate information about their preferences and priorities in social decision situations, we developed the Information Provision Game, which allows one to simultaneously study (a) the amount of information people provide, (b) the accuracy or inaccuracy of the information people provide, and (c) how people represent or misrepresent their preferences and priorities.

Results showed that individuals are less honest and engage in more deception when they believed that the other is competitive rather than cooperative, and that this effect is stronger for pro-social rather than selfish individuals. Second, greed and fear both predict being honest, and greed but not fear predicts being deceitful. Finally, individuals facing a competitive other engage in sophisticated forms of strategic misrepresentation that may direct competitive others to do exactly the opposite of what their goal prescribes them to do – to hurt him or herself, and to help the participant get great outcomes.
With the memories of the accounting scandals in Enron Corp., Royal Ahold, and several other multinational companies still fresh in our minds, many of us puzzle over the question why some people keep using lying and deception to get ahead in the world of business or politics. What makes them so greedy, and what makes them believe they could get away with it? Are such examples out of the ordinary, or do they reflect normal practice that usually remains behind closed doors? And, perhaps most importantly, what can be done to prevent these fraudulent practices from persisting in the future?

Whether we like it or not, lying is a fact of everyday life. People tell about one or two lies per day on average, and they do so for a variety of reasons, such as for material gain, for personal convenience, to escape punishment (DePaulo, Kashy, Kirkendol, Wyler, & Epstein, 1996), to spare other people's feelings (DePaulo & Bell, 1996; DePaulo & Kashy, 1998, Metts, 1989), or to appear more likeable (Feldman, Forrest, & Happ, 2002). Yet at the same time, people regularly put themselves in a vulnerable position and jeopardize their personal outcomes by being honest and

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5 This chapter is adapted from Steinel and De Dreu (2003).
accurate, that is by refraining from using lies and deception. Such may be the case especially when long-term considerations come into play, and concerns with one's reputation start to play a role.

Social psychological work on lying and deception has primarily focused on people's ability to lie convincingly, and on the detection of dishonest behavior (e.g., DePaulo et al., 1996, 2003). Economic and behavioral decision research (see Lewicki, 1983) has primarily addressed factors that stimulate lying and deception. Interestingly, however, people often provide honest and accurate information even when doing so makes them more susceptible to exploitation by others. For example, in bargaining and negotiation, people often provide accurate information about their preferences and priorities, even though doing so puts their opponent in a more advantageous position. In these situations, the question what leads people to behave honestly becomes especially pertinent, and it is these situations the current study focuses on. One particularly important factor we focus on is the individual's concern with his or her reputation.

We integrate economic models of reputation and social psychological work on audience effects to argue and show that mere observation by others, as well as possible negative consequences in the long run, lead people to refrain from lying and deception, even if this places them in a vulnerable position, that is, makes exploitation by their interaction partner(s) more likely.

**Lying and Deception in Mixed-Motive Interdependence**

In conflict and negotiation, individuals experience mixed-motive interdependence. They have a cooperative incentive to work together with the other party to increase joint gain, yet at the same time, they also have a competitive incentive to work against the other party to increase personal gain (Axelrod, 1980; Carnevale & Pruitt, 1992; Komorita & Parks, 1995; Schelling, 1960).

The cooperative incentive makes the situation particularly conducive to the exchange of honest and accurate information, which successfully fosters the achievement of high joint gain. The competitive incentive makes the situation particularly conducive to the use of misrepresentation and deception, because successfully lying can increase one's individual outcomes. Individuals in mixed-motive interdependence therefore find themselves in what has been called the
"information dilemma" – should they provide accurate information to achieve high collective outcomes, or rather strategically misrepresent their preferences to foster the achievement of good personal outcomes (Kelley & Thibaut, 1978; Murnighan, Babcock, Thompson, & Pillutla, 1999)?

Individuals facing an information dilemma engage in a variety of deceitful activities (e.g., Kelley, 1966; for a review, see Lewicki, 1983). People tend to deceive more when they know that their opponent lacks information (Boles, Croson, & Murnighan, 2000), or when the stakes increase (Tenbrunsel, 1998). Also, lying and deception are more likely when negotiators have experience with the task at hand (Murnighan et al., 1999), when they face a stranger rather than a friend (Schweitzer & Croson, 1999), and when they aim to maximize personal rather than joint outcomes (O'Connor & Carnevale, 1997). In line with goal expectation theory (Pruitt & Kimmel, 1977), Steinel and De Dreu (in press, see Chapter 3) argued and showed that individuals deceive a competitive counterpart more than a cooperative one. Facing a competitive other increases greed, and through lying and deception individuals try to get better outcomes. Also, facing a competitive other elicits fear of exploitation, and through lying and deception individuals try to protect their own outcomes.

Although various studies have demonstrated that facing a competitive other gives rise to tendencies to engage in lying and deception (O'Connor & Carnevale, 1997; Schweitzer & Croson, 1999; Steinel & De Dreu, in press), concern with reputation (henceforward referred to as reputation concern) tempers such tendencies and leads individuals to accept a short-term risk of exploitation. People may well realize that reputations precede social interaction in a broad range of situations, from decision-making in social dilemmas to business negotiation. A client's reputation is a main criterion for a credit card company's decision about giving a charge-off (Hammond & McGuire, 1994), and a licensee's reputation for trustworthiness is a crucial consideration for restaurants negotiating trademark licenses (Heicklen, 1998).

Tinsley, O'Connor and Sullivan (2002) showed that negotiation dyads involving bargainers notorious for their competitiveness got lower joint outcomes, which illustrates that "tough guys finish last" (p. 621). It has been argued and demonstrated that in repeated social dilemmas purely competitive individuals get involved in fewer transactions, and tend to end up with lower personal outcomes
When Does Reputation Matter

Reputation concern comes into play when an audience is observing and evaluating a target person's behavior. In the literature on effects of reputation cited above, it is implicitly or explicitly assumed that a negative reputation has long-term consequences for the individual involved. This assumption is most clearly articulated in economic models of behavior which state that utility maximization is a useful approximation of behavior (Kagel & Roth, 1995). Reputation concern matters when reputation can lead to exclusion from the group, which decreases the own utility. Initial evidence for this proposition derives from work by Kerr (1999), who found higher levels of cooperation in resource dilemmas when the group had a chance to exclude non-cooperative members. Cooperation was higher under threat of exclusion, except when the excluded group member was economically better off through exclusion. Thus, in accordance with economic models of human behavior, we expect greater concern with reputation, and less lying and deception, when the material outcomes of actual or future transactions are at risk, than when choice behavior is private and anonymous.

Social psychological theory does not require the material outcomes of actual or future transactions to be at risk for reputation concern to become a barrier against lying and deception. Economic considerations alone can hardly explain why people donate money to charity or why they sometimes have empathy with and behave cooperatively even towards people who have made a defective choice in advance (Batson & Ahmad, 2001; Batson & Moran, 1999). The work of Batson and colleagues illustrates that even in rather competitive situations, there are incentives other than economic ones to make people choose a cooperative rather than competitive course of action. Likewise, research on the bystander effect has shown that bystanders influence behavior, even if no interaction takes place and no future consequences seem likely (e.g., Chekroun & Brauer, 2002; Darley & Latane, 1968; Tice & Baumeister, 1985). People are driven by a desire to please those who observe their
behavior (Baumeister, 1982), and even more so when they believe that others can make personality trait inferences from a sample of their behavior (Gilovich, Savitsky, & Medvec, 1998; Vorauer & Ross, 1999). Thus, in contrast to economic models, social psychological work suggests greater concern with reputation, and less self-serving lying and deception when observing others are present rather than when choices are made in private.

The predictions derived from the economic models of reputation and the social psychological work on audience effects were tested in two experiments. In both experiments individuals faced a rather competitive other. By misleading the competitive other, participants could increase their personal outcomes, or prevent the other from taking advantage of them. Both experiments contrasted three conditions: a condition in which decisions to give accurate or misleading information were made anonymously and in private (private-choice condition) a condition in which other participants were said to observe the choices the participants made (observation-only condition), and a condition in which other participants were said to observe the choices made in order to be able to subsequently decide whether the participant should be allowed to enter the next round of a potentially profitable game (economic-consequences condition).

If reputation concern plays a role only, or especially, when consequences for future pecuniary gain are at stake, then people should engage in less lying and deception in the economic-consequences condition than in the other two conditions. If reputation concern plays a role already when other people observe one's behavior without this having any consequences for one's present or future personal outcomes, we should find evidence that the observation-only condition produces less lying and deception than the private-choice condition. We explored whether the observation-only condition produces less, or similar levels of lying and deception as the economic-consequences condition.

Experiment 1

Method

Participants and experimental design. Fifty-three first-year psychology students at the University of Amsterdam (n = 20 male and n = 33 female) completed a questionnaire as part of a course requirement. The design had one three-level
between-participants factor (condition: private choice vs. observation only vs. economic consequences), and the main dependent variables were concern with reputation, and accuracy of presentation of private information to a competitive other Participants were randomly allocated to experimental conditions.

**Material and manipulation of the independent variable.** Participants read a scenario that was constructed so that lying to an interdependent other would increase short-term gain. Specifically, participants read that they were playing a game together with a number of people they did not know. The game had several rounds and in each round in which they participated they would stand a chance of winning some money. In each subsequent round, they and another participant would receive a lottery ticket together. However, just one of the two was ever going to see the ticket. Each participant had to imagine that he or she were the one who would get hold of the ticket. Subsequently, they would get to know which prize the ticket had won and the corresponding amount would be credited to their account. The other player would not know if the ticket had won any prize and would have no chance whatsoever to find out about it unless the co-player (i.e., the 'informed' participant) told him or her.

Reputation concern was manipulated by telling participants what their audience was going to do. Participants in the *private-choice condition* received no further information about the game. In the *observation-only condition*, participants were told that some participants would not engage in the lottery game, but would rather take the role of observers who would carefully observe the interaction of the other players. In the *economic-consequences condition*, participants received the same information as in the condition above, and were further told that the observers would vote which player was to be excluded from participation in all further rounds.

After that, participants in all conditions were asked to picture themselves playing a first round of the game and were told that they have acquired a ticket. They read that their ticket had won them 100 Dutch guilders (approx. $40). The other player would ask whether the ticket had won, and, in case it had, how much. Participants read in the instructions that the other player would be free to ask any share of the prize and that they had to give that amount to him or her. Participants further read that they could tell the other player whatever they liked. He or she
CHAPTER FOUR: Concern with Reputation as a Barrier Against Lying

would never find out how much the ticket had won. Then they were asked what they would tell the other.

**Dependent variables.** The main dependent variable was the information participants gave about the prize that their ticket had won them. Participants were asked to fill the gap in the sentence "I would say the ticket has won [...] guilders" with a number between 0 and 100. All participants filled in a number between 0 and 100. Writing "0" down would mean that the lottery ticket had won nothing. Writing "100" down would mean giving accurate information. In our scenario, 0 is the "biggest" possible lie, higher numbers represent lies of a smaller magnitude, and one hundred is an honest, accurate answer. Even though one could argue that any number but 100 is a lie, we treated information as a continuous variable, with a possible range from 0 (maximum lie) to 100 (accurate information).

After participants had written down a number, they were asked several **manipulation check** questions to find out if they had understood the instructions and remembered the manipulation. Participants had to answer on five-point scales. Participants were asked (1) if anyone at all except for themselves knows how much the ticket had actually won them, (2) if somebody had been observing their behavior, and (3) if it could have happened that they got cast out, thus losing their right to participate in the following rounds (1 meaning **certainly not**, 5 meaning **definitely**). As a measure of **reputation concern**, participants were asked to judge their expected reputation in the eyes of the others after this round (1 meaning **very bad**, 5 meaning **very good**). Additionally, three questions assessed how concerned participants were about their reputation, namely to what extent (1) their reputation had been at stake in their own eyes, (2) it would concern them that they might ruin their reputation in the eyes of the others, and (3) it would matter to them what their standing would be in the other players' estimation (1 meaning **not at all**, 5 meaning **very much**). The answers were intercorrelated (alpha = .77), and we computed a mean score of **relevance of own reputation**.

**Results**

**Manipulation checks.** One-way analyses of variance showed that participants' answers to the question whether anyone would know how much the lottery ticket had actually won were influenced by condition, $F(2, 50) = 7.46, p < .001$. Participants
in the private-choice condition gave lower ratings \((M = 2.42, SD = 1.74)\) than participants in the observation-only and the economic-consequences condition \((M = 3.94, SD = 1.60; \text{and} \ M = 4.29, SD = 1.26, \text{respectively})\). A Duncan test \((p < .05)\) showed that the latter two conditions differed from the first, but not from each other. The same pattern of results was found for the question if someone had been observing the game, \(F(2, 50) = 8.10, p < .001\): participants in the private-choice condition \((M = 3.11, SD = 1.63)\) gave lower ratings \((p < .05)\) than participants in the observation-only and the economic-consequences condition \((M = 4.41, SD = 1.06; \text{and} \ M = 4.65, SD = 0.86, \text{respectively})\). The latter two conditions did not differ significantly. Condition also influenced participants’ beliefs about whether they could be thrown out of the game, \(F(2, 50) = 32.42, p < .001\). Participants in the economic-consequences condition gave higher ratings \((M = 4.06, SD = 1.48)\) than participants in the other two conditions \((M = 1.37, SD = 0.96; \text{and} \ M = 1.41, SD = 0.87, \text{respectively})\). According to a Duncan test \((p < .05)\), the economic-consequences condition differed from the other two conditions, which did not differ from each other. This pattern of results shows that participants correctly understood the manipulations.

**Descriptive statistics.** Table 4.1 shows the means, standard deviations, and intercorrelations of the dependent variables. On average, participants claimed that their lottery ticket had won them about 74 guilders, while, in fact, the prize was 100 guilders. The information they provided about the prize was strongly correlated with the reputation they expected to have after the game. This provides some initial evidence that reputation concern is inversely related to lying and deception.

<table>
<thead>
<tr>
<th></th>
<th>(M)</th>
<th>(SD)</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Information Provided</td>
<td>73.57</td>
<td>29.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Reputation Concern</td>
<td>3.62</td>
<td>1.20</td>
<td>.48***</td>
<td></td>
</tr>
<tr>
<td>3. Relevance of Reputation</td>
<td>2.39</td>
<td>1.12</td>
<td>.20</td>
<td>.07</td>
</tr>
</tbody>
</table>

*Note.* ***\(p < .001\) (two-tailed).*
CHAPTER FOUR: Concern with Reputation as a Barrier Against Lying

Deception. Table 4.2 shows the means and standard deviations of the main dependent variables in the three experimental conditions. The information provided by participants in the private-choice condition deviated most from the accurate score of 100 guilders, as they claimed that their lottery ticket had won 56.31 guilders on average. A one-way ANOVA with condition as between-participant factor revealed that this differed significantly from what participants in both other conditions claimed (80.24, and 86.18 guilders, respectively; F(2, 50) = 6.54, p < .01).

This pattern supports the social psychological approach to lying and deception. Interestingly, the observation-only and the economic-consequences conditions did not differ, suggesting that mere observation is a sufficient condition to inhibit lying and deception. This provides some initial evidence that the economic model of reputation rests on a number of superfluous assumptions and should be rejected.

Table 4.2  Main Dependent Variables as a Function of Condition in Experiment 1

<table>
<thead>
<tr>
<th></th>
<th>Private Choice (n = 19)</th>
<th>Observation Only (n = 17)</th>
<th>Economic Consequences (n = 17)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information Provided</td>
<td>56.32a</td>
<td>80.24b</td>
<td>86.18b</td>
</tr>
<tr>
<td></td>
<td>(31.53)</td>
<td>(25.10)</td>
<td>(20.73)</td>
</tr>
<tr>
<td>Reputation Concern</td>
<td>3.32a</td>
<td>3.47ab</td>
<td>4.12b</td>
</tr>
<tr>
<td></td>
<td>(1.11)</td>
<td>(1.28)</td>
<td>(1.11)</td>
</tr>
</tbody>
</table>

Note.  a, b Cell means that do not share the same subscript differ at p < .05 according to a Duncan test. The numbers in parentheses are standard deviations.

Reputation Concern. Table 4.2 shows that severer consequences of reputation lead to more reputation concern, F(2, 50) = 2.33, p = .10. Participants in the private-choice condition reported the least reputation concern, participants in the observation-only condition reported slightly, but not significantly, more reputation concern, t(34) = -.40, ns. Participants in the economic-consequences condition reported the most reputation concern that differed significantly from participants in the private-choice condition.
Misleading in Social Decision-Making: A Motivational Approach

Mediation analysis. Our theory suggests that reputation concern affects the provision of accurate information. Indeed, experimental condition influenced the provision of information as well as reputation concern. Moreover, reputation concern was positively correlated with the accuracy of the information provided. To test whether reputation concern does indeed mediate the effects of condition on the provision of accurate information, we ran three regression analyses performed along the lines suggested by Baron and Kenny (1986) and Kenny, Kashy, and Bolger (1998). This showed that experimental condition predicted reputation concern ($\beta = .29, p < .05$), as well as the accuracy of the information provided ($\beta = .40, p < .01$). Further, reputation concern significantly predicted the accuracy of the information provided ($\beta = .44, p < .01$). The reduction in variance explained when going from simple to multiple regression approached significance ($\beta = 0.40$ vs. $0.28, Z = 1.79, p = .07$). Although results could have been stronger, we conclude that reputation concern partially mediated the effect of condition on the information provided.

Discussion and Introduction to Experiment 2

When individuals believed that they had been able to make their choices in private, they were more likely to provide misleading information than when they believed others could observe them. This corroborates the social psychological account of reputation concern – the mere presence of others influences behavior towards an implicit norm, in this case the norm of being honest and accurate. These findings are particularly interesting because the mere presence of others appears to affect behavior even when there is a risk of exploitation by the competitive other.

No differences between the economic-consequences and the observation-only condition were observed, suggesting that mere observation is a sufficient condition and that the additional assumptions made in economic work are superfluous. However, we should not forget that Experiment 1 employed a scenario in which individuals had to imagine themselves to be involved, and on the basis of this imaginary situation they were asked to provide estimates of their likeliest behavior. Hence we could not possibly reject the economic model before making an independent replication in a behavioral decision-making setting.

In Experiment 2, thus, we used the Information Provision Game developed by Steinel and De Dreu (in press) to test our hypotheses again. In the Information
Provision Game, participants expect an interdependent other to make a decision that yields certain outcomes to him- or herself and to the participant. The game is set up in such a way that the participant's and the decision maker's outcomes are negatively correlated – opposed interests are brought into play. However, participants are told that the decision maker has incomplete information and is only aware of the consequences of his or her decision for his or her own outcomes, and not of the consequences of his or her decision for the participant's outcomes (i.e., the decision maker does not know that the situation involves opposed interests). In contrast, the participant is given full information about his or her own outcomes, and about the decision maker's outcomes, and thus knows that own and other's interests are opposed. Prior to the decision-making, participants are given the opportunity to inform the decision maker about the consequences of the latter's decision for the participant's outcomes.

Prior research (Steinel & De Dreu, in press) has shown that participants who expect to interact with a competitive opponent are particularly motivated to engage in lying and deception. A strategic way of misleading a competitive opponent is to suggest that both one's potential gains and one's potential losses would exceed those of the counterpart. Pretending that a zero-outcome to the opponent means a negative outcome to oneself, and a high payoff to the counterpart means an even higher payoff to oneself could make the lowest individual outcome attractive to the competitive other, as it would still seem to involve a relative gain.

Participants can withhold information and do nothing, they can present the situation (accurately) as involving opposed interests, (inaccurately) as involving compatible interests, or anything in between. Hence the Information Provision Game allows one to assess (a) the amount of accurate and inaccurate information participants provide, and (b) the direction of deceit – the way participants present the decision situation to their interdependent other.

**Experiment 2**

*Method*

*Participants and experimental design.* Eighty-six students at the University of Amsterdam ($n = 33$ male and $n = 53$ female students) participated and received 15 guilders (approx. $6). Participants were randomly assigned to three experimental
conditions (i.e., private choice, observation only, economic consequences). Main dependent variables were the amount of information about preferences and priorities provided to the other and the accuracy of this information. Additional measures involved the motivation for providing more or less accurate information.

Procedure and manipulation of the independent variables. The procedures and tasks were similar to the Information Provision Game, employed by Steinel and De Dreu (in press). Upon arrival in the laboratory, participants were seated in cubicles equipped with a computer, a pen and several blank sheets of paper. First of all, participants were asked to complete a bogus personality test which was used to create a certain (false) impression of their opponent (see below). The test contained twenty items dealing with cooperation in daily life (e.g., "In the bus, I stand up and let older people have my seat"); "I enjoy working with other people"; "Winning is everything"). Participants indicated their agreement on a five-point scale (bounded by \(1 = \text{completely disagree}\) and \(5 = \text{completely agree}\)). Previous research has shown that this test has high face validity and can be convincingly used to generate false impressions of another person’s motives (De Dreu & Van Kleef, in press). Upon completion of the test, the experimenter collected the materials and participants started with a new task on the computer.

On their computer screens, participants read the instructions of a decision game. They were told that eight participants would take part in the experimental session. To keep the interaction anonymous, the players would be addressed by the identification codes A1, A2, B1, B2, C1, C2, D1, and D2 during the experiment. Allegedly, identification codes were to determine the role of each player and the linkage of interacting dyads, namely two players with the same letter would play the decision game together.

The purpose of the decision game was to determine an outcome concerning two issues, A and B. On both issues, one out of three levels, x, y, or z, had to be chosen. One player (the one with a 2 in the identification code, henceforth referred to as decision maker) would determine for both the issues A and B which level (x, y, or z) would be chosen, and, as such, would determine both his or her own outcomes as well as the outcomes of the other player (henceforth referred to as information provider). Participants also read in the instructions that the decision maker would receive information about his or her own payoffs, but would never receive objective
information about the information provider's payoffs. Thus, the decision maker would only be given incomplete information. The information provider would receive information about both his or her own and the decision maker's payoffs.

The information provider would start the game by sending a message to the decision maker with information about the outcomes he or she would receive for each of the possible decision options the decision maker could choose from. The decision maker would then be asked to make a decision determining both his or her own outcomes and the information provider's outcomes. It was emphasized that decisions would result in a number of points, and that the decision game would be played over several rounds. Participants would have a chance to earn points in each round. At the end of the experiment, points would be converted into lottery tickets. The more points gained, the more lottery tickets one would get, and hence the greater one's chance of winning a cash prize of 50 guilders (approx. $20).

Participants were further told that, in each round of the game, the identification codes would be randomly assigned among the participants. In the private-choice condition, participants received no further information on the different roles in the game. In the observation-only condition, participants were told that those participants who were given the identification codes D1 and D2 would not engage in the decision game, but would act as observers who would carefully watch the interaction of the other players via the computer network. In the economic-consequences condition, participants received the same information as in the condition above and were further told that the observers would be in a position to vote down information providers, i.e. to determine which information providers are going to be excluded from participation in all further rounds.

Participants were told that it would be impossible for them to find out against whom they played and roles (player 1 or player 2) would be determined at random. In fact, each participant was placed in the role of player B1 (i.e., an information provider) and was told that in the first round he or she would play with player B2. Participants were told that they, as information providers, would receive information about both parties' payoffs, while the decision maker would only be aware of his or her own payoffs and would never receive objective information about the payoffs of the information provider. Participants received their payoff tables and a detailed explanation. As can be seen in Table 4.3, on issue A, they could
earn 6, 3, or 0 points, and on issue B 2, 1, and 0 on the levels z, y, or x, respectively. The fictitious other's payoffs were the mirror image of the participant's payoffs. A quiz ensured that the instructions were understood.

### Table 4.3  Payoff Table in Experiments 2 and 3

<table>
<thead>
<tr>
<th>Outcome to Player B1</th>
<th>Outcome to Player B2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Issue A</td>
</tr>
<tr>
<td>Level x</td>
<td>0</td>
</tr>
<tr>
<td>Level y</td>
<td>3</td>
</tr>
<tr>
<td>Level z</td>
<td>6</td>
</tr>
</tbody>
</table>

*Note.* Participants are Player B1.

We then gave participants false information about the other's motivation. We told them that we were interested in the consequences of having information about the other player. Participants were also told that they, but not their counterpart, had been selected to receive some information about the opponent. That information, we claimed, was elicited by means of the personality test filled out by all at the beginning of the experiment. They received the test allegedly filled out by the other, with circled numbers on the rating scales for each item. The results suggested that the other was rather competitive. For example, participants saw that the other had answered "2" on the item "In the bus, I stand up and let older people have my seat" (i.e., they disagreed; see also De Dreu & Van Kleef, in press).

It was then repeated that the decision maker would never get objective information about the payoffs of the information provider. Participants were told that they could to provide information about their own payoffs to the decision maker. They could fill out an empty payoff table that would afterwards be sent to the decision maker. Participants were also told that they could claim anything they wanted, that is, they could give as much information as they wanted and were free to choose between giving accurate and inaccurate information. Participants were shown an empty payoff table. On the same screen, just below the table there was a
row of 25 boxes containing the numbers from -12 to +12, and a box containing a question mark. Subjects were told that for each of the six cells in their payoff table they could select either a number between -12 and +12, or the question mark when they did not want to give any information about their points in that cell (see Appendix A). The choice would then appear in the appropriate cell of the payoff table (see Appendix B). Having made their choice for all six cells, participants could change their choices as often as they wanted. Once they clicked the "send" button, however, their choices would become irreversible. The payoff table with the values participants claimed to have got (in cells xA, yA, zA, xB, yB, and zB) was then allegedly sent to the decision maker.

Dependent measures. The numbers participants claimed were the values of the cells xA, yA, zA, xB, yB, and zB in their own payoff table were used to create two related indices of information provision. We classified all bits of information as accurate or inaccurate. Inaccurate means that the number a participant entered into a cell was higher or lower than their actual payoff in that cell. By counting the cells that contained accurate and inaccurate information, we calculated an amount of accurate information and an amount of inaccurate information. Both indices are discrete with a range of 0 to 6, the sum of both indices equals the total amount of information given. As participants had to enter numbers or question marks into six cells of the payoff table, the number of cells in which they gave no information (question marks) equals six minus the total amount of information.

After participants had sent their information, we asked them to rate their impression of the opponent on a five-point scale (bounded by 1 = cooperative and 5 = competitive). More than 90% of all participants gave an answer on the scale mean or higher. Participants' rating of their opponent's competitiveness (M = 4.05, SD = 1.11) differed from the scale mean (3.0), t(85) = 8.78, p < .001, and did not differ between the conditions, F(2,83) = 1.21, p > .30, ns.

Results

Amount of accurate and inaccurate information. The amount of accurate and inaccurate information was analyzed in a 3 (condition: private choice vs. observation only vs. economic consequences) x 2 (information: accurate vs. inaccurate) ANOVA with the last factor as a within-participants variable. A main effect of information,
$F(1, 83) = 128.7, p < .001$, indicates that participants gave more inaccurate ($M = 4.55, SD = 1.52$) than accurate information ($M = 1.07, SD = 1.45$). This overall tendency makes sense in light of the fact that the other party was presented as competitive, and the means indeed closely resemble those reported by Steinel and De Dreu (in press) in their competitive-other conditions.

More importantly, results revealed a significant interaction of information with condition, $F(2, 83) = 6.35, p < .01$. As can be seen in Table 4.4, condition significantly affected both the provision of accurate information and the provision of inaccurate information. Whereas participants in the private-choice condition provided mainly inaccurate and hardly any accurate information, participants in the economic-consequences condition gave considerably more accurate and less inaccurate information. Economic consequences seem to trigger the provision of accurate information, as participants in the economic-consequences condition provided more accurate information than participants in the private-choice and in the observation-only condition. With respect to inaccurate information, the significant difference is between private choice and public choice. Participants in the private-choice condition gave more inaccurate information than did participants in the observation-only or the economic-consequences condition (means and standard deviations in Table 4.4).

### Table 4.4 Provision of Accurate and Inaccurate Information as a Function of Condition; Experiment 2

<table>
<thead>
<tr>
<th>Condition</th>
<th>Accurate Information</th>
<th>Inaccurate Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Choice ($n = 35$)</td>
<td>0.60a</td>
<td>5.17c</td>
</tr>
<tr>
<td></td>
<td>(0.84)</td>
<td>(0.98)</td>
</tr>
<tr>
<td>Observation Only ($n = 25$)</td>
<td>1.00a</td>
<td>4.40d</td>
</tr>
<tr>
<td></td>
<td>(1.32)</td>
<td>(1.50)</td>
</tr>
<tr>
<td>Economic Consequences ($n = 26$)</td>
<td>1.77b</td>
<td>3.85d</td>
</tr>
<tr>
<td></td>
<td>(1.92)</td>
<td>(1.83)</td>
</tr>
</tbody>
</table>

*Note.* a, b Cell means in the same row that do not share subscripts differ at $p < .05$ according to a Duncan test. The numbers in parentheses are standard deviations.
**Direction of deceit.** The information provided in each of the six cells was submitted to a 3 (condition) x 2 (issue: A vs. B) x 3 (level: x vs. y vs. z) ANOVA, with the last two variables as within-participants factors. Question marks were regarded as missing data, which led to the exclusion of 19 participants. Results revealed a main effect of issue, $F(1, 64) = 4.00, p = .05$, showing that participants (correctly) stated that they got more points on issue A ($M = 2.26, SD = 2.26$) than on issue B ($M = 1.66, SD = 1.81$). More importantly, results revealed a main effect of level, $F(2, 63) = 19.95, p < .001$. Participants misrepresented their interests when dealing with a competitive opponent. They pretended that to them level x would be the most valuable one ($M = 5.01, SD = 3.78$), level y the intermediate one ($M = 1.68, SD = 2.50$), and level z the least valuable one ($M = -0.81, SD = 4.71$). Participants, thus, pretended that they got most points on level x, despite the fact that level x is in fact their least profitable level. There was no significant interaction with condition, $F(4, 128) < 1$, which means that this pattern was the same in all conditions.

We examined the number of participants who engaged in strategic misrepresentation by suggesting they would get negative outcomes when the other gets zero (cells zA and zB of the payoff table, see Table 4.3). The percentages of people who did so on issue A ranged between 28.6% and 42.3% and did not differ between the conditions, $\chi^2(2, N = 86) = 1.31, ns$. On issue B, the percentages ranged from 24.0% to 31.4% and did not differ between the conditions, either, $\chi^2(2, N = 86) < 1, ns$. We then examined the number of participants suggesting their outcomes exceeded those of the other (cells xA and xB of the payoff table, see Table 4.3).

For issue A, the percentages ranged from 44.0% to 48.6% and did not differ between the conditions, $\chi^2(2, N = 86) < 1, ns$. For issue B, the percentages ranged from 53.8% to 62.9% and did not differ between the conditions either, $\chi^2(2, N = 86) < 1, ns$. These percentages closely match those usually found among participants who face a competitive other (Steinel & De Dreu, in press). The finding that the percentages do not differ between the conditions suggests that the participants in all conditions act equally strategically.

**Discussion and Introduction to Experiment 3**

The results we got in the controlled laboratory setting in Experiment 2 are in line with our findings from the scenario study in Experiment 1. Participants were
more open and honest (i.e., they gave more accurate information) when a deteriorated reputation could lead to adverse economic consequences. This is in accord with the economic model of behavior, as the results indicate that the threat of future economic consequences boosts reputation concern and stimulates the provision of accurate information, even when being honest puts one's short-term outcomes at risk. The two experiments discussed thus far suggest that the provision of inaccurate information is attenuated by mere observation. Also, the provision of accurate information increases substantially when people know that having a negative reputation implies that adverse economic consequences will ensue.

Furthermore, and as predicted, when individuals believed that their choices were made in private they were more likely to lie (i.e. they provided inaccurate, misleading information) than when they believed others were observing them. It did not matter if they were only observed, or if they faced economic consequences in addition. This finding corroborates the social psychological account of reputation concern again – the mere presence of others influences behavior towards the implicit norm of being honest.

Interestingly, participants who believed that others were watching them provided less inaccurate information, but still acted just as strategically as participants who made their choices in private. People gave fewer pieces of inaccurate information when they were observed, but nevertheless, as many people in the private-choice condition as in the two public-choice conditions used the strategies of pretending to get negative outcomes on level z and higher outcomes than the other on level x. This suggests that enhanced reputation concern reduced the quantity, but did not affect the quality of deception. We shall return to this finding in the General Discussion section.

In both experiments, results showed that the accuracy of information provided increased with reputation becoming more consequential. The economic model of behavior holds that reputation concern decreases lying and deception only when a deteriorated reputation is coupled with undesirable economic consequences. This model was only partly supported by our data. Participants gave more accurate information when their reputation had economic consequences than when it had no economic consequences, yet this was the only measure on which the economic-consequences condition differed from the observation-only condition. On all other
measures, including lying and deception, the crucial difference was between making one's choice in private or in the presence of others. In both experiments, participants lied significantly less when their behavior was observed, and the additional adverse economic consequences did not increase the effect significantly further. This pattern of results strongly supports the social psychological model, which views reputation concern as rather independent from the prospect of having to endure adverse material consequences. Central to the social psychological model of reputation concern is the assumption that, in the presence of others, people are motivated by a desire to please those who observe their behavior, even when the audience is in no position to exert any influence. People, however, differ both in self-presentational needs and in the ability to present their reputation in a favorable light. To test this possibility, we designed Experiment 3.

The two aims of Experiment 3 were, first, to replicate the main effect of the mere presence or absence of observers on giving inaccurate information, and, second, to explore the moderating influence of individual differences in self-presentation.

**Impression Management**

An important ability for creating a positive impression is self-monitoring (Snyder, 1974; Snyder & Gangestad, 1986). Snyder (1974) distinguishes between high and low self-monitors. The former possess the ability to "regulate their expressive self-presentation for the sake of desired public appearances," whereas the latter "are thought to lack either the ability or the motivation to so regulate their expressive self-regulation" (Snyder & Gangestad, 1986, p. 125). Snyder developed the Self-Monitoring Scale (SMS), a 25-item questionnaire to measure self-monitoring. Because the psychometric quality of the SMS was called into question (Briggs & Cheek, 1988; Briggs, Cheek, & Buss, 1980; Gabrenya & Arkin, 1980; Miller & Thayer, 1989), Lennox and Wolfe (1984) developed a 13-item Revised Self-Monitoring Scale (RS-M). It comprises the factors "ability to modify self-presentation" (seven items) and "sensitivity to the expressive behaviors of others" (six items). Several studies showed that the two-factor structure of the RS-M, as well as its internal reliability, and relationships with relevant constructs such as social anxiety and with Snyder's self-monitoring scale were good to excellent (Anderson, Silvester, Cunningham-
We translated the Revised Self-Monitoring Scale (Lennox & Wolfe, 1984), which, to the best of our knowledge, had not been used in Dutch studies before, and pre-tested our translation with 103 students at the University of Amsterdam (none of those who did the pre-test participated in Experiment 3). The correlations between the Lennox and Wolfe Revised Self-Monitoring scale (RS-M), its subscales, and the Snyder (1974) Self-Monitoring scale, the English wording of the RS-M items, our Dutch scale, norm data and item statistics can be found in the Appendices. The norm data we collected in our pre-test (see Appendix C) closely resemble those reported by Shuptrine et al. (1990) and Anderson et al. (1999). The correlations between the RS-M subscales, the total RS-M scale and the Snyder self-monitoring scale (see Appendix D) resemble closely the respective correlations reported by Shuptrine et al. A factor analysis of our pre-test data supported the original two-factor model as proposed by Lennox and Wolfe. We found no evidence for gender effects on any item (see Appendix C). Therefore we are confident that our Dutch version reliably measures the same construct as the original RS-M scale.

Experiment 3

Experiments 1 and 2 yielded some initial evidence for the argument that reputation concern is a barrier against lying, and identified observation (i.e., the presence of an audience) as a crucial aspect of that barrier. Participants whose behavior was visible to an audience gave less inaccurate information, in contrast to participants whose behavior was not observed by an audience. In Experiment 3, we expected to replicate this effect (Hypothesis 1). Because high self-monitors adjust their behavior to meet the social demands of a situation more than low self-monitors, we also expected that high self-monitors should be more strongly affected by reputation concerns. Thus, we predicted that the effect of the mere presence or absence of observers on the provision of inaccurate information would be stronger among high self-monitors than among low self-monitors (Hypothesis 2).

Method

Participants and experimental design. Fifty-four \( n = 12 \) male and \( n = 42 \) female students at the University of Amsterdam participated and received € 6 (approx. $6).
Participants were randomly assigned to the two experimental conditions of observation. Replicating two conditions of Experiments 1 and 2, choices were either made in private (i.e., private-choice condition), or in the presence of observers (a replication of the mere-observation condition; henceforth referred to as public-choice condition). Self-monitoring was inserted as a post-hoc blocking factor. The crucial aspect of self-monitoring for this research is the ability to modify self-presentation (Lennox & Wolfe, 1984, see Appendix C). Therefore, we used a median-split on the ability to modify self-presentation subscale of the Lennox and Wolfe Revised Self-Monitoring Scale to classify people as low or high self-monitors. We neglected the subscale measuring sensitivity to the expressive behavior of others, because our hypotheses involve no real interaction with others (to whose expressive behavior one could be sensitive), but rather focus on what participants think their future reputation will be in the eyes of others. Main dependent variables were the amount of information about preferences and priorities provided to the other and the accuracy of this information. Additional measures involved self-reports on the motivation for providing more or less accurate information.

Procedure and manipulation of the independent variables. When participants came to the laboratory, they were seated in cubicles equipped with a computer. Participants answered a Dutch translation of the Lennox and Wolfe (1984) Revised Self-Monitoring Scale, were randomly assigned to the two observation conditions and then proceeded as in Experiment 2.

Dependent measures. Participants answered the Lennox and Wolfe (1984) Revised Self-Monitoring Scale (the reader can find the Dutch translation and norm data in Appendix C). Depending on whether their score on the ability to modify their self-presentation subscale was above or below the Median ($Mdn = 22$), they were classified as either low or high in self-monitoring. As in Experiment 2, we calculated indices of accurate and inaccurate information. Participants were asked to rate their impression of the opponent on a five-point scale (bounded by $1 = \text{cooperative}$ and $5 = \text{competitive}$). No participant rated the competitive opponent as cooperative, and ratings of the opponent's competitiveness ($M = 3.91, SD = 0.97$) differed significantly from the scale mean, $t(53) = 6.93, p < .001$. As a manipulation check, participants were asked to rate the item "My behavior was observed by other participants" on a five-point scale (bounded by $1 = \text{fully reject}$ and $5 = \text{fully accept}$).
Participants indicated their gender and age, were thanked, debriefed and paid.

**Results**

*Treatment of the data and descriptive statistics.* All dependent variables were submitted to Analysis of Variance (ANOVAs) with the between-participants factors observation (private choice vs. public choice), self-monitoring (low vs. high) and gender (male vs. female). Gender had no influence on any variable (all Fs < 1.6, ns) and was left out of further analyses. Table 4.5 presents the means and standard deviations broken down for the experimental conditions.

<table>
<thead>
<tr>
<th>Table 4.5</th>
<th>Means and Standard Deviations for Giving Accurate and Inaccurate Information Broken Down by Observation and Self-Monitoring; Experiment 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Private Choice</td>
</tr>
<tr>
<td></td>
<td>Low Self-Monitors (n = 14)</td>
</tr>
<tr>
<td>Accurate Information</td>
<td>0.93&lt;sup&gt;a&lt;/sup&gt; (1.14)</td>
</tr>
<tr>
<td>Inaccurate Information</td>
<td>4.64&lt;sup&gt;c&lt;/sup&gt; (1.78)</td>
</tr>
<tr>
<td></td>
<td>Low Self-Monitors (n = 12)</td>
</tr>
<tr>
<td>Accurate Information</td>
<td>1.00&lt;sup&gt;a&lt;/sup&gt; (0.95)</td>
</tr>
<tr>
<td>Inaccurate Information</td>
<td>4.71&lt;sup&gt;c&lt;/sup&gt; (1.49)</td>
</tr>
</tbody>
</table>

Note. a, b Cell means in the same row that do not share subscripts differ at p < .05 according to a Duncan test. The numbers in parentheses are standard deviations.

*Manipulation check.* A 2 (observation) x 2 (self-monitoring) ANOVA revealed that under private choice, participants agreed less with the sentence "My behavior was observed by other participants" than under public choice (M = 2.18, SD = 1.12 vs. M = 3.19, SD = 1.49), F(1, 50) = 7.88, p < .01. No other effects were significant.

*Amount of accurate and inaccurate information.* The amount of accurate and inaccurate information was analyzed in a 2 (observation) x 2 (self-monitoring) x 2 (information: accurate vs. inaccurate) ANOVA with the last factor as a within-participants variable. A main effect of information, F(1, 50) = 46.85, p < .001, showed
that participants gave more inaccurate ($M = 4.09$, $SD = 1.96$) than accurate information ($M = 1.22$, $SD = 1.59$). This overall tendency makes sense in the light of the fact that the other party was presented as being competitive. More importantly, and consistent with Experiments 1 and 2, results revealed an interaction between information and observation, $F(1, 50) = 5.25, p < .05$. As can be seen in Table 4.5, participants gave more accurate and less inaccurate information under public choice than under private choice. Results further revealed a trend towards the expected three-way interaction of information, observation, and self-monitoring, $F(1, 50) = 3.76, p = .058$. Consistent with Hypothesis 2, under public-choice, high but not low self-monitors gave less inaccurate information. Although there was a tendency for high-monitors to also provide more accurate information while under observation, this effect was not significant. In other words, the effect of private versus public choice found in Experiment 2 appears to be stronger for high self-monitors.

**Direction of deceit.** The information provided in each of the six cells was submitted to a $2 \times 2 \times 2 \times 3$ ANOVA, with the last two variables as within-participants factors. Question marks were regarded as missing data, which led to the exclusion of 16 participants. A main effect of issue, $F(1, 34) = 8.75, p < .01$, showed that participants (correctly) stated that they got more points on issue A ($M = 2.68$, $SD = 1.71$) than on issue B ($M = 1.86$, $SD = 1.25$). A main effect of level, $F(2, 33) = 13.53, p < .001$, showed that participants pretended that level x would be the most valuable one ($M = 4.54$, $SD = 3.28$), level y the intermediate one ($M = 1.47$, $SD = 1.68$), and level z the least valuable one ($M = 0.80$, $SD = 3.98$).

As can be seen in Figure 4.1, participants engaged in the type of misrepresentation which is usually found for people who face competitive others (Steinel & De Dreu, in press). They pretended that they got most points on level x, despite the fact that level x was in fact their least profitable level.

Results further revealed a trend towards an interaction of level with observation ($F(2, 68) = 2.62, p = .08$). Consistent with our hypothesis, the magnitude of misrepresentation was smaller under public choice rather than private choice. Whereas participants under public choice claimed that the difference in value between level x and level z was $M = 1.83$ ($SD = 5.24$), participants under private choice claimed that the difference was $M = 5.57$ points ($SD = 7.50$; $t(37) = 1.77, p < .10$).
We examined the number of participants who engaged in strategic misrepresentation by suggesting that they would get negative outcomes in cells zA and zB (see Table 4.3). Logistic regression revealed no main effects of observation or self-monitoring (Bs range from -1.13 to 0.21, all ns), nor any interactions (B = -1.67, and B = -1.83, respectively, both ns). The percentages of people who pretended to get negative outcomes ranged between 7.1% and 35.7% for cell zA, and between 7.1% and 28.6% for cell zB.

We then examined the number of participants suggesting their outcomes exceeded those of their opponent in cells xA and xB (see Table 4.3). Logistic regression, similarly, revealed no main effects of observation or self-monitoring (Bs range from -1.18 to 0.78, all ns) and no interactions (B = -1.48, and B = -1.48, respectively, both ns). The percentages of people who pretended to get higher outcomes than the opponent ranged between 14.3% and 50.0% for cell xA, and between 21.4% and 64.3% for cell xB.
The finding that the percentages do not differ between the conditions suggests that, like in Experiment 2, the participants act equally strategically in all conditions. However, the absence of significant effects could also be a result of a lack of statistical power due to small cell sizes. Despite not significant in logistic regression, the data suggests a trend towards the following: for each of the four strategies (i.e., enter a negative value in cell $z_A$, enter a negative value in cell $z_B$, enter a value higher than 6 in cell $x_A$, and enter a value higher than 2 in cell $x_B$), the lowest percentage of participants who applied that particular strategy was always found among high self-monitors in the public-choice condition, and the highest percentage was always found among high self-monitors in the private-choice condition. The percentages among low self-monitors were in between in all cases.

This suggests that under public scrutiny, high self-monitors reduce their use of strategic misleading more than do low self-monitors. However, this trend failed to reach significance in the logistic regression. It seems as if the prevalence of strategic misrepresentation (i.e., the quality of deception) differed less between the conditions as did the overall provision of inaccurate information (i.e., the quantity of deception). We will return to this point in the General Discussion.

Discussion

The findings of Experiment 3 replicate and refine the pattern of results found in Experiments 1 and 2. Participants who assumed that they were observed while providing information gave less inaccurate information than did participants who assumed that they could make their choice in private. More importantly, we argued and demonstrated that this tendency is more pronounced among high self-monitors than among low self-monitors. Because self-monitoring is closely related to reputation concern, this effect is consistent with our idea that effects of observation on lying and deception are due to reputation concern.

General Discussion and Conclusions

Reputation affects mutual exchange interactions. A competitive strategy, although sometimes beneficial in the short-term, may yield lower profits in the long run than a cooperative course of action (Axelrod & Dion, 1988; Axelrod & Hamilton, 1981; Lahno, 1995; Messick & Liebrand, 1995; Sheldon, 1999; Tinsley et al., 2002).
Individuals face situations in which being open and honest promotes the discovery of mutually beneficial agreements yet also opens the door to getting exploited by a competitive counterpart. One way to protect oneself from being exploited by a competitive counterpart is by misleading the counterpart. However, strategic misrepresentation is a deceitful activity and engaging in lying and deception can damage one's reputation.

We reasoned that whether individuals engage in lying and deception would depend on their concern with their reputation. To test this assumption, we compared two models of human behavior, the economic and the social psychological one. Whereas the economic model holds that reputation concern makes people refrain from lying when a deteriorated reputation has material consequences (e.g., it may lead to exclusion from profitable future exchanges), the social psychological model holds that reputation concern matters as soon as one's behavior is observed.

In Experiment 1 and 2, three conditions were compared: one in which reputation mattered according to the economic model, one in which reputation mattered according to the social psychological model, and one in which reputation did not matter. Both experiments provided little support for the economic model. In Experiment 1 was found that people gave more accurate information about a prize they won, when observers could exclude them from future exchanges involving material gain, than under anonymity. However, facing economic consequences did not increase the accuracy of information above the level that resulted from mere observation. In Experiment 2, we further showed that this effect is not restricted to behavioral intentions in a vignette type of experiment, but can also be observed in actual behavior in a controlled experiment. Moreover, Experiment 2 showed that facing economic consequences influenced the amount of accurate information provided, but not the amount of inaccurate information. That is, facing economic consequences led to the provision of more accurate information than merely being observed. However, facing economic consequences did not lead to the provision of less inaccurate information than merely being observed. Thus, we found only weak support for the economic model of reputation concern.

The social psychological account of reputation, which holds that people develop a reputation concern as soon as they feel observed, was tested in all three experiments, and received considerable support. In Experiment 1, people gave more
accurate information about a prize they won when they were observed than under anonymity. Experiments 2 and 3 replicated this finding. However, some inconsistencies were observed. Whereas Experiment 1 showed that being observed increases the accuracy of the information provided, Experiment 2 showed that being observed influenced the amount of inaccurate information provided, but not the amount of accurate information given. Three explanations come to mind.

First, Experiment 1 used a scenario, whereas Experiments 2 and 3 were behavioral experiments. Methodological differences may account for the inconsistencies. Second, the measures taken in Experiment 1 did not discriminate between providing inaccurate and accurate information. As such, the dependent variables differ across experiments, and this may account for some of the apparent inconsistencies. Third, reputation concern is a stronger motive for high self-monitors than for low self-monitors, but we did not control for self-monitoring in Experiment 1 and 2. Consequently, Experiment 3 revealed an effect of observation on the provision of both accurate and inaccurate information, which appeared to be mainly caused by the behavior of high self-monitors. To play it safe, we conclude that observation reduces deception in terms of actively misleading one’s counterpart, and perhaps in terms of withholding accurate information.

Interestingly, we found that reputation concern motivated people to decrease the quantity of inaccurate information they give. The quality of the deceptive messages they sent, however, remained virtually unchanged. People in the public-choice conditions of Experiments 2 and 3 gave less inaccurate information than in the private-choice condition. Nevertheless, the percentage of people who adopted a strategy of misleading the competitive opponent was only slightly (and not significantly) lower when choices were made in public. Reputation concern made people lie less, which was reflected in the fact that they provided fewer pieces of inaccurate information. The fact that they still lied about the details necessary to mislead a competitive counterpart suggests that, apart from telling “fewer lies,” reputation concern makes people tell “better lies.” In other words, reputation concern makes them try and modify their deceptive message (“Choose z, and I’ll get less than you. Choose x, and I’ll get more than you.”) in such a way that they reach the same end (i.e., to strategically mislead a competitive counterpart) by sending fewer pieces of inaccurate information.
In ultimatum bargaining research, it has been shown that seemingly fair behavior (e.g., offering a 50-50 split of the coins to be divided) is often motivated by a desire to appear fair rather than to be fair (e.g., Pillutla & Murnighan, 1995; Straub & Murnighan, 1995; Van Dijk, De Cremer, & Handgraaf, 2002). Maybe providing accurate or inaccurate information in the Information Provision Game follows a similar mechanism as proposing fair or unfair divisions in the Ultimatum Bargaining Game. Future research should investigate whether and under what circumstances people try to appear rather than actually behave less deceitful.

Perhaps the most important contribution of Experiment 3 was that it showed that the effects of observation were more pronounced among high rather than low self-monitors. This finding has several implications. First, because high self-monitors are supposed to be more concerned with the impression they make on others, the finding that observation effects are stronger for high self-monitors is compatible with the idea that such effects are due to reputation concern. Some formal mediation analysis already supported this idea in Experiment 1, and together with the indirect evidence obtained in Experiment 3 we can safely conclude that observation reduces tendencies to engage in lying and deception because it increases self-presentation needs and concern with reputation.

At a more general level, the current studies contribute to our knowledge of the relation between self-monitoring and deception. Earlier research has shown that self-monitoring influences people's ability to engage in and to detect lying and deception. High self-monitors have been found to be more convincing liars than low self-monitors because they inform more carefully about the targets when they prepare their lies (Elliott, 1979), are more adept at controlling their facial expressions while lying (Miller, DeTurck, & Kalbfleisch, 1983; Siegman & Reynolds, 1983), and more adept at adapting the content of their lies to the target's expectations (Rowatt, Cunningham, & Druen, 1998). High self-monitors have also been found to be better lie-detectors than low self-monitors (DeTurck & Miller, 1990; Geizer, Rarick, & Soldow, 1977).

Earlier research suggests that high self-monitors are less resistant to lying than low self-monitors, because they are more adept at camouflaging leakage cues and, consequently, must be less afraid to get caught. Our data completes that picture by showing that, under certain conditions, high self-monitors might be even more
resistant to lying than low self-monitors. Two situational features seem to be necessary to discourage high self-monitors from lying and deceiving. First, social cues in the situation suggest that lying could damage one's reputation. In our experiment, this cue was the audience who observed the participant's choices. Second, it must be obvious that liars cannot get away with their lies, that is, that it is impossible for them to hide their deception. In our experimental situation, participants believed that the audience was aware of the size of their actual payoffs, and could therefore detect their deceit when their messages differed from that factual information.

In response to the recent cases of fraud and deception we mentioned at the outset of this paper, several suggestions about how such cases could be avoided in the future have been discussed. While some advocated more public control of business practices, others argued that surveillance without punishing wrongdoing was useless and favored increasing the legal and economic penalties on deceptive practices. Our results suggest that public control can keep people from deceiving, even in the absence of economic consequences.

Summary and Conclusions

Whereas previous research has mainly focused on the magnitude and form of strategic misrepresentation, the present research considered the other side of the coin by examining barriers to lying and deception in social decision-making. We argued that people lie less when they have reason to assume that doing so could harm their reputation and contrasted a social psychological with an economic model of reputation concern. Our data supports the idea people deceive less when they are merely observed by others, even in the absence of economic consequences. When economic consequences are present, people not only deceive less but also increase their openness. Because these patterns were stronger among high rather than self-monitors, it seems likely that the effects of observation are due to self-presentation needs and concern with reputation. Greater accountability to the public may help many of us, including those that lead multinationals, refrain from engaging in strategic misrepresentation and deceitful activity.
"Where are the four coins now?" asked the Fairy. "I've lost them," replied Pinocchio, but he was telling a lie, because they were in his pocket. As he told the lie, his nose, which had always been long, suddenly grew two inches longer. "And where did you lose them?" "In the wood near by." At this second lie, his nose grew some more. "If you lost them in the nearby wood," said the Fairy, "we'll hunt for them and find them, for everything that is lost there is always found." "Oh! now I remember properly," answered the puppet, getting in a muddle. "I did not lose the four coins, but I swallowed them when I was taking your medicine." At this third lie, Pinocchio's nose lengthened in such an extraordinary manner that he could not even turn around (...) The Fairy was watching him and laughing. "Why are you laughing?" asked the puppet, embarrassed and anxious about the nose which was growing before his very eyes. "I am laughing about your lies." "How do you know I am lying?" "Lies are quickly recognized, my lad. There are two kinds of lies, lies with short legs and lies with long noses. Yours, just now, happen to have long noses."  

Lying and deception have been studied in a variety of disciplines, from a variety of perspectives. Social psychology and related disciplines have focused on the "lies with the long noses," that means, lies that stare you straight in the face. Social psychologists have investigated how deception manifests itself in a liar's facial expression, language, body movements, etc. Of course, lies cannot be detected from the elongation of a liar's nose, as in Pinocchio's case. Nevertheless, people's emotional display and nonverbal expressions change when telling lies in contrast to telling the truth (e.g., DePaulo, 1992; DePaulo et al., 2003; Ekman, Friesen, & O'Sullivan, 1988).

"Lies with short legs," that is, lies with which the truth soon catches up, have

been the province of forensic psychologists and psychometric scholars. They have developed tests and devices to make sure that liars do not get away with it. Researchers have been trying to find out more about what people do when they lie and deceive, and how liars can be differentiated from truth-tellers. Hence, from previous work, we know quite a bit about the enactment and the perception of lying and deception.

Research has remained relatively silent, however, about the conditions that foster or inhibit tendencies to mislead others. Lewicki (1983) suggested a couple of factors which influence the motivation to select a deceptive influence strategy. On the one hand, deception is a function of the consequences of earlier (deceptive) behavior and the evaluation of these consequences. On the other hand, Lewicki's model suggests that situational factors, such as relationship between the parties, power, status, or norms, and individual differences, such as values, traits, or demographic variables, influence the motivation to lie. Research has subsequently addressed many of these factors. However, previous research has several shortcomings, and addressing those was the aim of this dissertation. First, prior research has systematically assumed that individuals in conflict and negotiation are exclusively motivated to do well personally and to disregard the outcomes of their negotiating partners. Second, and related to the first point, prior research has ignored the fact that individuals often have information or beliefs about their partner's cooperative or competitive goals. Third, previous work has remained silent on the fact that in conflict and negotiation people are more or less concerned with face and reputation. Fourth, and finally, past work has helped gain insight into when and how often people lie and deceive, but has not addressed the questions why and how they do so. All these issues were addressed in the present dissertation.

The main goal of this dissertation was to investigate when, why, and how people mislead interdependent others. Approaching lying and deception from a motivational perspective, I investigated the influence of people's own social value orientation and of people's expectations about their counterpart's motivational goal on the provision of accurate and inaccurate information. I further investigated, on the one hand, the role of fear, greed, and punitive sentiments as factors which promote the use of deception, and, on the other hand, concern with reputation and self-monitoring as factors inhibiting deception in social decision-making.
The Effects of Expectations About the Other's Motivational Goals

It is notable that prior research on lying and deception has neglected one of the most important individual difference measures in the context of interdependent decision-making. Social value orientation, that is, a person's preference for certain outcome distributions between oneself and interdependent others (McClintock, 1972, 1976; Messick & McClintock, 1968; Van Lange, 1999), is an important determinant of behavior in social dilemmas (e.g., De Best-Waldhober & De Dreu, 2000; De Cremer, 2000; Gärling, 1999; Van Lange & Kuhlman, 1990; Van Lange & Visser, 1999), interdependent decision-making, and negotiation processes and outcomes (e.g., Beersma, 2002; Beersma & De Dreu, 1999; De Dreu & Carnevale, 2003; De Dreu & Van Lange, 1995; Olekalns, Smith, & Kibby, 1996; Van Kleef & De Dreu, 2002).

Recognizing the importance of social value orientation for social decision-making, I investigated how social value orientations and expectations about an opponent's social motive influence lying and deception. Social decision-making entails choices made by (at least) two persons, whose decisions are influenced by their social value orientations. Hence, one player's expectations about the counterpart's motivational goals should be crucial in his or her attempt to influence the counterpart's decision-making. Based on goal-expectation theory (Pruitt & Kimmel, 1977), which states that expecting the counterpart to cooperate is a necessary prerequisite for cooperative action to evolve, I reasoned that expecting a competitive opponent would reduce the inhibition to engage in unethical behavior (Rubin, Pruitt, & Kim, 1994), increase the fear of being exploited (Coombs, 1973; Pruitt & Kimmel, 1977), and make greed a more salient goal, which in turn leads to more lying and deception aimed at doing well for oneself, perhaps even at the expense of the other. Consequently, I predicted that seeing the other as competitive rather than cooperative would reduce the tendency to be accurate and increases the tendency to be dishonest and deceitful.

In Experiment 1, I showed that lying and deception do indeed depend on people's expectations about their counterpart's motivational goal. Participants lied more when they expected a competitive rather than a cooperative other. Moreover, when expecting a cooperative rather than competitive opponent, the participants provided more accurate information as well. The same pattern of results was found.
in Experiments 3 and 4. I applied the Information Provision Game as experimental paradigm in Experiments 1 and 3, whereas the results in Experiment 4 were obtained using a traditional bargaining scenario.

Thus, the first major contribution of this dissertation to the existing theoretical understanding of lying and deception in social decision-making is that it demonstrated the influence of other’s motivational goal. Whether people expect to interact with a cooperative or a competitive counterpart has been shown to be a key factor in predicting cooperation in social dilemmas and negotiation (Komorita & Parks, 1995; Pruitt, 1998). The present findings show that expectations about a counterpart’s motivational goal influence the provision of information in distinct, predictable ways. This finding has implications for interdependence theory and goal-expectation theory, which will be discussed later on.

**Strategic Misrepresentation**

Prior research on lying and deception has predominantly elicited information on when and how often people lie and deceive, but has not addressed the question *how* they do so. I reasoned that the best strategy one could adopt when dealing with a competitive counterpart would be to pretend that one’s own preferences are opposed to what they really are, and, thus, compatible with the opponent’s interests. Furthermore, it would be wise to make a claim about the interests involved which is out of the proportions to the actual distribution of interests, saying that one would gain more and lose more from each decision than the competitive opponent. That is, participants should suggest that a decision which yields the outcome “zero” to the opponent would yield a negative outcome to themselves, and decisions which yield a high positive outcome to the opponent would yield an even higher outcome to themselves. By doing so participants would suggest that their interests are positively correlated with those of the competitive opponent – in other words, they would present the situation as one in which the counterpart cannot achieve high relative gain if he or she chooses the option which increases his or her individual gain. As a result, a high individual outcome for the opponent would seem to be a relative loss (because the participants pretended that he or she would gain even more), whereas a zero outcome for the opponent would seem to be a relative gain (because the participant pretended that he or she would
get a negative outcome). I predicted that individuals would misrepresent their preferences and priorities in such a way that opposing interests would appear as compatible interests when the other is believed to be competitive, but not when the other is believed to be cooperative. To recap, facing a competitive counterpart, participants were expected to misrepresent their situation as one in which they and the competitive counterpart were allies rather than opponents, and, in fact, that is what participants did – this pattern was found in all experiments using the Information Provision Game.

The second substantial contribution of this dissertation is that it managed to shed light on the question how people try to steer a counterpart’s decision-making by the information they provide. Towards a competitive counterpart, participants strategically misrepresented the situation as one involving common interests. They signal their counterpart that he or she would sustain a relative loss if he or she took a decision which increases his or her individual gain, but would get a relative gain if he or she took a decision which decreases his or her individual outcome.

The finding that participants misrepresent their preferences towards a competitive opponent, but not towards a cooperative one, has interesting implications for interdependence theory. A crucial aspect of interdependence theory (Kelley & Thibaut, 1978) is the notion that it is not the outcome matrix as it is given that influences people's behaviors. Rather, people transform the given matrix into an effective matrix. Central to these outcome transformations is people's concern with own and other's outcomes. How and when people transform matrices depends on various factors, such as social norms, relation-specific motives, situational structure, needs of the parties involved, and personal dispositions (for a recent review, see Rusbult & Van Lange, 2003).

The present findings take interdependence theory a step further because they suggest that people anticipate their counterpart's matrix transformation. Obviously, the participants managed to step into their opponent's shoes and find out what information he or she must have, so that his or her expected matrix transformation would lead him or her to a decision which is favorable to the participant. Taking the information provided by the participant at face value, the competitive counterpart could only (mistakenly, as we know) construe the situation as one in which the only chance he or she had to achieve relative gain and prevent
relative loss would entail making the decision to go for zero points, thereby "dealing out" a negative payoff to the participant. In fact, the participant would achieve a good outcome through this decision.

Besides, this type of strategic misrepresentation could serve two other related aims. First, misrepresenting the situation as one that involves compatible issues signals to the opponent that, he or she "can't win" – no matter what decision he or she takes, attempting to defeat the information provider is a lost cause. The information provider is confronted by a competitive counterpart who can take a decision which yields him- or herself a high individual outcome. The information provider cannot prevent the decision maker from choosing the individually high outcome. However, by pretending interests which are opposed to his or her actual ones, the information provider can make the other believe that, even though he or she got excellent outcomes for him- or herself, he or she did beat the information provider. Spoiling the opponent's joy a bit might be another motivation to pretend that one gets higher outcomes than the other, despite the opposite being true. Second, misrepresenting one's preferences and priorities makes the situation appears to be a cooperative one, in which the participant and the (competitive) decision maker are "swimming or sinking together." Seeking partnership and aligning oneself with a competitive other may be effective in getting the other to cooperate rather than compete. This reasoning has much in common with the Machiavellian principle of "if you can't beat them, join them." Also, there is evidence that competitive individuals are especially cooperative towards others if they all belong to the same group competing against another group (Carnevale & Probst, 1998). Although this will not benefit the participant in the present situation, it may serve a longer-term perspective in that the competitive other might come to see the participant as an ally rather than an adversary in future exchanges. Obviously, future research is needed to corroborate or invalidate these speculations.

The Motives Behind Misleading a Competitive Counterpart

In Experiment 2 of Chapter 3, I further investigated the mediating processes that explain these consistent effects. I reasoned that situations in which one has to deal with a competitive other might make greed more salient, might cause one to
fear exploitation, or might raise the desire to punish (expected) wrongdoing. Greed, fear, and punitive sentiment were given differential weight by independently making the outcome for the participant and for the fictitious opponent more or less important.

The results suggested that withholding accurate information was motivated by fear as well as greed. People hesitate to share their private knowledge when they fear that their counterparts might take advantage of it. Fear, however, was not the mediating process behind lying. Rather than fear, it was greed that seemed to be what motivated people to give inaccurate information. In other words, the results suggested that greed motivated a reduction in cooperative behavior, as well as an increase in competitive behavior, while fear only motivated a reduction in cooperative behavior. This may indicate that fear of being exploited activates avoidance tendencies and a desire to escape the situation, whereas greed activates approach tendencies. This seems intuitively appealing, but research is needed to examine this issue. Also, this result suggests that being honest and being deceptive are not the end points of one and the same continuum. Rather, they appear to be different types of behavior that can be motivated by the same, or by different goals.

Taking account of recent theory and research, a third possible motive underlying lying and deception, namely punitive sentiment (Price, Cosmides, & Tooby, 2002) was proposed. In Experiment 2 of Chapter 3, it was found that lying and deception were positively correlated with punitive sentiment. However the manipulation of various levels of punitive sentiment through making the outcomes important to the fictitious opponent failed. Drawing on social dilemma research, it was argued that punitive sentiment may be stronger for some individuals than for others. Consistent with this claim, Experiments 3 and 4 revealed the so-called over-assimilation effect — the tendency for pro-social individuals to be even more competitive (i.e., deceptive) towards competitive others than selfish individuals are (Kelley & Stahelski, 1970; Van Lange, 1992). The over-assimilation effect is usually explained by arguing that pro-social individuals try to "teach the competitive other a lesson," an explanation strongly compatible with the punitive sentiment motive studied in Experiment 2 of Chapter 3. Results could have been stronger: The test for mediation in Experiment 2 failed, and no measures of punitive sentiment were included in Experiment 3 and 4 of Chapter 3. Nevertheless, results suggest that lying
and deception can be motivated by punitive sentiment – the desire to punish the other for some observed or expected wrongdoing. Future research could examine this issue in more detail.

All in all, two significant contributions of this dissertation are that it sheds light on the processes underlying the provision of accurate and inaccurate information, and that it describes the influence of one's own social value orientation.

### Concern with Reputation as a Barrier Against Lying

Whereas the studies in Chapter 3 focused on factors that stimulate lying and deception, in Chapter 4 I investigated one possible motivation for refraining from self-serving lying, namely concern with reputation. I argued that people lie less when they have reason to assume that engaging in lying and deception would harm their reputation. I contrasted a social psychological with an economic model of reputation concern and showed that people engage in less lying and deception when they are observed, even in the absence of further economic consequences. This finding supports the social psychological model of reputation concern – people gave significantly less inaccurate information when they were observed rather than when they acted in private. Drawing upon this finding, I argued and showed that people's predisposition to engage in self-monitoring (Lennox & Wolfe, 1984; Snyder, 1974) moderates the effects of reputation concern on lying and deception. While low self-monitors were not influenced by mere observation and lied as much when they were observed as when they were not, high self-monitors lied less when they were observed.

Another contribution of this dissertation, therefore, is that it adds to our knowledge about how reputation concern and self-monitoring influence lying and deception. Reputation concern becomes a reason to engage in less lying and deception as soon as one's behavior is observed, even when this has no economic consequences. The finding that people care about the impression they make contradicts the economic model of human behavior, which suggests that they merely try to increase their own outcome, and points to a social psychological model of human behavior, which suggests that behavior can be motivated by other needs than profit maximization alone, for example, by self-presentation.
Earlier research has suggested that high self-monitors engage in more lying and deception than low self-monitors. High self-monitors are more convincing liars than low self-monitors because they inform more carefully about the targets when they prepare their lies (Elliott, 1979), are more adept at controlling their expressive behavior while lying (Miller, DeTurck, & Kalbfeisch, 1983; Siegman & Reynolds, 1983), and are better at adopting the content of their lies to the expectations of the target (Rowatt, Cunningham, & Druen, 1998). High self-monitors have also been shown to be better lie-detectors than low self-monitors (DeTurck & Miller, 1990; Geizer, Rarick, & Soldow, 1977). Earlier research suggests that high self-monitors are less resistant to lying than low self-monitors, because they are more adept at hiding leakage cues and, consequently, must be less afraid to get caught. The present data completes that picture by showing that, under certain conditions, high self-monitors might be even more resistant to lying than low self-monitors. Two situational features seem to be necessary to discourage high self-monitors from lying and deceiving. First, social cues in the situation suggest that lying could damage one’s reputation. In the experimental situation, this social cue was the audience who observed the participants choices. Second, it must be obvious that liars cannot hide their deception. In the experimental situations, participants believed that the audience knew the size of their actual payoffs, and could therefore detect their deceit when their messages differed from that factual information.

**Theoretical Implications**

As discussed in detail in Chapter 3, the work reported in this dissertation drew on two related theoretical accounts – interdependence theory (Kelley & Thibaut, 1978; Rusbult & Van Lange, 1996, 2003) and goal expectation theory (Pruitt & Kimmel, 1977) and further applied insights from research in a behavioral decision tradition (Boles, Croson, & Murnighan, 2000; Kagel & Roth, 1995; Murnighan, Babcock, Thompson, & Pillutla, 1999; Schweitzer & Croson, 1999). Contributions to each of these lines of inquiry have been elaborated in the Discussion section of Chapter 3. Therefore, at this point, I will only summarize them briefly.

Goal expectation theory predicts cooperative and competitive choice behavior in the context of classic experimental games like the Prisoner’s Dilemma Game. It states that the two prerequisites of cooperative behavior are having cooperative
goals, and expecting the counterpart to have cooperative goals, too (Pruitt & Kimmel, 1977). The present results are highly consistent with this general prediction, and extend goal expectation theory to the domain of lying and deception. That is, the experiments reported in Chapter 3 allow the conclusion that individuals provide truthful information only when their counterpart is believed to be cooperative, and they themselves have a pro-social value orientation.

Like goal expectation theory, interdependence theory (Kelley & Thibaut, 1978; Rusbult & Van Lange, 1996, 2003) is primarily concerned with cooperative and non-cooperative behavior in Prisoner's Dilemma type of situations. Within interdependence theory, social value orientations and expectations about other's goals and intentions play a key role. No past research has explicitly considered lying and deception as a function of social value orientation, or expectations about other's goals. The fact that the present results are highly consistent with findings obtained in research focusing on cooperative and non-cooperative choice behavior indicates that key features of interdependence theory also apply to other types of behavior than cooperative and non-cooperative choices.

Researchers in the behavioral decision approach to mixed-motive interdependence tend to assume that decision makers are bounded in their rationality but otherwise motivated to increase their own profit as much as possible (e.g., Kagel & Roth, 1995). Current findings contradict this assumption at least to some extent, in that they show that lying and deception are influenced by the participant's social value orientation as well as by the participant's beliefs about the other's cooperative or competitive motivation. The influence of social value orientations indicates that individuals are not exclusively motivated by their immediate self-interest (for a discussion, see Rusbult & Van Lange, 1996). The influence of beliefs about other's cooperative or competitive goal is particularly troublesome for the behavioral decision approach, because self-interest alone would predict as much misrepresentation towards a cooperative other as towards a competitive one.

All in all, the present results contribute to goal expectation theory and interdependence theory by showing that their key predictions extend to the provision of accurate and inaccurate information. Second, the present results underscore the importance of fear and greed as underlying motives, but also show
that greed motivates the reduction in being accurate and the increase in being inaccurate, while fear primarily motivates the reduction in being accurate. Third, the present results point to punitive sentiment as a third potentially interesting motive for being deceitful, and suggest that pro-social individuals may be more susceptible to punitive sentiments than selfish individuals. Fourth, the present results contribute to the small body of research on lying and deception in the behavioral decision tradition by showing that both one's own social value orientation and beliefs about other's motivation strongly influence lying and deception. This contribution is important because it questions the model of humans as rational utility maximizers, so pervasive in this research tradition. Fifth, the present results show that humans facing a competitive other may be highly strategic not only when attempting to hide their true preferences and priorities, but also when strategically misrepresenting their private information, thereby anticipating the opponent's matrix transformation. Finally, the findings show that reputation concern becomes a barrier against lying and deception as soon as people realize that they are under public scrutiny. This is especially true for people high in self-monitoring.

Strengths and Limitations of the Information Provision Game

The contributions to theory discussed above largely derive from a newly developed Information Provision Game. The game was modeled after the dictator game (Camerer & Thaler, 1995, Van Dijk & Vermunt, 2000) and resembles the social interaction situation in which one party has to decide whether to provide the other with information about one's preferences and priorities. In the Information Provision Game, the participant's own outcomes depend on a decision made by a counterpart. For each of the decision options the counterpart faces, the participant has full information about the payoffs to both oneself and the counterpart. The counterpart, in contrast, is believed to be informed only about his or her own payoffs, and to have no information about the consequences of his or her choice to the outcomes of the participant. Participants may provide information about the consequences the other's decision would have for the participants' outcomes. Thereby, they can make some options appear more or less attractive and thus try to steer the other's decision.

The experimental task allows looking at the provision of information in close detail and to learn more about the amount of accurate and inaccurate information
presented, as well as about the direction of deceit. This is an important advance over earlier studies on lying and deception which were only able to code whether lying or deception occurred or not. Two questions should not be unanswered at this point. First, the reader may wonder whether findings obtained by means of this new game generalize to other settings. The replications of the main Information Provision Game finding through more traditional methods would suggest that they do. In Chapter 3, the findings obtained in Experiment 3 were replicated in Experiment 4, which used a more conventional transaction decision setting used in previous research on lying and deception (see e.g., Schweitzer & Croson, 1999). In Chapter 4, the findings of Experiments 2 and 3, which were obtained using the Information Provision Game, replicate the pattern of results obtained from the scenario questionnaire in Experiment 1.

Moreover, the results are highly consistent with those obtained in studies using face-to-face negotiation games (e.g., Murnighan et al., 1999; O'Connor & Carnevale, 1997). Second, the reader may feel the situation is set up in such a way that participants could easily guess the hypothesis and try to conform to the experimenter's expectations. Although the possibility that demand characteristics explain some of the results cannot be ruled out, it is unlikely that participants could accurately anticipate the over-assimilation effect found in Experiments 3 and 4 of Chapter 3, or the interaction with self-monitoring found in Experiment 3 of Chapter 4. It is also unlikely that participants managed to guess the hypothesis about the direction of deceit, which was confirmed in all experiments using the Information Provision Game. Thus, the more interesting and important results obtained by means of the Information Provision Game are difficult to explain in terms of demand characteristics, and generalize to other settings.

It should, however, be noted that some features of the Information Provision Game might have facilitated lying and deception. The setting ruled out negative long-term effects of lying (cf., Boles et al., 2000), participants did not have to fear that others could detect their lies by noticing a telltale incongruous facial expression (Drolet & Morris, 2000). Moreover, participants could have seen their lack of decision power as a justification for lying (Deutsch, 2000). Obviously, these features may affect the overall base rate of lying and deception. Nevertheless, the fact that the key findings of Experiments 1 and 3 of Chapter 3 were replicated with a more traditional
methodology in Experiment 4 suggests that the effects of the experimental manipulations are valid and reliable. Moreover, the features just noted can be easily adapted, for example to study lying and deception as a function of visual access, decision power, or concern for long-term relationships.

**Avenues for Future Research**

In the present dissertation research, I investigated when, how, and why people mislead a counterpart in interdependent decision-making. This research added to our knowledge about the role of social motivation in lying and deception. Yet at the same time, it also raised several follow-up questions, some of which have already been outlined above.

**Behavior Towards a Competitive Opponent**

The present results show that when people face a competitive opponent, they try to strategically mislead him or her. People do not reveal their private information honestly, which would mean to describe the situation as one involving opposed interests. Rather, they present the situation as one involving common interests. Doing so can serve two related purposes, both of which have to do with the matrix transformation which the competitive opponent is assumed to make. One purpose is to try and steer the opponent into choosing the option which gives him or her zero points, and the highest outcome to the participant. The second purpose is to spoil the decision maker's joy about his or her high outcomes by pretending that one would get as much (or even more), and at the same time to signal that one is an ally rather than an opponent. The latter purpose is related to the Machiavellian principle of "if you can't beat them, join them."

A way of misrepresenting the situation and trying to achieve both purposes is to pretend that one's gains as well as losses would exceed the gains or losses of the opponent. Thereby, one could steer the competitive opponent towards opting for the outcome which is worth zero to him or her, because he or she expects the zero-outcome to be a relative advantage, as compared to the negative outcome the information provider. Influencing the opponent's choice like this would mean a high outcome to the information provider, as the situation, in fact, involves opposed interests.
A milder version of misrepresentation, which can only achieve the psychological purpose, is to pretend compatible interests, without saying that one's gains and losses would exceed those of the opponent. Such a misrepresentation would probably not suffice to steer the other towards choosing the zero-outcome for him or herself. Rather the opponent would then choose the most valuable outcome to self, and would assume that the information provider would get a similar payoff. Outcome-wise, therefore, this misrepresentation without recourse to exaggeration would not pay off for the information provider. Psychologically, however, it might pay off, as the decision maker is bound to think that despite the high payoff he or she realized, he or she could not "beat" the other and earn more.

Throughout the experiments reported in this research, about 40 to 60 percent of the participants who expected a competitive opponent engaged in strategic misrepresentation with recourse to exaggeration. As hardly anyone gave accurate information, it is obvious that many participants have engaged in misrepresentation without recourse to exaggeration. It remains a question for further research to investigate if there are differences between the people who strategically misrepresent with or without recourse to exaggeration.

One characteristic which potentially could differentiate between those two groups is Machiavellianism. Misrepresentation with recourse to exaggeration aims at influencing the opponent's choice -- it could be that high Machs, being the better social performers, are more attracted to it. Misrepresentation without recourse to exaggeration, however, is not aimed at influencing the other's choice. Low Machs are less manipulative than high Machs, and maybe they are satisfied with this strategy which does not attempt to influence the other's behavior.

When people apply a strategy such as misleading a competitive opponent, do they conceive of it as being a pure exercise in "gamesmanship?" Do they expect to get away with it? When people apply similar strategies, how do they try and enhance their chances of success? Do they try and enhance their credibility by making their deceptive messages as credible as possible? Do they supplement their deceptive messages with verbal or other messages signaling cooperative intentions? Influencing the opponent's knowledge of the situation is one thing, influencing his or her impression of one's credibility as a way to prepare the ground for misleading him or her is a different story.
Behavior Towards a Cooperative Opponent

The present results suggested that people are quite honest towards opponents they perceive as cooperative. This is in line with findings from social dilemma research, which demonstrate that cooperation is often reciprocated (e.g., Fehr, Fischbacher, & Gächter, 2002; Nemeth, 1970; Parks & Rumble, 2001) and suggest that the behavior of the participants in the present series of experiments is guided by motives such as enlightened self-interest (Rubin, 1989) or social norms of reciprocity and fairness. This finding is interesting, because it refutes the potential criticism that participants merely engaged in gamesmanship. If participants were simply motivated to try and achieve the maximal number of points, then lying and deception should have been observed with a cooperative opponent as well as with a competitive one. Misleading and exploiting a cooperative opponent is an easy thing to do in the Information Provision Game. For example, one could suggest that the other's gains are own losses, like getting -6 where the other gets 6, -3 where the other gets 3, and so forth. A cooperative other should be expected to refuse own gains at the cost of the other party. Hence he or she might choose the seemingly fair option which, from his or her point of view, would involve no gains, but also no losses to both players. In fact, this decision would yield the maximum number of points for the participant.

Motivations Underlying Strategic Misrepresentation

The present results suggest that misleading a competitive opponent is motivated by fear, greed, and maybe also by punitive sentiment. Fear and greed influenced the provision of accurate and inaccurate information differentially. Future research could investigate whether, as these findings were interpreted in Chapter 3, fear of being exploited does indeed activate an avoidance tendency, whereas greed activates an approach tendency.

The role of punitive sentiment in lying and deception merits further investigation, as well. Prior research has shown that punitive sentiments may be especially strong in reaction to the detection of an competitive act – the study by Boles et al. (2000), for example, showed that when deception was revealed, people tended to punish the other and engage in retribution, even when this was costly to themselves. In the present studies, however, the fictitious opponent could not
possibly commit anything unfair by virtue of the fact that the person behind the role is less than real. Punitive sentiment, therefore, was only driven by the expectation that the opponent has a competitive orientation. It stands to reason that punitive sentiments will be a stronger motive as a response to competitive behavior rather than in expectation of competitive behavior.

We reasoned that people do not lie towards cooperative others, because expecting a cooperative other set them into a cooperative mind-set. But what happens if the other does not behave cooperatively in spite of expectations? Is punitive sentiment going to become an even stronger motive in subsequent interaction in that case?

Is the Behavior Conscious or Schematic?

Another interesting question is whether the behavior people exhibited in the Information Provision Game is an automatic schema-based response or a strategic, conscious behavior that requires cognitive effort. The present data cannot illuminate the cognitive processes behind the participants' behavior. Having observed plenty of participants play the Information Provision Game, I would assume that it is both: First, facing a cooperative or a competitive other activates either a schema of being open and honest, or a schema of being cautious, and, maybe, disposed to engaging in lying and deception. Second, this cooperative or competitive schema leads to a cognitive process of designing a message.

Designing an honest message to be sent to a cooperative other is relatively easy, and, consequently, the decision to be honest towards a cooperative other is usually made quickly. I doubt whether participants try to figure out if honesty will pay off in the long run, and what the exact decision of a cooperative other will be, provided they give accurate or misleading information. The decision how to design a misleading message meant for a competitive other, however, seems to require some cognitive effort. It was quite often the case that participants with a competitive opponent entered six question marks into their payoff table, reconsidered, and changed their message into a deceptive one. Frequently, they "improved" their deceptive message before sending it. Future research could address the cognitive aspects of giving truthful versus deceptive information. The most important question for follow-up research, however, in my opinion, is as follows:
Does it Work?

The present research is proof positive that people take their expectations about their counterpart's social motivation into consideration when deciding whether to be open and honest, or to strategically mislead the opponent. Furthermore, it demonstrated that individuals mislead competitive others in a strategic and calculated way. However, it does not address the question whether this behavior is useful – in other words, whether it works. How does an opponent react to the information he or she receives, and will the misleader ever be successful with the strategy he or she applied? And if yes, under what circumstances will the opponent believe the message to be genuine and reliable?

One aspect we did explore in any of the experiments is whether trying to mislead a competitive other is effective. Pretending opposed interests could be counterproductive as well, for example, when the opponent is suspicious and does not believe the information he or she gets. Future research could therefore investigate how cooperatively and competitively motivated individuals actually react to the information participants usually provide to individuals they expect to be cooperatively or competitively motivated, thereby exploring whether the way in which participants in the Information Provision Game provide their counterpart with information is indeed productive or counterproductive.

Under what circumstances do competitive others believe the misleading information? Which situational aspects or characteristics of the sender or the message lead to success in misleading? Do senders try and enhance the credibility of the message, and how do they do this? Do they signal cooperative incentives and try to build trust, in order for their misrepresentation to appear credible?

Participants who face a competitive opponent have little to lose: If they are open and honest, the competitive other will exploit them. If they try and mislead him or her, he or she will either not believe the lie, or believe it. The former case still means exploitation. In the latter case, however, if the opponent falls for the lie, the liar may not only be spared from exploitation, but also get an excellent outcome. Hence, trying to mislead the opponent seems to be the rational choice. However, trying to mislead others involves risks – most prominently, the risk that the lie will be detected. Under what circumstances do people take that risk? Do they take measure do get away with the attempt to lie? An example could be sending
ambiguous messages which are aimed at misleading the other, but could always be explained by some misunderstanding, should the other becomes suspicious. Future research could also compare the potential benefits of strategic misrepresentation with the complications that arise when one's expectation about the counterparts motivation are incorrect.

Concluding Remarks

Unlike most previous research on lying and deception that mainly focused on people's ability to lie convincingly or to detect other people's lies, this research investigated the motivational bases for strategic misrepresentation and deception. Building on interdependence theory (Kelley & Thibaut, 1978; Rusbult & Van Lange, 1996) and goal expectation theory (Pruitt & Kimmel, 1977), I showed that people are less honest and engage in more deception to someone who they believe to be competitive rather than cooperative, and that this effect is stronger for individuals with a pro-social rather than a selfish orientation. People are highly strategic in misleading a competitive opponent, and this behavior is motivated by greed, fear of exploitation, and perhaps also by punitive sentiments.

People are aware of the downsides of lying and deception – as soon as other people merely observe the individual's actions, concern with one's reputation leads the individual to be more honest and less deceitful. This finding extends our knowledge of impression management in negotiation, also because the effects of being observed were stronger for people who were high rather than low self-monitors (Lennox & Wolfe, 1984; Snyder, 1974).

Although giving practical advice was not our goal, the theoretical insights offered by the present research suggest that negotiators who adopt a "tough" stance and project a competitive image are most likely to "create" an opponent who, through clever strategic misrepresentation, hurts rather than helps them. Projecting a competitive image might work better when one's counterpart is concerned with his or her reputation, but it is probably not advisable to use this approach when dealing with pro-socially motivated counterparts. It may be better and easier to avoid projecting a competitive image and, instead, approach one's counterpart with cautious cooperativeness.
Appendix A  The Computer Screen Participants Saw when Providing Information

Appendix B  Hypothetical Patterns of Information Given to a Cooperative (Left Panel) or Competitive (Right Panel) Other

Appendix C  Norm Data, Item Statistics and t-Test Results for the Lennox and Wolfe (1984) Revised Self Monitoring Scale (RS-M) and the Subscales Ability to Modify Self-Presentation (RS-M-AMSP) and Sensitivity to the Expressive Behavior of Others (RS-M-SEBO)

Appendix D  Means, Standard Deviations, Reliabilities and Intercorrelations for the Revised Self-Monitoring Scale (RS-M; Lennox & Wolfe, 1984), the subscales Ability to Modify Self-Presentation (RS-M-AMSP) and Sensitivity to the Expressive Behavior of Others (RS-M-SEBO), and the Self-Monitoring Scale (Snyder, 1974)
Appendix A  The Computer Screen Participants Saw when Providing Information

Issue A

What information do you send to the other? How many point do you get in cell xA?

(Click on the number of your choice. Later, you can still change your choice.)

| -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|-----|-----|-----|----|----|----|----|----|----|----|----|----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Note: Translated from Dutch. Once a participant entered a number (or question mark) in the xA cell of the Communication Screen, a new question prompted the participant to enter a number in cell yA, and so on until all cells were filled and the "send" function be used.
Note. The hypothetical patterns actually resemble what was found for the "direction of deceit" measures taken in Expt. 1 and 3 of Chapter 3 (see also Figure 3.1).
### Appendix C

**Norm Data, Item Statistics and t-Test Results for the Lennox and Wolfe (1984) Revised Self Monitoring Scale (RS-M) and the Subscales Ability to Modify Self-Presentation (RS-M-AMSP) and Sensitivity to the Expressive Behavior of Others (RS-M-SEBO)**

<table>
<thead>
<tr>
<th>Item* / Subscale</th>
<th>Complete Sample</th>
<th>M</th>
<th>SD</th>
<th>r with subcale</th>
<th>r with RS-M scale</th>
<th>M</th>
<th>SD</th>
<th>M</th>
<th>SD</th>
<th>t*</th>
</tr>
</thead>
<tbody>
<tr>
<td>RS-M scale (alpha = .81)</td>
<td></td>
<td>41.16</td>
<td>7.16</td>
<td>-</td>
<td>-</td>
<td>40.46</td>
<td>10.02</td>
<td>41.41</td>
<td>5.82</td>
<td>-0.47*</td>
</tr>
<tr>
<td>RS-M-AMSP subscale (alpha = .78)</td>
<td></td>
<td>21.39</td>
<td>4.60</td>
<td>-</td>
<td>-</td>
<td>21.32</td>
<td>6.00</td>
<td>21.41</td>
<td>4.01</td>
<td>-0.09</td>
</tr>
<tr>
<td>RS-M-SEBO subscale (alpha = .75)</td>
<td></td>
<td>19.77</td>
<td>3.98</td>
<td>-</td>
<td>-</td>
<td>19.14</td>
<td>5.35</td>
<td>20.00</td>
<td>3.34</td>
<td>-0.79*</td>
</tr>
</tbody>
</table>

**Ability to Modify Self-Presentation subscale**

1. Ik kan mijn gedrag in sociale situaties veranderen wanneer ik voel dat dat nodig is. [In social situations, I have the ability to alter my behavior if I feel that something else is called for.]

   - M: 3.78, SD: 0.85, r with subcale: .72***, r with RS-M scale: .65***

2. Ik kan zelf bepalen hoe ik op mensen overkom, afhankelijk van de indruk die ik wil maken. [I have the ability to control the way I come across to people, depending on the impression I wish to give them.]

   - M: 2.91, SD: 1.09, r with subcale: .75***, r with RS-M scale: .63***

3. Als ik het gevoel heb dat ik geen goede indruk maak dan ben ik goed in staat om dat te veranderen. [When I feel that the image I am portraying isn’t working, I can readily change it to something that does.]

   - M: 2.74, SD: 1.02, r with subcale: .67***, r with RS-M scale: .67***

(continues)
### Appendix C (continued)

<table>
<thead>
<tr>
<th>9. Ik vind het moeilijk om mijn gedrag aan te passen aan verschillende personen en situaties. [I have trouble changing my behavior to suit different people and different situations.] (R)</th>
<th>3.49</th>
<th>0.97</th>
<th>.61***</th>
<th>.48***</th>
<th>3.57</th>
<th>1.10</th>
<th>3.45</th>
<th>0.92</th>
<th>0.55</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. Ik kan mijn gedrag aan de vereisten van elke willekeurige situatie aanpassen. [I have found that I can adjust my behavior to meet the requirements of any situation I find myself in.]</td>
<td>2.90</td>
<td>0.94</td>
<td>.68***</td>
<td>.66***</td>
<td>2.71</td>
<td>0.94</td>
<td>2.97</td>
<td>0.94</td>
<td>-1.24</td>
</tr>
<tr>
<td>12. Ik heb er moeite mee om mij beter voor te doen dan ik ben, ook al kan dat voordelig voor me zijn. [Even when it might be to my advantage, I have difficulty putting up a good front.] (R)</td>
<td>2.70</td>
<td>1.16</td>
<td>.57***</td>
<td>.37***</td>
<td>2.39</td>
<td>1.29</td>
<td>2.27</td>
<td>1.12</td>
<td>0.49</td>
</tr>
<tr>
<td>13. Zodra ik weet wat er in een bepaalde situatie vereist is, kan ik mijn gedrag daarop aanpassen. [Once I know what the situation calls for, it’s easy for me to regulate my actions accordingly.]</td>
<td>3.27</td>
<td>0.85</td>
<td>.71***</td>
<td>.63***</td>
<td>3.14</td>
<td>1.04</td>
<td>3.32</td>
<td>0.77</td>
<td>-0.94</td>
</tr>
</tbody>
</table>

**Sensitivity to the Expressive Behavior of Others subscale**

<table>
<thead>
<tr>
<th>2. Ik kan vaak de emoties van anderen aflezen. [I am often able to read people’s true emotions correctly through their eyes.]</th>
<th>3.75</th>
<th>0.75</th>
<th>.75***</th>
<th>.67***</th>
<th>3.61</th>
<th>1.03</th>
<th>3.80</th>
<th>0.62</th>
<th>-0.93*</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Ik ben gevoelig voor zelfs de kleinste verandering in iemands gezichtuitdrukking als ik me zo iemand in gesprek ben. [In conversations, I am sensitive to even the slightest change in the facial expression of the person I’m conversing with.]</td>
<td>2.91</td>
<td>1.22</td>
<td>.63***</td>
<td>.43***</td>
<td>2.79</td>
<td>1.32</td>
<td>2.96</td>
<td>1.19</td>
<td>-0.64</td>
</tr>
</tbody>
</table>

(continues)
### Appendix C (continued)

<table>
<thead>
<tr>
<th>Item* / Subscale</th>
<th>Complete Sample</th>
<th>Males</th>
<th>Females</th>
<th>t tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Mijn intuïtie laat me zelden in de steek als het</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>gaat om het aanvoelen van de emoties en beweegredenen van anderen. [My</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>powers of intuition are quite good when it comes to understanding others’</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>emotions and motives.]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Ik heb het doorgaans snel door als anderen een grap ongepast vinden, ook</td>
<td>3.45</td>
<td>1.15</td>
<td>3.51</td>
<td>-1.08</td>
</tr>
<tr>
<td>al lachen ze overtuigend. [I can usually tell when others consider a joke</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>to be bad taste, even though they may laugh convincingly.]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Als ik iets zeg wat ongepast is, dan kan ik dat aan iemands ogen zien.</td>
<td>3.49</td>
<td>1.37</td>
<td>3.59</td>
<td>-1.36†</td>
</tr>
<tr>
<td>[I can usually tell when I’ve said something inappropriate by reading it</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in the listener’s eyes.]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Als iemand tegen mij liegt, zie ik dat meestal meteen aan zijn of haar</td>
<td>2.89</td>
<td>1.17</td>
<td>2.93</td>
<td>-0.61</td>
</tr>
<tr>
<td>uitdrukking. [If someone is lying to me, I usually know it at once from</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>that person’s manner of expression.]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. *Items are scored on scales from 0 = helemaal niet van toepassing [Certainly, always false] to 5 = helemaal van toepassing [Certainly, always true]. High scores indicate high self-monitoring. R = reverse-scored items (9 and 12) recoded prior to analyses. †all df = 101, unless noted otherwise; all t-tests are non-significant. ‡df = 34.04. ¶df = 35.14. ‡‡df = 34.44. ‡‡‡df = 33.31. ***p < .001.
**Appendix D**  
*Means, Standard Deviations, Reliabilities and Intercorrelations for the Revised Self-Monitoring Scale (RS-M; Lennox & Wolfe, 1984), the subscales Ability to Modify Self-Presentation (RS-M-AMSP) and Sensitivity to the Expressive Behavior of Others (RS-M-SEBO), and the Self-Monitoring Scale (Snyder, 1974)*

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Revised Self-Monitoring Scale (RS-M) – complete scale</td>
<td>41.16</td>
<td>7.16</td>
<td>.81</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. RS-M-AMSP subscale</td>
<td>21.39</td>
<td>4.60</td>
<td>.86***</td>
<td>.78</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. RS-M-SEBO subscale</td>
<td>19.77</td>
<td>3.98</td>
<td>.81***</td>
<td>.39***</td>
<td>.75</td>
<td></td>
</tr>
<tr>
<td>4. Self-Monitoring Scale</td>
<td>12.77</td>
<td>3.56</td>
<td>.40***</td>
<td>.57***</td>
<td>.06</td>
<td>.63</td>
</tr>
</tbody>
</table>

*Note.  N = 103. *** p < .001. Numbers on the diagonal are scale reliabilities (Cronbach’s alpha).*

In Hoofdstuk 1 geef ik, naast een overzicht van bestaand sociaal-psychologisch, forensisch, en organisatiepsychologisch onderzoek naar misleiding, een overzicht van de definities van liegen, bedriegen en misleiden, zoals ze in de sociale wetenschappen en de filosofie gebruikelijk zijn, en beschrijf ik verschillende systemen die gebruikt worden om leugens te classificeren. Meestal wordt er een onderscheid gemaakt tussen omissies, overdrijvingen, en regelrechte leugens. Omissies, dat wil zeggen het bevestigen van een verkeerde aannames of impressie door niets te zeggen, zijn een passieve vorm van liegen. In het geval van overdrijvingen en regelrechte leugens of misleiding vertelt de leugenaar actief iets waarvan hij of zij weet dat het niet waar is, door of te overdrijven, of iets helemaal te verzinnen. In dit promotieonderzoek heb ik het alleen over actieve misleiding.

In Hoofdstuk 1 wordt duidelijk dat er Weinig onderzocht is welke

In Hoofdstuk 2 geef ik een overzicht van paradigma's die in het onderzoek naar liegen en bedriegen vaak toegepast werden, zoals observatie- en dagboekmethodes, experimentele opzetten waarin proefpersonen geïnstrueerd werden om wel of niet te liegen, scenario studies, experimentele onderhandelingen en speltheoretische opzetten zoals het Prisoner's Dilemma en Ultimatum Bargaining. Ik beschrijf voorbeelden van onderzoeken die het betreffende paradigma gebruikt hebben en bediscussieer de voor- en nadelen van elke benadering. Vervolgens beschrijf ik het informatie-verstrekkingsspel (Information Provision Game). Het informatie-verstrekkingsspel is het paradigma dat ik ontwikkeld heb en dat in vijf van de zeven gerapporteerde experimenten is toegepast. In het informatie-verstrekkingsspel wordt proefpersonen verteld dat ze via de computer met een andere proefpersoon een beslissingsspel spelen. Een speler, de "beslisser", neemt daarbij de beslissing en bepaalt zo de uitkomsten voor zichzelf en voor de andere speler. Echter, de beslisser weet zogenaamd alleen maar wat deze beslissing voor
hem- of haarzelf betekent. Hij of zij weet dus niet wat de gevolgen van zijn of haar beslissing voor de andere speler zijn. Deze andere speler, de "informatie verstrekker", kan aan de beslisser een boodschap sturen en daarin informatie over zijn of haar voorkeuren geven. In de praktijk krijgt elke deelnemer de rol van informatie verstrekker toegewezen. In dit paradigm kunnen allerlei factoren gemanipuleerd worden, bijvoorbeeld de persoonlijkheid van de beslisser (bijv. Experimenten 1, 3, en 4 in Hoofdstuk 3), de structuur van de beslissingstaak (Experiment 1 in Hoofdstuk 3), of de keuzes van de proefpersoon wel of niet geobserveerd worden (Experiment 2 en 3 in Hoofdstuk 4) en wat het belang van de uitkomst voor beide partijen is (Experiment 2 in Hoofdstuk 3). De belangrijkste afhankelijke meting is de informatie die proefpersonen aan de beslisser sturen: Verstrekken proefpersonen eerlijke informatie of misrepresenteren ze hun belangen?

In Hoofdstuk 3 rapporteer ik vier experimenten waarin de invloed van eigen en andermans sociale waarde-oriëntatie op het verstrekken van misleidende informatie en de motieven daarachter onderzocht worden. In het eerste experiment speelden proefpersonen het hierboven beschreven informatie-verstrekkingsspel, waarbij gemanipuleerd werd of ze een coöperatieve of een competitieve tegenstander verwachtten. Aangetoond wordt dat de neiging van mensen om eerlijk te zijn of te liegen afhangt van hun verwachting over het motivationele doel van de ander. Tegen een coöperatieve ander waren ze open en eerlijk en deden geen poging om de ander te misleiden. Tegen een competitieve tegenstander daarentegen logen ze en stelden ze hun voorkeuren zodanig voor dat andermans beslissing vervolgens goed uit zou pakken voor henzelf en slecht voor de beslisser.

Het tweede experiment onderzocht de vraag waarom mensen een competitieve tegenstander misleiden. Door de uitkomst van het spel wel of niet belangrijk te maken voor de proefpersoon konden angst en hebzucht als motivatie om te liegen worden onderzocht. Naar aanleiding van recent onderzoek naar strafgedrag (Carlsmith, Darley, & Robinson, 2002) werd verder getoetst of de wens om te straffen ("punitive sentiment") een motief was om tegen een competitieve ander te liegen. Punitive sentiment zou een grotere rol moeten spelen als de uitkomsten voor de ander belangrijk zijn dan als ze niet belangrijk zijn. Het bleek dat het (minder) geven van accurate informatie gemotiveerd werd door hebzucht en angst, en dat het (meer) geven van inaccurate informatie gemotiveerd werd door hebzucht.
Hebzucht blijkt mensen er dus toe aan te zetten om minder accurate en meer inaccurate informatie te geven. Angst, daarentegen, was alleen een motief om in mindere mate informatie prijs te geven. De wens om te straffen was weliswaar negatief gecorreleerd met het geven van accurate informatie, en positief met het geven van inaccurate informatie, maar bleek geen reden om meer of minder misleidende informatie te geven. Een mogelijke verklaring hiervoor is dat punitive sentiment niet door situationele manipulaties zoals het al dan niet belangrijk maken van punten uit een beslissingsspil te manipuleren is, maar dat de wens om te straffen voor sommige mensen een sterker motief is dan voor andere.


In Experiment 3 werd d.m.v. de "decomposed game measure" (Kuhlman & Marshello, 1975) de sociale waarde-oriëntatie gemeten, voordat proefpersonen, zoals in Experiment 1, het informatie-verstrekkingsspil speelden. De resultaten van Experiment 1 werden gerepliceerd: Proefpersonen waren open en eerlijk tegen een coöperatieve ander, terwijl ze een competitieve ander strategisch misleidden. Zoals voorspeld was dit patroon sterker voor individuen met een pro-sociale waarde-oriëntatie dan voor individuen met een egoïstische waarde-oriëntatie.

De resultaten van de Experimenten 1 tot en met 3 komen voort uit labexperimenten die het informatie-verstrekkingsspil toepassen. Het informatie-verstrekkingsspil is echter een behoorlijk abstracte taak. Om aan te tonen dat bevindingen niet beperkt zijn tot het gedrag van psychologiestudenten tijdens experimenteel onderzoek en dat de gevonden gedragseffecten meer zijn dan het resultaat van gamesmanship, werden de hoofdhypothesen uit experiment 3 in een geheel ander paradigma getest. In de trein en op de markt werden mensen gevraagd een vragenlijst in te vullen. Ze moesten zich inleven in het scenario dat ze hun auto
zouden verkopen. Het scenario bood meerdere mogelijkheden om tegen de potentiële koper, die of als coöperatief of als competitief persoon beschreven werd, te liegen. De bevindingen uit de labexperimenten bevestigend, werd wederom gevonden dat niet of nauwelijks tegen een coöperatieve ander gelogen werd, maar wel tegen een competitieve ander en dat dit patroon sterker was voor mensen met een pro-sociale waarde-oriëntatie.

Terwijl in Hoofdstuk 3 factoren onderzocht worden die misleiding bevorderen, staat in Hoofdstuk 4 een factor centraal die mensen er juist van weerhoudt om te liegen, namelijk de zorg om de eigen reputatie. In Experiment 1 en 2 sturen proefpersonen een boodschap, waarbij het voor ze zelf gunstig is om te liegen. Er wordt daarbij gemanipuleerd (1) of ze dit doen zonder dat iemand hun ongedeelde informatie kent, (2) of ze geobserveerd worden, maar de observatie verder geen gevolgen voor ze heeft, of (3) of ze geobserveerd worden en het oordeel van de observatoren wel degelijk gevolgen voor hen kan hebben. Verondersteld wordt tevens dat in de eerste conditie de zorg om de eigen reputatie geen rol zou spelen en dus in deze conditie het meeste lieggedrag geobserveerd zou moeten worden. Het economische model van menselijk gedrag zou veronderstellen dat mensen zich alleen zorgen maken om hun reputatie, als dit materiële gevolgen kan hebben. Uit het economische model wordt dan ook de hypothese afgeleid dat in de derde conditie minder gelogen wordt dan in de eerste twee. Het sociaal-psychologische model, daarentegen, veronderstelt dat het wel degelijk een verschil maakt of gedrag al dan niet geobserveerd wordt. Uit het sociaal-psychologische model wordt de alternatieve hypothese afgeleid dat in beide condities waarin observatie plaatsvindt (2 en 3) minder gelogen zou worden dan in de controle conditie.

In Experiment 1 werden deze voorspellingen in een scenario-onderzoek getoetst. Studenten stelden zich voor dat ze samen met iemand anders een lot bezaten, en dat zij wel wisten dat er een prijs van 100 gulden op het lot was gevallen, iets wat de andere eigenaar van het lot niet wist. Zoals het sociaal-psychologische model voorspelt, waren mensen tamelijk eerlijk wanneer ze dachten dat ze geobserveerd werden, ongeacht of deze observatie verdere economische gevolgen had of niet. Wanneer ze dachten dat ze niet geobserveerd werden, beweerden ze dat er gemiddeld ongeveer 50 gulden op het lot was gevallen.

Experiment 2 replicaert deze bevinding met gebruik van het informatie-
verstrekkingspel. Proefpersonen gaven meer eerlijke informatie wanneer een slechte reputatie economische gevolgen voor ze had, en ze gaven minder oneerlijke informatie zodra ze dachten dat ze geobserveerd werden. Hieruit wordt geconcludeerd dat de aanwezigheid van een publiek voldoende kan zijn om mensen volgens een impliciete norm van eerlijkheid te laten handelen. Zorg om de eigen reputatie houdt in dat men een goede indruk op het publiek wil maken en is dus gerelateerd aan het persoonlijkheidskenmerk *self-monitoring* – de gevoeligheid voor de verwachtingen van een publiek en het goed kunnen aanpassen van gedrag aan de eisen van de situatie (Lennox & Wolfe, 1984; Snyder, 1974). In Experiment 3 wordt daarom voorspeld dat de effecten die in Experimenten 1 en 2 gevonden werden sterker zijn voor mensen die hoog scoren op de persoonlijkheidseigenschap self-monitoring. Proefpersonen speelden het informatie-verstrekkingspel zoals in Experiment 2, en er werd hen verteld dat of niemand hun keuzes zou zien, of dat een publiek hen observeerde, zonder dat dit economische gevolgen zou hebben. De resultaten replicerden Experiment 2, omdat wederom mensen minder logen wanneer ze geobserveerd werden dan wanneer ze niet geobserveerd werden. Zoals verwacht was dit effect sterker voor mensen die hoog scoorden op self-monitoring. Dit laat, ten eerste, zien dat de zorg om de eigen reputatie een belangrijke reden is om van misleiding af te zien. Ten tweede komt naar voren dat zelfs wanneer een slechte reputatie geen (economische) gevolgen heeft, mensen toch uit zorg om hun reputatie minder liegen. Het blijkt dat geobserveerd worden voldoet om uit zorg om de eigen reputatie eerlijker te zijn.

In **Hoofdstuk 5** wordt een overzicht van de resultaten van dit onderzoek gegeven en worden sterke en zwakke punten en implicaties voor theorie en vervolgonderzoek bediscussieerd. Onder andere ga ik in op persoonlijkheidsverschillen, zoals Machiavellisme, in de mate en soort misleiding die mensen toepassen wanneer zij een competitieve tegenstander treffen. Daarnaast wordt ingegaan op de vraag of het vertoonde gedrag in de zeven experimenten van dit proefschrift ook daadwerkelijk de "gewenste" effecten heeft: Baseren "beslissers" hun gedrag ook echt op de door de proefpersonen gegeven informatie, met als gevolg dat de "beslisser" slechte uitkomsten verwerft en de proefpersoon het maximale uit de situatie heeft weten te halen?


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Wolfgang Steinel was born in Nuremberg, Germany, on December 14, 1971 – that self-same year, by a remarkable coincidence, the city celebrated the 500th birthday of her greatest son, the artist and mathematician Albrecht Dürer. And, like the genius of the Northern Renaissance who visited the Netherlands twice (in 1490, Dürer was attracted by the works of the Flemish painters, and in 1520, he met Erasmus of Rotterdam), the author of this dissertation traveled to the Netherlands to broaden his horizons and increase his expertise.

Wolfgang first visited Amsterdam in 1990, while still a high school student at Gymnasium Roth. Fascinated by the paintings of the Dutch Golden Age, he found extra inspiration in the works of his (almost) name-fellow Jan Steen, which was a good example of how his future office could be organized.

Wolfgang came back to Amsterdam as an exchange student five years later, while studying psychology and political sciences at the Friedrich-Alexander University in Erlangen. Academics like Prof. Abele-Brehm and Prof. Oswald raised his interest in social psychology and in research in general, and the Erasmus program gave him the chance to spend six months at the Department of Social Psychology at the University of Amsterdam, and to work together with Prof. van der Pligt and Marcel Zeelenberg.

After finishing his studies, Wolfgang came back to Amsterdam for the third time in July 1999. He returned to the University of Amsterdam to start a PhD project at the Department of Work and Organizational Psychology under the supervision of Prof. De Dreu, the result of which is this book. Having finished up this thesis, he took up a post as an assistant professor at the same department.
The "Kurt Lewin Institute Dissertation Series" started in 1997. Since 2002 the following dissertations have been published:

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1. The title of this thesis is not misleading.

2. De sociale wetenschappen hebben zich meer beziggehouden met de vraag of het ethisch is om proefpersonen te misleiden, dan te onderzoeken wanneer en hoe mensen zelf liegen en misleiden (zie ook Hoofdstuk 1).

3. Self-report studies over liegen en misleiden zijn problematisch (zie Hoofdstuk 2). In een recente enquête gaf 12% van de ondervraagde Nederlanders aan dat ze tegen de Belastingdienst zouden liegen. Het Europese gemiddelde was 39%. Zijn Nederlanders nu de eerlijkste of juist de oneerlijkste Europeanen?

4. Het Information Provision Game, dat voor dit proefschrift is ontwikkeld, maakt het mogelijk om te onderzoeken in welke mate, en op welke manier, mensen anderen misleiden (zie Hoofdstuk 2).

5. De verleden tijd van psycholiegen is niet psychologen.

6. In dit proefschrift worden zeven experimenten gerapporteerd, met in totaal 813 deelnemers. Slechts één van hen (0,123%) vroeg aan de proefleider of ze écht mocht liegen. Dit suggereert dat het verstrekken van inaccurate informatie een erg voor de hand liggende strategie is.

7. In het alledaagse taalgebruik associëren we pro-sociaal en coöperatief met eerlijk en egoïstisch met oneerlijk. Dit proefschrift ondergraaf deze intuïtie en laat zien dat pro-sociale mensen zelfs oneerlijker kunnen zijn dan egoïstische mensen (zie Hoofdstuk 3).

8. Het is in eerste instantie de verwachting van de mate van coöperatie dan wel competitie van de opponent die bepaalt of men lies, en pas in tweede instantie de eigen coöperatieve dan wel competitieve instelling (zie Hoofdstuk 3).

9. De recente voorbeelden van fraude en misleiding bij bedrijven zoals Ahold en Enron suggereren dat directeuren aannemen dat de wereld competitief is en anderen er vooral op uit zijn hen een loer te draaien.

10. Aangezien mensen minder gaan liegen zodra ze geobserveerd worden (zie Hoofdstuk 4), zou publieke controle een effectief middel tegen fraude kunnen zijn. Daarbij moet echter wel rekening worden gehouden met de mogelijkheid dat controle mensen niet alleen aanzet om minder te liegen, maar ook om beter te liegen, d.w.z. dusdanig dat ze daarbij geloofwaardiger overkomen.
