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**Beyond procedure's content –  
Cognitive subjective experiences in  
procedural justice judgments**

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# 1 INTRODUCTION

Justice and its perception by individuals is a central and, at the same time, very complex social phenomenon that shapes human behavior in the social context. Social perception, affect, attitude, and behavior are known to be strongly influenced by justice judgments (Folger, 1984). Justice judgments therefore play a major role in intimate relationships (Lerner & Mikula, 1994), in organizations (Cohen-Charash & Spector, 2001; Colquitt, Conlon, Wesson, Porter, & Ng, 2001), in politics (Tyler, Rasinski, & McGraw, 1985), in legal (Lind, Kulik, Ambrose, & De Vera Park, 1993) as well as economic settings (Fehr & Schmidt, 1999; Kahneman, Knetsch, & Thaler, 1986a), and in other domains of human life.

Despite this vast evidence corroborating the relevance of justice judgments and an impressive literature on *why* justice judgments are so relevant (e.g., Deutsch, 1985; Tyler & Blader, 2003; Tyler & Lind, 1992; Van den Bos & Lind, 2002), considerably less is known about *how* these judgments are formed (Van den Bos & Lind, 2002). Moreover, most of the existing research on the formation of justice judgments has focused on the content (characteristics of the process, e.g., whether the person was granted voice in a procedure or not) accessible at the time of judgment (e.g., Ambrose & Kulik, 2001; Folger & Cropanzano, 2001; Leventhal, 1980; Messick, 1993). This exclusive focus on accessible content information is surprising given the fact that subjective experiences, such as current mood states, bodily feelings, or cognitive experiences like surprise or accessibility experiences, have long been demonstrated to influence judgment and decision-making, as well (e.g., Clore, 1992). Indeed, some authors (e.g., Taylor, 2001) even suggest that subjective experiences may impact judgment and decision-making in conditions of everyday life to a stronger degree than accessible content information does (albeit individuals are always able to rationalize experience-based judgments afterwards). Given the central role of subjective experiences, the

current work is to suggest and demonstrate that justice judgments may be formed upon cognitive subjective experiences, such as the ease or difficulty with which relevant accessible content information comes to mind. This hypothesis will be tested in all five experiments presented in this work.

Besides the examination of the influence of the accessibility experience on procedural justice judgments<sup>1</sup>, this work also aims to examine the moderating role of uncertainty in the reliance on the accessibility experience in justice judgments. Uncertainty has already been identified as a key factor in the understanding of the concept of justice (see Lind & Van den Bos, 2002; Van den Bos & Lind, 2002). Personal uncertainty sensitizes individuals for procedural and distributional issues (e.g., De Cremer & Sedikides, 2005; Van den Bos, 2001). In line with this research and the current conceptions of judgment and attitude formation (e.g., Chen & Chaiken, 1999; Petty & Cacioppo, 1986), it is assumed that due to the higher intensity of information processing in situations associated with personal uncertainty, the influence of the accessibility experience on the justice judgment should be reduced due to the heuristic nature of this information. This finding would not only be of great interest to the research on the formation of justice judgments but also to the research on subjective experiences. While uncertainty's moderating role on the accessibility experience has never

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<sup>1</sup> This dissertation focuses on the formation of procedural justice judgments because the complexity of these judgments makes it easy to examine the differential use of the content and the accessibility experience. Note, however, that the basic mechanisms proposed should also hold for other facets of justice judgments (e.g., distributive justice, see Adams, 1965; or interactional justice, see Bies & Moag, 1986). We will come back to this in section 4.3.1 (General Discussion).

been shown, it is a possible moderator in many other judgment domains. The Experiments 2-5 examined this potential moderation in detail.

The main focus of this work is the examination of the accessibility experience as heuristic information in the formation of the justice judgment and the identification of uncertainty as a potential moderator of this influence. However, this work also aims to demonstrate potential applications of such findings for basic and applied research. Therefore, the influence of accessibility experiences on the formation of justice expectations and subsequent behavior was also examined. Experiments 4 and 5 are the first experimental examinations of the hypothesis that expectations of low procedural justice lead individuals to be less cooperative in negotiation situations. Besides their implications for basic research on justice expectations, these experiments also demonstrate the value of the experimental paradigm for applied settings. New tools to foster cooperation in exchange situations in a very unobtrusive way could be one potential outcome of this line of research.

The following Chapter 2 will explicate these ideas in more detail. First, a short historic overview will introduce the different facets of the justice judgment (2.1). Following this, a closer look is taken on the formation of procedural justice judgments (2.2). Then, the influences of accessibility experiences on judgments and their potential role in procedural justice judgments are elaborated (2.3). The role of uncertainty in the formation and usage of justice judgments is the main focus of section 2.3.3. Finally, an overview of research on procedural justice and cooperative behavior is given (2.4). Hereby, I specially focus on the role of justice expectations in cooperative behavior (2.4.2).

In Chapter 3, the empirical tests of the asserted hypotheses are presented. Experiment 1 was to examine the role of the accessibility experience in the formation of justice judgments. Experiment 2 introduced dispositional self-uncertainty as a potential moderator of the use of

accessibility experiences in justice judgments. Experiment 3 was to replicate the findings of Experiment 2 with a manipulation of uncertainty salience. In Experiment 4, the influences of accessibility experiences on justice expectations and cooperation behavior were examined. Experiment 5 was to replicate the findings of Experiment 4 in a complex negotiation situation. The findings of the five experiments will be discussed in Chapter 4. Implications for the research on the formation of procedural justice judgments as well as on accessibility experiences are given. Finally, a short outlook on potential applications in basic research as well as in applied contexts like conflict resolution or marketing are given.

## 2 THEORETICAL BACKGROUND

### 2.1 Justice Judgments

The question of what is just and what is unjust has been on human minds for many centuries. Remarkably, social sciences did not investigate these questions until the mid of the last century (Adams, 1965; Homans, 1961). This chapter will give a short overview of the social justice research in the area of social psychology and neighboring fields. Hereby, the different facets<sup>2</sup> of justice judgments will be introduced. As already mentioned, this work mainly focuses on the formation and influences on the procedural justice judgments. Therefore, the formation of procedural justice judgments will be discussed in detail in the second part of this chapter.

#### *2.1.1 The different facets of the justice judgments in their historic chronology*

##### *2.1.1.1 Distributive justice*

As mentioned above, researchers in the social sciences started in the midst of the last century to have a closer look at the phenomenon of what individuals perceive as just or

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<sup>2</sup> The word “facet” is used in this work to highlight the ambivalent relationship between the different justice concepts. There are theoretical arguments for an integrative view on the justice judgment (e.g., Cropanzano & Ambrose, 2001; Folger & Cropanzano, 2001). However, there are also theoretical arguments in favor of a differentiation of the concepts because of the distinct underlying psychological processes (for a review, see Colquitt, 2001). Empirically, it has been shown that the different facets of the justice judgment do highly correlate, while still being distinguishable and showing different influences on individuals’ reactions (Colquitt et al. 2001). This controversy will be discussed in 2.1.1.4.

unjust.<sup>3</sup> In the beginning, they hereby focused on individuals' perceptions of outcomes. These judgments were later coined to be about *distributive justice*. A distributive justice judgment can be seen as a judgment about an allocation state of an outcome consistent with the goals of a particular situation, such as maximizing productivity or improving cooperation (Deutsch, 1975; Leventhal, 1976a). Perhaps the first study on perceived distributive justice (without actually using this term) was a survey on promotion satisfaction in the U.S. Army (Stouffer, Suchman, DeVinney, Star, & Williams, 1949).<sup>4</sup> They compared the promotion satisfaction of individuals in the Military Police, in which promotions were few, to those in the Army Air

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3 In the following, the terms “justice” and “fairness” will be used interchangeably. Like other authors (e.g., Van den Bos & Lind, 2002), it is fully acknowledged here that the two constructs are not identical. The justice concept has indeed stronger normative connotations and the term “social justice” is often used in the context of advocating social change or reallocation of resources. In this paper, however, the terms “justice” and “fairness” always refer to a subjective judgment of an individual. Since it is known from many studies that the assessments of “justice” and “fairness” highly correlate (e.g., Van den Bos, 2001a, 2003, or see the method sections in this work), it seems safe to assume that individuals rarely distinguish between the two constructs in their everyday-life. Therefore, these terms are used interchangeably in this special context. Note that from the viewpoint of the author, all judgments referred to in this work are entirely subjective in nature and do not imply any normative character. These judgments may correspond with philosophical principles and may be socially shared, but such consensuses should not be interpreted as objectivity or universality of these judgments (see also Mikula & Wenzel, 2000).

<sup>4</sup> Outcome satisfaction and distributive justice are not the same. Therefore, it can be disputed if the study of Stouffer and colleagues is really on justice perceptions. One can see a negative outcome as entirely just, while being still dissatisfied with this outcome (see also, Van den Bos, Wilke, Lind, & Vermunt, 1998). Despite this, the study is presented here because it is the first demonstration of a central finding that was later replicated many times in the context of justice research.

Corps, in which promotions were frequent. Surprisingly, the promotion satisfaction of the individuals in the Military Police was higher than in the Army Air Corps. This result already gave rise to the assumption that satisfaction with an outcome is *relative* to a *reference point* rather than a static evaluation based on certain principles. In this case, the soldiers focused either on the also slow-rising colleagues in the Military Police or on the also fast-rising colleagues in the Army Air Corps, while the overall promotion-frequency in the army had no impact on the judgment. Sixteen years later, Stacy Adams proposed his seminal *equity theory* (Adams, 1965; for a more detailed overview, see Adams & Freedman, 1976). This theory is able to explain the result of the study by Stouffer and colleagues very elegantly. Based on his own initial work (Adams & Rosenbaum, 1962) and the theorizing of Homans (1961, 1965), Adams proposed the idea that individuals judge the distributive justice from the relation of their effort to gain the outcome (input) and their actual outcome (output) *compared* to the relation for similar others. Adams assumed that individuals strive for situations where no differences between the two ratios are given. If this is not the case, individuals are assumed to try to adapt their ratio to the ratio of comparable others. This theory bears heavy influences of social comparison theory (Festinger, 1954), as well as cognitive dissonance theory (Festinger, 1957). It also resembles many ideas of the original social exchange theory framework (Blau, 1964). Large interest in this new field consequently caused a lot of subsequent research (for reviews, see Adams & Freedman, 1976; Greenberg, 1982). While being criticized in many ways, the general idea of a social and relative comparison process prevailed and was supported by following research (Greenberg, 1982). So, for example, Greenberg (1988) found in a field-experiment that overpayment (in the form of more office space than normally given to a employee of this status) led to higher productivity of the affected individuals. Presumably, the individuals tried to compensate for their higher output that was leading to a disequilibrium of their input-output-ratio with their coworkers' ratios. In the years to follow

the initial presentation of the equity theory, the field of distributive justice developed and is today still further refining the predictions of individual's perception of the outcome (e.g., Deutsch, 1985). In many ways, the field has outgrown the initial concept of Adams (1965). While Adams advocated that individuals use the *equity* rule to determine the fairness of an outcome, several other allocation rules such as *need* and *equality* that are evoked by personal motives or situational contexts have been identified in the meanwhile (Kabanoff, 1991; Leventhal, 1976a). Nevertheless, all these allocation rules are still seen as comparison standards in a subjective and relative social comparison process.

While the equity theory and the succeeding research gained impressive insight in the ways distributive justice judgments are formed, two very simple economic experiments demonstrate the astonishing power these judgments have on human behavior. A good demonstration of how people *react* to unfair distributions is given in the *ultimatum game* (Güth, Schmittberger, & Schwarze, 1982). In this game, two individuals have to share a certain amount of money given to them by the experimenter (e.g., 10 EUR). Player A has the right to propose how this amount should be shared between the two players. Player B can only decide if he or she agrees with the proposed distribution or not. If Player B agrees, the amount is shared the way player A proposed it. If Player B does not agree, both players receive no money. From the standpoint of pure rationality, Player B should consent to every offer Player A makes that is larger than zero. If nothing is the alternative, every other offer resembles a gain. In the nomenclature of game-theory, *acceptance* is the “dominate strategy” for Player B in the ultimatum game (see Fudenberg & Tirole, 1991). However, empirically, Player B seldom accepts offers of less than 30% of the global amount. This means that individuals rarely accept unfair allocation proposals even when the costs from this behavior are high (see, Güth & Hück, 1997; Kagel, Kim, & Moser, 1996). It can therefore be stated that



individuals often *react* in a manner that enforces distributive justice even when this behavior is costly to them and violates their self-interest (in this example, some participants would lose up to 3 €). An equally drastic demonstration that humans do not only follow norms of distributive justice when they are on the receiving side but also when acting themselves, stems from Kahneman, Knetsch, and Thaler (1986b). They used a modified version of the ultimatum game called the *dictator game* to demonstrate the power of fairness in the economic context. In this game, Player A proposes the distribution of the global amount and Player B has *no* veto power. Self-interest would “dictate” the dictator (Player A) to give as little as possible to Player B, who has no way to enforce norms of distributive justice. However, empirical data does not back this assumption. In the first experiment by Kahneman and colleagues, participants could choose between two options when playing this game anonymously. Option A was a fair 50/50 split and option B was a 90/10 split. Seventy-six percent of the students went for option A. While this study was criticized for methodological issues<sup>5</sup>, more experimentally thorough replications did reveal that the modal offer in most experiments was still at about 30% of the total amount (for a review, see Bolton, Katok, & Zwick, 1998). A considerable part of the participants went for a just distribution even in a situation in which such a behavior is so apparently violating self-interest as in the dictator game.

In sum, individuals seem to judge the fairness of a given distribution in a subjective and relative social comparison process. This judgment has a considerable predictive power for human behavior. Over the last decades, the focus of the research on distributive justice has shifted into economic and sociological research (e.g., Fehr & Schmidt, 1999; Jasso, 1999),

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<sup>5</sup> One of the main issues was the forced choice between two options while this game would easily allow for a continuous behavioral variable. Another issue was the setup of the experiment as lottery in which only 5 % of the participants actually received their share of the 20\$ they were told to split.

with a focus on the formalization of the distributive judgment. Social and organizational psychologists have turned their attention towards other facets of the justice judgment. One reason for this was the fact that distributive justice judgments are often biased in a self-serving way (e.g., Messick & Sentis, 1985; Thompson & Loewenstein, 1992). In the beginning of the eighties, it also got apparent that the perception of certain features of the allocation procedure has a higher impact on individuals' behavior than the distributive justice judgment (Alexander & Ruderman, 1987; Tyler & Caine, 1981). This facet of the justice judgment is called *procedural justice* and is discussed in the next section.

#### 2.1.1.2 *Procedural justice*

In the mid seventies, Thibaut and Walker introduced a new justice judgment named the *procedural justice* judgment (1975, see also Thibaut & Walker, 1978; Thibaut, Walker, La Tour, & Houlden, 1974). The procedural justice judgment is a judgment about how consistent a procedure to determine the allocation of an outcome is with the goals of a particular situation. Thibaut and Walker have originally developed this idea in the context of comparing different court systems. Section 2.1.2 will give a detailed overview of the conceptions how this judgment is formed. For now, only the idea of Thibaut and Walker is of interest that *process* and *decision control* are the main criteria of procedural justice. Thibaut and Walker believed that individuals perceive a process as just if they have the feeling that they can control the decision-making procedure or at least are able to influence it. This basic notion has gained a lot of empirical support. The process control effect, often called *fair process effect* or *voice effect* (e.g., Folger, 1977), is one of the most widely replicated findings in justice literature (for a meta-analytic review, see Colquitt et al. 2001). Individuals show favorable

behaviors and cognitions toward organizations and persons when they perceive the process as fair even when the outcome is negative. This effect has been shown in a wide variety of domains, so for example in the field of organizational justice. Colquitt and colleagues found in a meta-analysis of 183 studies that procedural justice judgments positively influence outcome satisfaction, job satisfaction, organizational commitment, trust, evaluations of authority, organizational citizenship behavior and performance in the work context. In another meta-analysis, Cohen-Charash & Spector (2001) additionally identified effects of procedural justice on positive affect, supervisor satisfaction, extrinsic and intrinsic work motivation, and recommendation intentions. Both meta-analyses reveal that procedural justice also negatively influences negative emotions, withdrawal, turnover and other negative reactions toward organizations. Concerns about procedural justice, however, do not only trigger individuals' reactions to allocation processes. It has also been shown that individuals care about setting up just procedures themselves. So, for example, Greenberg (1987) found that middle managers have a clear understanding of the criteria a fair performance appraisal consists of. Additionally, it has been demonstrated that groups in social dilemma situations intuitively utilize simple coordination rules in order to structure their actions and to achieve a just distribution (Van Dijk & Wilke, 1995; Van Dijk, Wilke, Wilke, & Metman, 1999). When assessing procedural justice simultaneously with distributive justice, the former has been shown to have a higher predictive value of individuals' intentions and attitudes (e.g., Alexander & Ruderman, 1987; Tyler & Caine, 1981). While Thibaut and Walker (1975) focused on controllability as the main characteristic of a fair procedure, Leventhal (1980) conceptualized the procedural justice judgment as an assessment for comparing the actual process to several generalizable rules. He identified six of these rules, which are described in detail in section 2.1.2.2. While the rule-based comparison process drew a lot of attention, other models have also been put forward. Some of these models will be discussed in more

detail in the sections of chapter 2.1.2. Since its first introduction (Thibaut & Walker, 1975), research on procedural justice is thriving in the basic as well as in the applied settings and here especially in the organizational context (for a narrative review, see Cropanzano & Greenberg, 1997; for meta-analytic reviews, see Cohen-Charash & Spector, 2001; Colquitt et al., 2001). This research has shown that the perception of the procedure is an important determinate of how individuals affectively, cognitively and behaviorally react to the distribution of a resource. Additionally, it has been shown that concerns for procedural justice also guide individuals' own actions. However, in the 1980ies, some researchers especially in the organizational context grew dissatisfied with the focus on the formal characteristics of the procedure. They were confident that, beside these formal characteristics, also relational aspects of the procedure influence individuals' justice perceptions.

### 2.1.1.3 *Interactional justice*

Bies and Moag (1986) introduced a third facet of the justice judgment. This facet focuses on the quality of the interpersonal treatment individuals receive in a distribution procedure. Bies and Moag referred to this facet as *interactional justice*. They identified four criteria for interactional justice including *justification* (e.g., explaining a decision), *truthfulness* (e.g., nobody is engaging in the deception of the person), *propriety* (e.g., no improper statements or remarks are made) and *respect* (e.g., being polite to the person). In the following years, studies demonstrated the distinct nature of procedural and interactional justice in predicting individuals' reactions (e.g., Blader & Tyler, 2003; Cropanzano, Prehar, & Chen, 2002; Skarlicki & Folger, 1997). Masterson, Lewis, Goldman, and Taylor (2000) proposed that interactional and procedural justice judgments affect other variables through

different intervening mechanisms. Procedural justice may affect intentions and attitudes by altering the perceptions of the organization while interactional justice may mainly alter the relationship to other individuals (e.g., authority in charge of the allocation process). Greenberg (1990, 1993), however, argues that interactional justice itself consists of two specific facets. The first facet is labeled *interpersonal justice* and is referring to interpersonal effectiveness of the treatment by authorities (or third parties) involved in the execution of the procedure. The second facet is the *informational justice* and is referring to the explanations provided to the individuals. In this judgment facet, the focus lies on the quality of the information why and how procedures are used and why outcomes are distributed in a certain way. With Greenberg's distinction, four different facets of justice are now established and the question rises how many different facets of procedural justice are needed.

#### 2.1.1.4 *How many facets of justice do we need?*

The question of how many independent facets of the justice judgment we need to understand the reactions individuals show towards resource distributions never died down since the introduction of procedural justice. Since procedural and distributive justice are often highly correlated, many researchers argue that individuals do not differentiate between these two facets (e.g., Folger 1987). So, for example, Cropanzano and Ambrose (2001) argue in their "monistic perspective" that the distinction between the two constructs can be of value in some situations but that in most contexts, it is overemphasized. They argue that it is often even very difficult to differentiate between outcome and procedure. So, for example, a change in a distribution procedure to give the participants more control is a change in the procedure and should therefore affect perceived procedural justice. However, for the participants it can also be a part of the outcome since it is influencing all upcoming distributional processes. For

the distinction of procedural and interactional justice, similar arguments were made. Even one of the original “founding fathers” of the interactional justice concept later retracted from the position that interactional justice is a distinct facet of the justice judgment (Tyler & Bies, 1990).

Today, most researchers distinguish between the distributive and procedural justice concepts. However, some researchers (e.g., Cropanzano & Greenberg, 1997) treat interactional justice as a social form of procedural justice while others regard it as distinct facets (for a meta-analytic review of a three factor model of justice, see Cohen-Charash & Spector, 2001). Others, especially in the organizational context, even distinguish all four presented facets (for a meta-analytic review of a four factor model of justice, see Colquitt et al., 2001). There is some evidence that, especially in the organizational context, researchers tend to favor more-factor assessments (for a four-factor-measure of organizational justice, see Colquitt et al., 2001, for some exceptions see e.g., Brockner, Wiesenfeld, & Martin, 1995; Folger & Konovsky, 1989; Skarlicki & Latham, 1997) due to their more differentiated predictions of reactions to distributional issues. In basic research on the formation of justice judgments, mostly distributive and procedural justice are distinguished (e.g., Lind Kanfer, & Earley, 1990; Van den Bos, 2003). For basic research, the separation of outcome and process seems to be sufficient to examine the underlying processes of why people form justice judgments and how they do this. Another trend in justice research is to distinguish types of justice judgments not by their property in the resource allocation but by their psychological function. So, for example, Darley and Pittman (2003) give an overview of the work on *retributive* and *compensatory* justice. These justice judgments focus on how victims or observers view the punishment or the compensation that is imposed on an offender. While, in these kind of judgments, mostly distributive components are in focus, they also have

procedural aspects. These types of justice judgments are not in the focus of the current work. However, in section 2.4.2, another type of these justice judgments namely the *anticipatory injustice* (Shapiro & Kirkman, 2001), will be discussed when I focus on *justice expectations* (Bell, Ryan, & Wiechmann, 2004).

#### 2.1.1.5 Summary and outlook

It has been shown that justice judgments influence affective, cognitive and behavioral reactions of individuals towards resource allocations (Folger, 1984; Cohen-Charash & Spector, 2001). In order to identify the underlying processes, researchers have distinguished different facets of the justice judgment. Distributive justice refers to the perception of the actual allocation decision. Procedural justice focuses on process aspects of the resource allocation. Some researchers further differentiate between the formal aspects of the procedure and interactional justice as an assessment of the interpersonal effectiveness of the agents in charge of the procedure. This construct is further divided into an informational and an interpersonal component. The dispute on the costs and benefits of the different levels of differentiation is still going on. In the following, I will focus on procedural justice judgments and their formation. Procedural justice has received considerable attention by justice researchers, resulting in a wealth of different conceptions of the formation process and an overwhelming empirical evidence for its impact on affective, cognitive and behavioral reactions.

### 2.1.2 *Formation of procedural justice judgments*

In the last section, the different facets of justice judgments were introduced. In this section, the historic and current conceptions of *how* procedural justice judgments are formed are reviewed. This is done in order to develop the argument that cognitive experiences influence the formation of procedural justice judgments. In line with other research (for a detailed discussion, see Gilliland, 1993), interactional characteristics of the justice judgment are hereby seen as a part of the procedural justice judgment. The reader will certainly notice that the target procedures in the experiments in this work involve virtually no interpersonal interaction (Experiment 5 is the only exception). Therefore, the procedural justice judgments in this paper mainly focus on the formal characteristics of the procedure. This was done for reasons of standardization. It does not imply that the accessibility experience does not affect interactional components of the justice judgment. On the contrary, it is strongly assumed that the proposed influence of the accessibility experience on justice judgments does not only hold for the procedural justice judgments but also for other facets. This issue will be discussed in detail in section 4.3.1 (General Discussion).

#### 2.1.2.1 *Control model of Thibaut and Walker*

Thibaut and Walker (1975, see also Thibaut & Walker, 1978; Thibaut et al., 1974) originally conceptualized procedural justice judgments as evaluations of the perceived control a person has over allocation processes and decisions. Their theorizing originally arose from their observations in the courtroom setting. They compared individuals' perceptions about the Anglo-American adversarial legal system to the European inquisitorial system. In order to make the systems more comparable, they divided the conflict resolution into two stages. The



first stage was the process stage (here the information was presented) and the second stage the decision stage.<sup>6</sup> Thibaut and Walker argued that the opponents perceive the Anglo-American adversarial legal system as more fair. Since in both systems the decision-making phase is done by a judge or jury (no control over the decision-making phase for the opponents), the crucial distinction between the systems is the process stage. Here, Thibaut and Walker argued that the Anglo-American system allows the disputants process control. More concretely, they have “voice” in the process. Thus, they can articulate their view on the conflict. They are able to influence the process and perceive this as control. As already mentioned in section 2.1.1.2, this “fair process” or “voice” effect was widely replicated. Thibaut and Walker argued that procedures possess value independently of outcomes. This assumption is well supported by a considerable body of research (e.g., Colquitt et al., 2001). Other aspects of their model are less well supported. Particularly, the assertion that instrumentality (having perceived control of the decision-making process) is the key factor in the procedural justice judgment has been disputed by other researchers (e.g., Lind & Tyler 1988; Tyler & Blader, 2003; Tyler & Lind, 1992). For example, Lind, Kanfer, and Earley (1990) demonstrated that having “voice” in the decision-making process is influencing individuals’ reactions even in the absence of the belief that it is instrumental in affecting the outcome. In this particular case, participants knew that the decision was already made. Nevertheless, having voice had a positive effect on participants’ justice perceptions. Such findings render the idea of Thibaut and Walker that the procedural justice judgment is a simple comparison process of the actual process with the two criteria *process control* (e.g., the ability to voice one’s own arguments during the procedure) and *decision control* (e.g., the ability to influence the outcome itself) as insufficient.

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<sup>6</sup> This distinction is in line with the ideas of the philosopher Rawls (1971) who states that the procedural system that is regulating the distribution and the distribution itself can be separated.

### 2.1.2.2 Allocation preference theory

Thibaut's and Walker's (1975) seminal contribution was to direct the attention to the process and to establish perceived control as one main characteristic of the procedural justice judgment. However, their model can only be seen as a starting point. Their focus on control and the legal setting restricted the applicability of the new justice judgment and did not account for relational and social components of the procedural justice judgment. So, for example, the model does not explicitly state any relative components, where individuals compare their own procedure to the procedure of others. Given the high impact social comparison processes have in distributive justice judgments, this seems unlikely. Leventhal and colleagues (Leventhal, 1980; Leventhal, Karuza, & Fry, 1980) broadened the conception of the procedural justice judgment and explicitly turned their attention to the formation process of the judgment.

Based on the *justice judgment model* (Leventhal, 1976b, 1980), the *allocation preference theory* (Leventhal et al., 1980) is a general model of allocation behavior. Therefore, it makes assumptions about the formation of distributive and procedural justice judgments. However, since its introduction, it has been mostly seen as a model to describe the formation of the procedural justice judgment (Greenberg, 1987).<sup>7</sup> In the allocation preference theory, Leventhal and colleagues assume that

“...judgments of fairness involve contrasting an existing situation to an abstract standard or rule. The individual compares an existing distribution or procedure to that

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<sup>7</sup> Noteworthy is the fact that Leventhal and colleagues (1980) argued that procedural and distributive justice should not be separated, but be seen as parts of the larger phenomenon of resource allocation.

which he believes would be ideally fair in that situation. Perceived fairness existed when the actual distribution or procedure is congruent with the ideal standard” (p. 194).

Here, we see a conceptualization of the procedural justice judgment as a comparison process in which the actual process characteristics are compared to generalizable rules. Leventhal and his colleagues (1980) identified six generalizable rules: The first rule is the *consistency rule* which requires that the procedure is the same for different individuals and over time. The second rule is concerning *bias suppression*. In a fair process, personal interests and preconceptions should be suppressed by the individuals in charge of the distribution procedure. The third rule is the *information accuracy rule*, stating that distribution procedures should be based on the best possible information. A just process should also follow the *correctability rule*. This rule requires the existence of methods for the correction or reversal of a decision. The *representation rule* is implying that important individuals and all subgroups affected by the allocation decision are heard in the process. The sixth rule is the *ethicality rule* that implies that throughout the whole process personal standards of ethicality and moral are upheld. Lind and Tyler (1988) noted that the representation rule subsumes the process and decision control criteria of Thibaut and Walker (1975). Hereby, Leventhal’s allocation preference theory can be seen as an extension of Thibaut and Walker’s conception. Later, Greenberg (1987) named two additional rules: First, the chance to choose the decision-maker and second, a clear identification of the structure of the decision-making power. In the following, other researchers have identified additional, often more domain-specific rules. Gilliland (1993), for example, identified in his extensive review on the determinants and influences of procedural justice in the personnel selection context ten rules that apply to selection procedures. He, however, acknowledged that this list is probably still not complete. Leventhal and colleagues’ model explicitly states that people compare the process characteristics with the set of generalizable rules. The weighting of the different rules in the

overall judgment is assumed to be determined by motivational (e.g., self-interest or conformity) or situational (e.g., role demands) circumstances. Hereby, we see which complexity this conception brought to the formation of the justice judgment. The model and its proposition were largely supported by following research. So, for example, Greenberg (1986) asked middle managers to identify the determinants that they regarded as responsible for a fair performance appraisal. The resulting determinants were consistent with the rules identified by Leventhal and his colleagues. Bauer and colleagues (2001) developed a procedural justice scale for the personnel selection context, based on the ten rules identified by Gilliland (which are basically an extended version of the rules by Leventhal and colleagues). In large parts, they found the proposed factor structure identifying the different procedural rules. In another study of the same research group, weights of the different rules in the global procedural justice judgment indeed varied heavily between the different stages of the selection procedure (e.g., Truxillo, Bauer, & Sanchez, 2001). The model hereby received some empirical support, and the rules identified by Leventhal and colleagues are still assumed to be an essential part of the procedural justice judgment. Therefore, they are integrated in recent attempts to design measures of the justice judgment (e.g., Bauer et al., 2001; Colquitt, 2001). While having its roots in the earlier work of Leventhal on the distributive justice judgment (1976a, 1976b), the allocation preference theory clearly extends the conception of Thibaut and Walker on the procedural justice judgment. The model also immensely broadened the scope of application for the procedural justice construct. Additionally, it is the first attempt to describe procedural justice judgment formation in detail. However, the theoretical and practical value of the model is constrained by its complexity and the lacking identification of the mechanisms underlying the weighting process of the different procedural rules.

### 2.1.2.3 *Group-value model and group engagement model*

Both Thibaut's and Walker's original conception of procedural justice (1975) and, to a somehow lesser extent, allocation preference theory (Leventhal et al., 1980), are what Tyler (1994) called *resource-based* models of justice. Thibaut's and Walker's model entirely focuses on the controllability of process and outcome. In their reasoning, individuals focus on controllability as this maximizes their chance to gain a favorable outcome. For Thibaut and Walker, concerns about justice are triggered by *long-term* self-interest of the individual. This would imply that the concern about justice is purely instrumental. Their conception is strongly influenced by the original ideas of social exchange theory (e.g., Blau, 1964) and led some researchers to assume that individuals' concern about justice would vanish if it collides with self-interest, or, as Walster, Walster and Berscheid (1978) put it: "So long as individuals perceive that they can maximize their outcomes by behaving inequitably, they will do so" (p. 5). There is also some empirical evidence stating that individuals sometimes ignore rules of justice in order to maximize their own outcome (e.g., Greenberg & Cohen, 1982; Steensma & Vermunt, 1991; Vermunt & Steensma, 1991). However, such models struggle with the fact that there is also empirical evidence that individuals often violate their own self-interest in order to archive just procedures and distributions. So, for example, in the empirical tests on the ultimatum and dictator game presented in section 2.1.1.1, there is clear evidence that individuals often violate their self-interest. Therefore, resource-based models need the auxiliary assumption that people focus on their *long-term* self-interest, which is maximized by such a strategy.<sup>8</sup> Others, for example, Lind and Tyler (1988), have proposed alternative *relational models*. The core assumptions of their *group-value model* is the assumption that the

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<sup>8</sup> Such a proposition, however, is nearly impossible to test empirically and therefore of restricted theoretical value.

justice motive is related to humans' general need to affiliate with others,<sup>9</sup> or, as Tyler (1994) put it:

“The basic assumption of the relational model is that people are predisposed to belong to social groups and that they are very attentive to signs and symbols that communicate information about their position within groups” (p. 851).

Fair treatments signal to individuals that the group values them as members (e.g., Tyler & Blader, 2003; Lind & Tyler &, 1988; Van den Bos & Lind, 2002). Unjust treatment is therefore seen as a sign of a low quality relationship, which would also predict low willingness of the group to cooperate in the future. As a matter of course, the assumed unwillingness of others to cooperate in the future does not foster cooperative behavior by the individual in the present. Note that the model does not assume that justice judgments are not influenced by instrumental or resource-based concerns. It just assumes that especially procedural justice judgments are mostly influenced by relational concerns. Later, the model was complemented by the *relational model of authority* (Tyler & Lind, 1992), which makes very similar assumptions. However, it does not focus on the influence of the non-instrumental factors in the justice judgment but on the acceptance of authority and leadership. It makes the assumption that just procedures initiated by an authority are a sign of concern for the individual and will therefore heighten the individual's acceptance of this authority. Recently,

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<sup>9</sup> In strict terms, such an affiliation motive is also a self-interested strategy because integration in a group buffers negative influences and is therefore maximizing the individual's outcome. However, seen from a psychological standpoint, the behavior is triggered by the affiliation motive and not by concerns of self-interest.

these models have been succeeded by the *group engagement model* (Tyler & Blader, 2003), which has a broader focus than its predecessors. It states that procedural justice judgments are used in order to assess the identification with a certain group (which is in charge of the procedure). The procedural justice judgment is hereby used to assess how much pride and respect the inclusion in a group would give to the person (via group identification) and how strong the person should therefore engage in the group's activity.

All three models received substantial empirical support. So, for example, the finding that *voice* influences the outcome even when it is given after the decision was already made (Lind et al, 1990), gives rise to the assumption of the group-value model that non-instrumental "symbols" also have an impact on the perception of the procedure. Tyler (1994) found that acceptance of authority is indeed influenced by procedural justice judgments based mainly on relational concerns. Tyler and Blader (2001) found that in an organizational work environment, pride and respect (identity concerns) were more influential in predicting cooperation than resource-related concerns.

Despite its heavy theoretical impact on understanding the psychological underpinnings of justice judgments, the impact of the three models on the conception of the judgment *formation* process is limited. All three models extend the ideas of Thibaut and Walker (1975) and aim to complement the resource-based assessment of controllability with relational criteria. In order to achieve this, Tyler (1989) proposed three additional criteria: *neutrality*, *trust*, and *standing*. Lind (1995) reformulated them into three new terms: *neutrality*, *benevolence*, and *status recognition*. Finally, Blader and Tyler (2003) conceptualize the procedural justice judgment as consisting of four components: *formal* and *informal quality of decision-making* and *formal* and *informal quality of treatment*. Quality of decision-making hereby relates to resource concerns while the quality of treatment assesses the relational

concerns. Formal components assess the procedural structure while informal components assess the behavior of the interaction partners (e.g., the supervisor). Since the model does not make any explicit assumptions about the formation process, it can be assumed being similar to Thibaut's and Walker's (1975) and Leventhal and colleagues' (1980) conception. Colquitt (2001) stated that the criteria of Lind (1995) partly resemble the criteria defined by Leventhal and colleagues' (1980). Neutrality overlaps with bias suppression and benevolence with ethicality. Colquitt also states that trust is a construct of its own that is best viewed as a correlate of procedural justice. Seen from the perspective of procedural justice judgment formation, only the criterion of status recognition (or standing) was added to the previous concepts of a rule-based comparison process.

#### *2.1.2.4 Categorization approach*

Other justice researchers have also put forward the idea of such a comparison process, however, in different ways. Ambrose and Kulik (2001), for example, conceptualized the formation of procedural justices judgment as a process in which the actual procedure is compared to the prototype a person has about a fair (or unfair) process in a certain area of judgment (e.g., for a fair performance appraisal). The better the attributes of the actual procedure (e.g., boss offers coffee) match the attributes of the prototype (e.g., boss is polite), the more just the procedure is perceived (vice versa for the match with the unfair prototype). Interestingly, they noted that beside these procedural attributes, the category also contains information about the associated persons and settings. Ambrose and Kulik argue that this point has been widely neglected by previous justice research. Based on the concept of cognitive categories (e.g., Fiske & Taylor, 1991), the model is also able to address the



different weight of different attributes in different situations, as was discussed above for the allocation preference theory (Leventhal et al, 1980). Ambrose and Kulik assume that there are attributes, which are more central and therefore more typical for a certain procedural category. Therefore, they are weighted more in the matching process. They also assume that the categories are hierarchically organized from very global categories (e.g., fair procedure) to categories lower in abstraction associated with different contexts (e.g., fair procedure in the organizational context) and procedures within these contexts (e.g., fair performance appraisal). In the more global categories, highly generalizable and socially-shared attributes should prevail, while in the more context-specific categories, the proportion of idiosyncratic information that is based on personal experiences should be higher. Which categories a person will use in the matching process depends on the characteristics of the situational context. Since the category also includes information about this context, the choice for a certain category for the actual matching process is conceptualized as a preceding matching. Additionally, characteristics of the individuals themselves should influence the choice and content of the categories. So, for example, experts in a certain field should have more extensive categories than novices. Following Ambrose and Kulik, the findings of Schminke, Ambrose, and Noel (1997) that utilitarians and formalists differ in their justice evaluations could stem from the more extensive categories of the formalists who are generally more concerned about justice issues.

While this model offers some interesting new looks at the formation process of justice judgments, it still lacks empirical testing. However, note that the idea of the comparison of actual characteristics of the procedure to a normative reference point (here an attribute of the prototype) is again focus of the approach. This is a similarity with the other presented models that will be discussed in more detail at the end of this chapter.

### 2.1.2.5 *Reference cognitions theory and fairness theory*

Folger and Cropanzano (2001) have also elaborated on this comparison idea. Based on the research of Kahneman and Tversky (1982) on the simulation heuristic, the reference cognitions theory (Folger, 1986) states that distributive and procedural justice judgments are formed by counterfactuals that individuals are able to generate when thinking about the allocation situation. When a procedural rule is broken, individuals' thinking becomes inherently referential. They will evaluate the rule breach by generating a mental representation of what might have happened instead. This idea perceived some empirical support especially in the evaluation of outcomes (for a more detailed description, see Folger & Cropanzano, 1998; for a work on procedures, see Van den Bos & Van Prooijen, 2001). Folger and Cropanzano (2001) elaborated this idea in the fairness theory by stating that people construe counterfactuals about what would, could and should alternatively have happened and compare them to the actual characteristics of the process and the outcome to form their justice judgments. According to Folger and Cropanzano, all justice judgments, namely distributive, procedural, and interactional justice judgments, are formed based on these three kinds of counterfactuals. In order to perceive a case of injustice, an individual has to be able to generate all three kinds of counterfactuals. Or to put it differently, there must be differences between the event and what would, could, and should have happened otherwise. The formation of the different kinds of justice judgments only differs in the extent to which the three kinds of counterfactuals are integrated into the judgment. For procedural justice, the counterfactuals about what should and what could have happened are of interest in the formation of the judgment. The intensity of injustice is a function of the distance between the counterfactual and the actual characteristics of the process. While Folger and Cropanzano focus on the distance as the determinant of the intensity of perceived injustice, it is apparent

that especially for complex procedures the frequency of these counterfactuals is also important for the judgment. Procedures, especially the more complex ones, often have more than one characteristic that allows for the generation of counterfactuals.

In sum, the fairness theory (Folger & Cropanzano, 2001) offers an alternative conception of the formation of justice judgments. While there is some empirical evidence for the reference cognition theory (Folger & Cropanzano, 1998; Van den Bos & Van Prooijen, 2001), the empirical validation of the new fairness theory is still lacking. The model differs from the above mentioned conception by stating that the basic formation process is the same for all kinds of justice judgments and by introducing the idea that the reference points are counterfactuals generated by the individual. However, despite these differences, it shows one important similarity with the other models. Again, we have a comparison process of the characteristics of the actual process and a reference point. Again, we see that besides the distance between the reference point and the actual characteristic, the *frequency* of these comparisons plays a role in the judgment formation.

#### 2.1.2.6 Summary and outlook

In this chapter, five basic models of the formation of procedural justice judgments have been presented. This is not an exhaustive review of the literature of the formation of these judgments. There are many more models which make assumptions about the formation process. One group of theories, the *fairness heuristic theory* (Lind, 2001) and its successor, the *uncertainty management model* (e.g. Van den Bos & Lind, 2002), will be discussed later in section 2.3.2. Other models like the *accessible identity model* (Skitka, 2003) will not be discussed in this work. This lack of comprehensiveness has two reasons. First, such a review would be far beyond the scope of this work, which focuses on the influences of cognitive subjective experiences on procedural justice judgments and on cooperation. Second, the

presented models were selected for the reason of demonstrating that all models, despite the very different conceptions and assumed mechanisms, share one crucial assumption that in fact all current models of procedural justice judgments share.<sup>10</sup> The formation process is, in one way or the other, a comparison process of the actual characteristics of the process with some kind of reference point. In this comparison process, the judgment about the fairness of a procedure is formed upon the *frequency* of the perceived mismatches and gravity of these mismatches (*distance* between the actual characteristic and the reference point). All these models hereby (implicitly) assume that the justice judgment is entirely based upon the available *content information* about the procedure and the salient reference points. In the next chapter, it will be argued that this view neglects another important source of information in the judgment formation: *cognitive subjective experiences*.

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<sup>10</sup> The uncertainty management model (Van den Bos & Lind, 2002) constitutes an exception, which will be discussed in section 2.3.2.

## 2.2 Cognitive subjective experiences

The focus on content information is not a distinct feature of theories about justice judgments. In fact, most theories about human judgment (for reviews, see Koehler & Harvey, 2004; Plous, 1993) make this assumption. Individuals who form a judgment are assumed to base this judgment on the content information that is accessible at the moment and is applicable to the evaluation target (for reviews, see Higgins, 1996; Wyer & Srull, 1989). This assumption, however, has been questioned in the last two decades by the social cognition research on *subjective experiences* (for reviews, see Schwarz & Clore, 1996, in press). This research has demonstrated that not only the accessible content is influencing the judgment but also different kinds of subjective experiences accompanying the information processing (see contributions in Bless & Forgas, 2000). Clore (1992) suggested three distinct categories of subjective experiences, differentiating affective, bodily and cognitive experiences. Mood, emotions, and experienced positive or negative valence are subsumed under the term *affective experiences* (Schwarz & Clore, 1996). *Bodily experiences* are feelings and states of arousal connected with physical processes (e.g. hunger or pain) as well as proprioceptive feedback (e.g., feelings induced by arm flexion or extension). The third group of experiences – *cognitive experiences* (e.g., the *accessibility experience*) – are feelings that accompany mental processes or are triggered by them. For all three categories of experiences there is ample evidence from a wide array of domains that they are often used as information in decisions and judgments (for an overview, see Schwarz & Clore, in press).

In the justice literature, however, the influence of subjective experiences has experienced considerably less attention than in other domains of research. Van den Bos (2003) demonstrated that people use their *affective* state as information in the formation of justice judgments if no other justice-relevant information is available (for related evidence, see Sinclair & Mark, 1991, 1992; Tanaka & Takimoto, 1997). With respect to *bodily* experiences,

Van Prooijen, Karremans, and Van Beest (in press) showed that approach- or avoidance-motivation induced by arm flexion or arm extension moderated the perception of procedural justice. However, to my knowledge, no research has up to date addressed the influence of *cognitive* experiences on justice judgments. This lack of evidence is all the more striking given the highly prominent role of cognitive subjective experiences in social cognition research (e.g., Bless & Forgas, 2000) and the robust influence *accessibility experiences* have been shown to exert across judgmental domains (for reviews, see Schwarz, 1998, 2004). Based on the evidence from other domains of judgment, it is argued in this work that procedural justice judgments are not only influenced by the information about the procedure but also by the feeling of ease or difficulty of retrieving this information from memory. In order to develop this argument, a short review of the research on accessibility experiences is given next before turning back to the formation of procedural justice judgments and how cognitive experiences may influence these judgments.

### 2.2.1 *The accessibility experience*

In the broad literature on subjective experiences, especially accessibility experiences have received particular attention (for reviews, see Schwarz, 1998, 2004). Starting with Tversky and Kahneman (1973), it has been suggested that the experience of the “ease with which instances or associations could be brought to mind” (p. 208) influences judgments and decisions across a wide range of domains (for overviews, see Schwarz, 1998, 2004). For example, in one of their initial studies, Tversky and Kahneman (1973, Experiment 3) reported that participants overestimated the number of words beginning with the letter ‘r’ and underestimated the number of words having the letter ‘r’ in the third position. In their view,

this result reflects that participants relied on the *experienced ease* or *difficulty* with which instances of the two word categories can be brought to mind. This idea contradicts the core assumption of most judgmental models that the more information in favor of a certain conclusion is available, the likelier this conclusion is to be drawn. The findings of Tversky and Kahneman could be replicated for judgments and decisions across a wide range of domains (Schwarz, 1998; 2004), demonstrating that the accessibility experience is an important source of information in many judgments.

Despite the wide range of research on the accessibility experience, its influence on justice judgments has to my knowledge never been studied. This lack of research is surprising given the prominent role of the ease-of-retrieval phenomenon in judgment and decision-making but may be due to methodological problems long inherent in research on the ease-of-retrieval phenomenon. For instance, in the above-mentioned Experiment 3, Tversky and Kahneman (1973) participants overestimated the number of words beginning with the letter ‘r’ and underestimated the number of words having the letter ‘r’ in the third position. Presumably, this result reflects that participants relied on the experienced ease. Notably, however, due to reasons of accessibility, it is also conceivable that participants recalled differentially large sets of words (i.e., many words starting out with the letter ‘r’, and only few words with the letter ‘r’ in the third position). Given such differential content, it is also possible that participants actually relied on the content rather than on the experiential information. Hence, the classic studies on biased frequency estimation may be explained both by accessible content as well as by accessibility experiences. Therefore, paradigms separating the two pathways were needed.

Addressing the outlined confound of content versus experiential information, Schwarz et al. (1991) introduced a methodological paradigm that sets up the judgmental stage in such a way that opposing results can be predicted from the use of experiential versus content-based information processing. Specifically, participants were asked to recall different *amounts* of

information, with some recalling few (easy) and others many (difficult) instances of previous self-assertive behavior. Afterwards, participants judged their own self-assertiveness. If individuals rely on the *available content* in forming these kinds of judgments, the recall of many as compared to few examples should result in higher perceptions of self-assertiveness. Conversely, if individuals rely on their *accessibility experience*, the retrieval of few examples (an easy task) as compared to many (a difficult task) should lead to higher ratings of self-assertiveness. After all, if it is easy (difficult) to come up with instances of one's own self-assertiveness, chances are that one is (is not) self-assertive. Thus, in contrast to previous paradigms, the experimental setting suggested by Schwarz and colleagues (1991) allows for the separation of content- versus experience-based effects, and, consequently, for the investigation of factors moderating reliance on accessible content versus accessibility experiences. Given these propensities, and given that the paradigm has been successfully established in various research endeavors including, for example, attitude formation (Haddock, 2000; Wänke, Bless, & Biller, 1996), stereotyping (Dijksterhuis, Macrae, & Haddock, 1999), frequency estimates (Aarts & Dijksterhuis, 1999; Wänke, Schwarz, & Bless, 1995), group perception (Rothman & Hardin, 1997), health-related behavior (Rothman & Schwarz, 1998), and advertising (Raghubir & Menon, 1998; Wänke, Bohner, & Jurkowitsch, 1997), this work builds upon this methodology in the current set of studies, too.

In all the above-mentioned experiments, individuals used the accessibility experience in the judgment formation. Given these findings, the question rises why we rely on the accessibility experience in our judgments. In the heart of the usage of the accessibility experience in judgments lie individuals' conceptions about the functioning of their mental system (e.g. Schwarz, 2004; Schwarz, Sanna, Skurnik, & Yoon, in press). This acquired knowledge about cognitive processes is called *metacognitive* knowledge (Flavell, 1979).



Metacognitive knowledge can be seen as a set of naïve theories about the functioning of the mind (Schwarz, 2004). So, for example, most individuals have a whole set of such naïve theories about the working of their memory. Individuals use them in order to interpret information from memory and control their memory processes. One of these naïve theories is especially important for the usage of the accessibility experience. It links the organization of the memory to the characteristics of the outside world and sees the accessibility experiences as a valuable cue in frequency judgments. Its core assumption is that the more exemplars exist in the environment, the more exemplars we must have stored in memory. Having many exemplars stored in memory should make it easier to bring some of them to mind (Schwarz, 2004). Based on this correct belief, individuals use the accessibility experience as metacognitive information in heuristic frequency judgments. In reversal of the above described reasoning, individuals assume that if it is easier to retrieve exemplars from memory, then there must be many of them stored in memory. Consequently, these exemplars should be frequent in the outside world. For strictly logical purposes, this reversal is not correct and, therefore, it is vulnerable to mistakes.<sup>11</sup> However, it is a fast and frugal way to assess the frequency of a certain set of exemplars. Judging from the number of demonstrations of accessibility experiences' influence on judgments (Schwarz, 1998; 2004), this error-prone but lean information processing seems to fit individuals' needs in many situations. In most environments, the correlation of frequency and memory representation is very high.

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<sup>11</sup> Misjudgments occur when other characteristics of memory organization than the frequency of exemplars are responsible for the ease or difficulty of retrieval. So, for example, in the above described Experiment 3 of Tversky and Kahneman (1973), the judgments of the participants were actually incorrect because there are more words in the English language with "r" in the third place. In this particular context, the differences in the accessibility experience do not derive from the differences in word frequency but from the general representation of words in memory and the associated search processes.

Therefore, the likelihood of an error is low compared to the benefit of the low processing efforts (for a more detailed discussion on heuristics and their exploitation of characteristics of ecologies, see Gigerenzer, Todd, & the ABC Group, 1999). Another naïve theory that also renders the accessibility experiences as a valid cue for judgments strongly resembles the above-described reasoning. It assumes that the more frequent exemplars are the more typical they are for the underlying category. Hence, it is assumed that the easier it is to recall an exemplar the more typical it is for the whole category. Both described naïve theories use the accessibility experience as metacognitive information and infer from the ease of the recall that a feature must be a very typical and/or frequent feature of the target. By using the above-described paradigm by Schwarz and colleagues (1991), the application of these naïve theories could be shown in very different judgmental tasks. So for example, individuals like Tony Blair more after generating few rather than many favorable thoughts about him (Haddock, 2002). They think that their risk of heart disease is higher after recalling few rather than many risk-increasing behaviors (Rothman & Schwarz, 1998) and they assume that they ride their bikes more frequently after listing three rather than eight instances of bicycle use (Aarts & Dijksterhuis, 1999). All five studies of the current work, explored if individuals also use accessibility experiences as a heuristic cue in the assessment of the fairness of a procedure.

### *2.2.1.1 The moderating role of knowledge accessibility and expertise*

In all the above-described experiments, participants based their judgments on accessibility experiences, following naïve theories that more or less resemble the two above-described theories. The variety of presented judgment domains, however, should not imply that individuals use the accessibility experience blindly in all contexts. On the contrary, the

use of accessibility experiences has shown to be highly context sensitive. One example for this context sensitivity is the role of *expertise* in a judgment domain. So, for example, most Europeans would never assume that the United States of America's House of Congress has only a few members just because it is difficult for them to come up with the names of eight congress members. This is because they have the metacognitive knowledge that they have no expertise in American daily politics. Therefore, accessibility experiences do not have any diagnostic value to them in judgments related to this area. So, for example, Sanna and Schwarz (2003) found that participants who were informed that individuals normally do not have the expertise to come up with reasons for the outcome of the 2000 U.S. presidential election did not base their decision, if they would have predicted this outcome, on the accessibility experience (for related evidence, see Biller, Bless, & Schwarz, 1992; Briñol, Petty, & Tormala, 2006; Winkielman, Schwarz, & Belli, 1998). Attributing the difficulty of recall to one's lack of knowledge renders accessibility experiences as invalid information in the judgmental process. Having expertise in a certain domain of judgment, however, does not necessarily mean that accessibility experiences are used. There is empirical evidence that individuals with very high expertise in a certain knowledge domain do not use the ease experience in their judgments. So, for example, Ofir (2000) found that mechanics based their judgments about the likelihood of the "all-other-kinds of car breakdowns" category (a category for breakdowns not classified in one of the major problem categories) less on accessibility experiences than laymen (for similar results, see Tybout, Sternthal, Malaviya, Bakamitsos, & Park, 2005). Ofir explains this effect by the better memory organization of experts. An additional explanation could be that experts have a better metacognitive strategy use. Since accessibility experiences lead to poor estimates in the probability judgments in the experiment by Ofir, experts may have just known better when to use accessibility experiences. However, independent of the reasons why an individual is not using accessibility

experiences, this seems to be a willful strategy use. Menon and Raghubir (2003, Experiment 4) have demonstrated that the use of the accessibility experience is partly automatic and that its suppression because of low diagnosticity is a deliberate process that fails when insufficient cognitive resources are available.<sup>12</sup> This fits with other research showing the partly automatic nature of the use of accessibility experiences in judgment formation (e.g., Whittlesea & Williams, 1998). Altogether, there is evidence that individuals use the accessibility experience only in a medium range of expertise in the judgment domain. However, due to the partly automatic usage, this non-use of the experiences seems to be a willful process requiring additional cognitive resources and attention. In Experiment 5 of this work, the interplay of domain specific expertise and the use of the accessibility in the formation of procedural justice judgments and subsequent cooperation behavior was examined.

### 2.2.1.2 *The moderating role of processing capacity*

Capacity constraints as in Experiment 4 by Menon and Raghubir (2003) seem to limit our ability to control the usage of accessibility experiences. Another reason for the strong reliance on accessibility experiences under capacity constraints is put forward by Schwarz (1998). He considers the reliance on accessibility experiences in judgment formation as a heuristic strategy (also, see Tversky and Kahneman, 1973). Cognitive experiences can hereby be seen as *meta-summaries* of currently activated content or ongoing processes, boiling

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<sup>12</sup> Unkelbach (2006, in press) demonstrated an exception for the related perceptual fluency experience. He found that the usage of the experience could be relearned very quickly and without conscious awareness when the characteristics of a certain situation differed from the “default” characteristics of most other situations.

complex situational data down to single pieces of experiential information (Koriat and Levy-Sadot, 1999). The resulting experience can then be used as information in judgments (Schwarz 1998, 2004). Consequently, the accessibility experiences' influence on judgments should be especially strong under cognitive capacity constraints and low processing motivation. This reasoning is following the assumption of prominent dual process theories (e.g., Chen & Chaiken, 1999; Petty & Cacioppo, 1986) that deliberate strategies like the integration of the content information depend on the availability of free cognitive capacity and high processing motivation (Schwarz, 1998). In line with this assumption, Greifeneder (2006) demonstrated that individuals under low cognitive constraints indeed use the accessibility experience less than individuals under high cognitive constraints. If this moderating role of capacity on the use of accessibility experiences is due to unsuccessful suppression (Menon & Raghurir, 2003) or metacognitive strategy choice (or both), remains an open question. In order not to restrict individuals' choice in the use of the accessibility experience, all five experiments were designed to impose no additional mental constraints on the participants.

### *2.2.1.3 The moderating role of processing motivation*

The empirical evidence on capacity constraints demonstrates that individuals under low mental capacity rely more on the accessibility experience (Greifeneder, 2006; Menon & Raghurir, 2003). However, the evidence for the moderating role of processing motivation is not as equivocal. Evidence confirming the hypothesis that low processing motivation leads to more use of accessibility experiences has been reported in the domain of attitudinal and frequency judgments (Aarts & Dijksterhuis, 1999; Florack & Zoabi, 2003; Grayson & Schwarz, 1999; Greifeneder, 2006; Rothman & Schwarz, 1998). So, for example, Aarts and

Dijksterhuis demonstrated in their Experiment 2 that only participants with low accuracy motivation used accessibility experiences in a frequency judgment about their bicycle use. However, there is also evidence directly opposing the outlined pattern, suggesting that reliance on accessibility experiences is particularly likely in situations of high motivation (Tormala, Petty, & Briñol, 2002; Wänke & Bless, 2000). To date, evidence reconciling the two opposing sets of results is still lacking. One may argue, however, that the use of different naïve theories (due to the specific situational context) may be responsible for these results. The two naïve theories mentioned in section 2.2.1 are not the only naïve theories that make use of the accessibility experience. In both exceptions from the hypothesis that motivation leads to less reliance on the accessibility experience (Tormala et al., 2002; Wänke & Bless, 2000), participants may have utilized naïve theories that do not see the accessibility experience as a frequency or typicality cue. So, Tormala and colleagues found that individuals use the accessibility experience to assess their *confidence* with the retrieved information (also see Haddock et al., 1996, 1999). Similarly, Wänke and Bless (2000) demonstrate that individuals sometimes hold the assumption that the ease of retrieval is a cue for the *quality* of the argument. In both cases participants who are highly motivated should therefore use the accessibility experience extensively in their information processing (cf., Petty & Cacioppo, 1986). This idea has never been tested and a thorough test of this hypothesis is beyond the scope of this work. However, due to the characteristics of procedural justice judgments, the frequency (or typicality) assumption should be perceived most applicable in the context of justice judgments (see also section 2.3.1). Therefore, it is assumed that the accessibility experience has the strongest influence on the procedural justice judgment when processing motivation is low. The implications of this assumption for this work will be discussed in more detail in section 2.3.2.

#### 2.2.1.4 *The moderating role of affective state*

An additional moderator of the reliance on the accessibility experience was identified by Ruder and Bless (2003). They proposed that mood of the individuals should moderate their reliance on the accessibility experience in judgment formation. This argument was based on the findings of Bless and colleagues (1996) that individuals not only use mood as information in judgments (Schwarz & Clore, 1983), but also in order to determine the appropriate information processing strategy. They found that individuals in happy mood rely more on general knowledge structures (e.g., stereotypes, scripts and heuristic information). In contrast to other researchers, Bless and colleagues (1996; see also, Bless, 2001) argue that this is neither due to capacity constraints (e.g., Mackie & Worth, 1989) nor to a lack of motivation in happy mood (e.g., Wegener & Petty, 1994). They propose that positive emotions inform individuals that the situation is unproblematic and that they can therefore rely on their general knowledge structures in order to process the incoming information. Negative affect, however, signals the presence of a problem and renders the reliance on general knowledge structures as an inappropriate processing strategy. Ruder and Bless applied this basic assumption that happy mood fosters the reliance on general knowledge structures to the accessibility experiences' role in judgment formation. In line with their reasoning, they could demonstrate that individuals in happy mood relied more on accessibility experiences in order to form their judgments. Participants in a sad mood used a more content based strategy when forming their judgments. In the present work, mood will not be manipulated. It should also be noted here that the proposed moderating role of uncertainty in the use of accessibility experiences (that will be discussed in the next chapter) is not an effect of negative affect. This, issue will also be discussed prior to Experiment 5.

### 2.2.2 *Summary and outlook*

In this chapter, a short overview of the findings concerning cognitive subjective experiences was given. Previous research has demonstrated that not only the accessible content is influencing the judgment but also different kinds of subjective experiences accompanying the information processing. Three distinct categories of subjective experiences have been proposed. This chapter focused on the accessibility experience as the most prominent exemplar of the cognitive category. This experience is a feeling elicited by the retrieval of content information from memory. Based on their naïve theories, individuals use accessibility experiences as a metacognitive cue in heuristic judgments. This only takes place when individuals render accessibility experiences as valid information in these judgments. Since the use of this metacognitive cue is a heuristic strategy, it is assumed to be strongest when the processing capacity and processing motivation are low. A positive affective state should also lead to more reliance on accessibility experiences. The next chapter will try to integrate this research with the research on the formation of the procedural justice judgment. The aim of this work, however, is not only to apply findings from social cognition research to the justice literature, but also to extend our knowledge about accessibility experiences. Based on the findings from justice research, uncertainty is introduced as a new potential moderator of the use of accessibility experiences. In order to subsequently develop the idea that uncertainty may moderate the usage of accessibility experiences, a detailed account of the uncertainty management model (for reviews see, Lind & Van den Bos, 2002; Van den Bos & Lind, 2002) is given in section 2.3.2.



## 2.3 Cognitive subjective experiences in procedural justice judgments

### 2.3.1 *Procedural justice judgments - a purely content-based judgment?*

The last chapter outlined how and under which circumstances accessibility experiences are used in judgments of different kinds. In the last section (2.1.2), different models of the formation of procedural justice judgments have been presented and the claim was made that all these models conceptualize the formation as a purely *content-based process*. Within each conceptualization, the characteristics of the actual process are compared to specific (normative) reference points. Then, the *frequency* of violations (when reference point and actual process do not match) and the distance between the reference points and the actual process characteristics (the gravity of the violation) are used to assess how just the process is. Consequently, an important part of the procedural justice judgment is the assessment of how *frequent* these violations were. In the last chapter, evidence was presented, corroborating the idea that individuals often rely on accessibility experiences in such frequency judgments (Aarts & Dijksterhuis, 1999; Tversky & Kahneman, 1973; Wänke, Schwarz, & Bless, 1995). Consequently, it may be the case that procedural justice judgments are strongly influenced by the accessibility experience associated with retrieving pertaining instances where reference points and actual characteristics of the procedure did not match. Individuals could use this accessibility experience in order to make inferences on the frequency of these violations in the procedure. If this hypothesis is correct, individuals should conclude that there must have been many of these aspects (and that the procedure was therefore unjust), if it feels easy to come up with aspects of the procedure that are distant from the corresponding reference points. However, if this task feels difficult, the conclusion should be reversed, suggesting that there could not have been many of these aspects (and that the procedure was therefore just). If the findings from other judgment domains can be replicated for justice judgments such a heuristic reliance on accessibility experiences would lead to a seemingly paradoxical situation. The

experience elicited by the retrieval of the information about the procedure (meant to form the judgment from) would sometimes be even more influential in the justice judgment than the recalled information itself. In contrast to an integrative processing of the accessible content information, such a strategy would allow for a fast and frugal processing while being sufficiently accurate in most situations (Schwarz, 2004). To the extent that people are ‘cognitive misers’ (Fiske & Taylor, 1984), one may hypothesize that justice judgments are more often based on accessibility experiences than not. All five experiments in this work examined this hypothesis that accessibility experiences are influencing the formation of procedural justice judgments.

### 2.3.2 *Uncertainty as a new moderator of the use of the accessibility experience*

As mentioned in the Introduction, it is the main aim of this work to examine if procedural justice judgments are in part based on accessibility experiences. This is, however, not the only goal of this work. A second goal is, to examine whether the influence of accessibility experiences on procedural justice judgments is an ubiquitous or exceptional phenomenon. Based on the findings reported in section 2.2.1, it could be assumed that negative mood, sufficient mental capacity, high motivation, as well as very high or very low expertise in the domain of justice judgments should lead to less reliance on the accessibility experience. While these assumptions are plausible constraints of the reliance on the accessibility experience, this work focuses on *uncertainty* as a potential new moderator of the accessibility experience. There are two reasons for this choice: The first reason is, that given the general importance of uncertainty in justice judgments (Lind & Van den Bos, 2002; Van den Bos & Lind, 2002, for overviews) it seemed straightforward to examine if this influence is also

extending to the formation of the justice judgment. A second reason for this focus is that uncertainty has not been addressed in the domain of accessibility experiences before. Based on this it is assumed that a closer examination of the moderating role of uncertainty would be of relevance to both research on procedural justice and research on cognitive subjective experiences.

As already mentioned, uncertainty has been identified as a key motivator for individuals' preoccupation with justice issues (Lind & Van den Bos, 2002; Van den Bos & Lind, 2002, for overviews). In line with other research (e.g., Hogg, 2000, 2005; McGregor, Zanna, Holmes, & Spencer, 2001; Lopes, 1987; Weary & Edwards, 1996), the *uncertainty management model* (Lind & Van den Bos, 2002; Van den Bos & Lind, 2002) assumes that individuals are motivated to reduce uncertainty in their lives. Social integration is one way to cope with uncertainty (e.g., Hogg & Mullin, 1999; Lind, 2001; Van den Bos & Lind, 2002). Justice judgments about procedures and outcomes are hereby seen as good proxies for ones' integration into the group or organization responsible for this allocation process. A fair treatment offers the maximum chance of a deserved outcome and signals that the group or organization values the individual as a member (e.g., Tyler & Blader, 2003; Lind & Tyler, 1988; Van den Bos & Lind, 2002). This group integration is reducing the uncertainty of individuals by reassuring them of their group status and the hereby-available group resources to cope with potential aversive situations. These assumptions have already been made by the model's predecessors, the *fairness heuristic theory* (Lind, 2001) and the *group-value model* (e.g., Lind & Tyler, 1988). The uncertainty management model, however, broadened the scope of this coping strategy. While the fairness heuristic theory assumed that individuals use the justice judgment in order to evaluate social relationships in conditions of insufficient information, the uncertainty management model generalizes this idea by stating that individuals use justice judgments in order to reduce all kinds of uncertainty. Consequently,

Van den Bos and Lind define that “uncertainty either occurs when a person confronts an inability to predict the future or when a person confronts an incompatibility between different cognitions, between cognitions and experiences, or between cognitions and behavior.” (2002, p. 4). Following Sorrentino and Roney (1999), Van den Bos and Lind conceptualize the management of uncertainty as a basic motive. Justice judgments are seen as one potential way to reduce this uncertainty. Similar to the predictions of the related terror management theory (e.g., Pyszczynski, Greenberg, & Solomon, 1999; Solomon, Greenberg, & Pyszczynski, 1991), individuals can also reduce uncertainty by defending their own world view (Van den Bos, Poortvliet, Maas, Miedema, & Van den Ham, 2005), defending their own religion (Van den Bos, Van Ameijde, & Van Gorp, in press), or withdrawal from socially deviating people (Van den Bos, Euwema, Poortvliet, & Maas, in press). Justice judgments are therefore not an exclusive way to cope with uncertainty. But since many uncertain situations do occur in the social context, related justice judgments are often a very salient and feasible way to cope with uncertainty.

Based on these assumptions, the model predicts that individuals under uncertainty react more sensitive towards justice issues. This prediction has gained substantial empirical support. Studies examining the uncertainty management model can be organized in two groups. The first group of studies is manipulating (or measuring) uncertainty that is triggered by insufficient or ambiguous information (mostly about social relations). In the following, this kind of uncertainty is called *informational uncertainty*. In one of these studies, Van den Bos, Wilke, and Lind (1998) demonstrated that people mainly rely on their fairness judgments to evaluate the legitimacy of an authority when they have neither positive nor negative referential information about this authority. Similar results have been found in a number of other studies on the moderating role of informational uncertainty (Diekmann, Barsness, &

Sondak, 2004; Tangirala & Alge, 2006; Van den Bos, Van Schie, & Colenberg, 2002). The second group of studies measures or manipulates what can be called *personal uncertainty*. So, for example, Van den Bos (2001a) found that individuals, to whom situations of personal uncertainty were made salient, showed stronger reactions toward being granted voice in a distribution process.<sup>13</sup> De Cremer and Sedikides (2005) demonstrated that persons with high dispositional self-uncertainty are also more sensitive to fairness-related issues. Thau, Aquino and Wittek (in press) found similar results in the organizational context for individuals with high social comparison orientation. Other studies also reported similar findings (Van den Bos, 2001b; Van den Bos, Euwema et al., in press; Van den Bos & Miedema, 2000; Van den Bos et al., 2005; Van den Bos, Van Ameijde, & Van Gorp, in press).

The assumptions of the uncertainty management model have also inspired research on the *formation* of justice judgments. It has been suggested that informational uncertainty motivates individuals to rely on affective experiences in forming justice judgments to reduce this uncertainty.<sup>14</sup> Indeed, Van den Bos (2003) found that participants relied on affective experiences to form justice judgments in situations where information about the procedure or the outcome was not available. For example, participants receiving no information about whether they would be granted voice about the distribution of the compensation for the experiment judged the procedure based on their affective state (Van den Bos, 2003,

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<sup>13</sup> This uncertainty salience manipulation will be discussed in more detail prior to Experiment 3. Here, it may be of interest that the paradigm does not manipulate the affective state of participants. Consequently, the effects cannot be interpreted as being due to more or less reliance on general knowledge structures based on the signaling function of affective states (Bless et al., 1996).

<sup>14</sup> Hereby, the uncertainty management model is the first model on justice judgments that allows for the integration of subjective experiences in the judgment formation. The present work, however, is extending the model's assumptions in various ways. This will be discussed in detail in section 4.1.2 (General Discussion).

Experiment 2). Participants in an induced negative affective state judged the procedure as less just than participants in a positive affective state. Participants who either received information about having voice or having no voice did not use their affective state to form procedural justice judgments (they relied on the voice-related information). Together, these findings parallel evidence from other studies in the realm of affective experiences (Schwarz & Clore, 1996; Schwarz, 1990; Clore, 1992), suggesting that affective experiences may be used as heuristic information in the judgment formation.

Given the findings reported by Van den Bos (2003), one could assume that this heuristic processing is especially strong in conditions of high uncertainty. In the present work it is argued that this is only the case when uncertainty stems from the lack of information (as in the above reported study) or when content-based processing is not possible for other reasons (e.g., capacity constraints). In situations where uncertainty is high and information about the process is available, individuals should be motivated to form accurate justice judgments to reduce uncertainty. Consequently, individuals under *personal uncertainty* should be motivated to process the given information extensively and therefore rely less on heuristic cues. This is in line with current conceptions of dual-process theories such as the heuristic-systematic model (e.g., Chen & Chaiken, 1999; Chaiken, Liberman, & Eagly, 1989), which assume that individuals who are motivated (and capable) of forming accurate judgments will rely less on heuristic information than individuals low in accuracy motivation. If the quality or quantity of the information, however, does not allow for such processing (as under informational uncertainty) the heuristic-systematic model assumes that individuals who are highly motivated will also rely on heuristic information.

Following this line of reasoning, it is assumed that individuals under personal uncertainty should be highly motivated to form an accurate justice judgment (in order to reduce uncertainty) and should therefore process information about the procedure systematically (if this information is available). If cognitive experiences are indeed used as heuristic information in the judgment formation process (e.g., Koriat & Levy-Sadot, 1999; Schwarz, 1998; Tversky & Kahneman, 1973) the influence of accessibility experiences on the judgments should be weak under conditions of personal uncertainty. Corroborating this hypothesis, for instance, Van den Bos (2001a) reported that people to whom uncertainty was made salient (personal uncertainty, unrelated to the content of the procedure) reacted more strongly towards manipulations of voice in a process they experienced (Experiment 1) and were also more sensitive to fairness-related information when reading a scenario (Experiment 2). De Cremer and Sedikides (2005) found comparable results for persons who are dispositionally high self-uncertain. Additionally, De Cremer and Blader (2006, Experiment 3) found that people high on the related construct of need to belong (Baumeister & Leary, 1995) were more sensitive to the quality of arguments of why voice was granted to them.

### 2.3.3 *Summary and outlook*

In last two sections the argument was developed that subjective cognitive experiences play a role in the formation of procedural justice judgments. Especially, the accessibility experience, the feeling that is elicited by the retrieval of information from memory, may be used by individuals as a heuristic cue for the frequency with which procedural violations occurred. Personal uncertainty could be one potential moderator of this reliance on the accessibility experience. Since it is known that uncertainty is sensitizing individuals for justice relevant issues, it is assumed that they are motivated to form justice judgments

accurately. Since higher accuracy motivation leads to higher processing intensity and therefore to less use of heuristic information, accessibility experiences should be used mostly when certainty is salient while its influences under uncertainty should be weak. This is assumed for situations in which uncertainty is not due to the lack of information about the procedure. In cases of information uncertainty, the high motivation and the lack of information should lead to heuristic processing. Given supporting empirical data, these assumptions would have numerous implications for the justice literature as well as for the literature on accessibility experiences. Supporting evidence would extend our knowledge about the kind of information used in the procedural justice formation, about the role of uncertainty in this formation process, and its role as a moderator of accessibility experiences' influences.

While this chapter gave an introduction into the *why* and *how* accessibility experiences could influence procedural justice judgments, the next section (2.4) demonstrates the potential applications of such an influence. If accessibility experiences are used as heuristic information in the formation of justice judgments after or while a procedure is going on, then the accessibility experience could potentially influence *procedural justice expectations* as well. The implications of such a finding are outlined in the next section.



## 2.4 Justice expectations and perceptions in exchange situations

The following section will focus on the role of justice perceptions and justice expectations in (economic) exchange situations.<sup>15</sup> Hereby, two assumptions are put forward: First, it is assumed that justice expectations (like justice perceptions) are relying on the accessibility experience in their formation and it is therefore possible to manipulate them by changing this accessibility experience. Secondly, it is assumed that procedural justice expectations *directly* influence individuals' cooperation behavior. Besides its theoretical implications, such a finding would also be of interest to applied settings. The possibility to influence cooperation behavior via justice expectations would disclose new possibilities to foster cooperation in negotiation settings or to mediate conflicts. In order to develop these ideas in more detail, this chapter will first give an overview of the theoretical and empirical work on the role of procedural justice *perceptions* in cooperative behavior. The second part of the chapter will then focus on the potential role of procedural justice *expectations* in individuals' cooperative behavior.

### 2.4.1 Procedural justice perceptions and cooperation

In the section on procedural justice judgments (2.1.1.2), it was stated that procedural justice judgments do not only influence affective and cognitive reactions of individuals but also their behaviors. Therefore, it is not surprising that previous research has identified procedural justice perceptions as one determinate of cooperative behavior in exchange

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<sup>15</sup> In order to distinguish them from justice expectations, justice judgments that are made in, during or after the end of an allocation procedure are labeled "justice perceptions" throughout this section and whenever it is necessary in the rest of the work. The term "justice judgment" is used for both expectations and perceptions.

situations (e.g., De Cremer, Tyler, & den Ouden, 2005). But why do perceptions of procedural justice influence our cooperation behavior? The different theories described in chapter 2.2 would give very different explanations for this phenomenon. Resource-based models like the control model of Thibaut and Walker (1975) would state that in a procedure that offers no control to the individuals, the chances to achieve the deserved outcome are suboptimal. In such a situation it would not be rational to invest in a cooperation from which most likely others will profit more. Tyler and Blader (2003) would partly agree with this. However, their *group engagement model* would predict that procedural justice judgments mainly influence the perceived identification with the group (in this situation the individuals participating in the exchange situation), which on its part leads to cooperation. The *uncertainty management model* (e.g., Van den Bos & Lind, 2002) sees the justice judgments as cue in order to evaluate the relationship with the agent in charge of the resource allocation procedure. Not knowing how important the relationship is to the other party (information uncertainty), the procedural justice judgment is a good cue to reduce this uncertainty. Unjust treatment is therefore seen as a sign of low quality relationship which also predicts low willingness of the other party to cooperate in the future. As a matter of course, the assumed unwillingness of others to cooperate now and in the future does not foster cooperative behavior by the individual in the present. While all three described models differ in the weighting of relational and resource concerns in the formation of the judgments, they agree on the prediction of the individuals' behavior based on the procedural justice judgment. A just procedure should trigger cooperative behavior while unjust procedures should trigger non-cooperative behavior.

In line with this notion, empirical studies on procedural justice could demonstrate that individuals react to fair treatment with cooperative behavior (e.g., Lind, 2001). So, for example, in the organizational context there is abundant evidence that perceptions of high

procedural *justice* are correlated with organizational citizenship behavior, higher performance, more supervisor acceptance, and higher organizational attractiveness (for meta-analytic reviews, see Cohen-Charash & Spector, 2001; Colquitt et al., 2001). On the other hand, there is also evidence that perceived procedural *injustice* leads individuals to behave at best self-interested and at worst antisocial. So, for example, Greenberg in his seminal field experiment from 1990 examined workers who were exposed to a ten-week pay cut. The workers of one plant of the company were confronted with this action in an unfair procedure, which meant that the reasons for the pay-cut were not explained adequately to them. They also had no possibility to ask questions or voice their concerns. Workers of this plant showed a higher theft rate during the 10-week-period than workers from another plant of the company. In this other plant, workers were also exposed to the pay-cut but were experiencing a just procedure, which meant that they were explained the reasons for the pay cut adequately and had the right to ask questions about the action (see, also Greenberg & Scott, 1996). Folger, Robinson, Dietz, McLean-Parks, and Baron (1998) reported a correlation between the perceptions of unjust treatment and the frequency of workplace assaults. Lind, Greenberg, Scott, and Welchans (2000) demonstrated that former workers, who perceived the process of their lay-off as unfair, were likelier to sue the company than those who felt they were treated in a fair way. Given all this empirical evidence, it seems safe to say that individuals engage in cooperative behavior when treated just, while reacting in an uncooperative way if they perceive the procedure as unjust.

#### 2.4.2 *Procedural justice expectations and cooperation*

In the last section, evidence was reported that perceptions of high procedural justice lead to cooperative *reactions*. In all the studies reported above, the individuals already had experienced the allocation procedures. The focus of this section will lie on individuals' *actions* in exchange situation when they are starting the interaction. This topic received considerably less attention than individuals' reactions to procedural justice. In the sections on distributive (2.1.1.1) and procedural justice (2.1.1.2), it has already been stated that individuals often seem to have a desire to achieve just procedures and distributions (e.g., Kahneman, Knetsch, & Thaler, 1986b; Van Dijk & Wilke, 1995). So, for example Lerner (e.g., 1977, 2003) argues that humans have a fundamental justice motive that is not derived from other motives. He assumes that individuals' preoccupation with just procedures and distribution is not due to resource-based or relation-based concerns but due to their efforts to satisfy this motive (cf., Montada, 1998). While there is some evidence for this argument (for reviews, see Lerner, 2003; Montada, 1998), it is apparent that individuals are not always preoccupied to act in a just way in social situations. Therefore, it seems likely that besides this general justice motive, human actions in social exchange situations are guided by many additional processes that trigger fair or unfair behavior. Expectations about the outcome distribution or the structure of procedures have been identified as one potential determinant (Bell, Ryan, & Wiechmann, 2004; Shapiro & Kirkman, 2001) of such behavior. Bell and colleagues (2004) defined "justice expectations as an individual's belief that he or she will experience fairness in a future event or social interaction" (p. 25). This definition is in line with Olson, Roese, and Zanna (1996) who generally defined expectancies as "beliefs about the future state of affairs. They are subjective probabilities linking the future with an outcome

at some level of probability ranging from merely possible to virtually certain” (p. 211). Bell and colleagues proposed a model of the antecedents and consequences of justice expectancies in the domain of applicants' perceptions of selection processes.<sup>16</sup> They identified three sources of justice expectancies. The first source consists of *direct experiences* of the individual, for example, with similar procedures in the past. *Indirect influences* are the second source, for example, through communication with others. *Existing beliefs* are the third source. Such beliefs can, for example, be cultural values of the individuals (for intercultural differences in the perception of justice, see Steiner, 2001). Based on these three sources, individuals are assumed to form justice expectancies. Shapiro and Kirkman (2001) made similar arguments in their work on *anticipatory injustice*. They argue that *trust* could be the antecedent of anticipatory justice. Mayer, Davis, and Schoorman (1995) defined trust as

“the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party” (p. 711).

Therefore, trust can also be seen as an expectation focused on the agent (person or organization) and not on the resource allocation (as the justice expectation). Shapiro and Kirkman argue that this agent-focused expectation may trigger the anticipatory justice.

Despite the different denotation and the small differences in the proposed antecedents, both conceptions (Bell et al., 2004; Shapiro & Kirkman, 2001) assume that the resulting justice expectations are influencing subsequent information processing and therefore justice

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<sup>16</sup> In the following, it is argued that the basic notions of this model should also be true for other social situations.

perceptions.<sup>17</sup> This assumption is in line with findings from other domains of psychological research. So, for example, research on the *confirmatory bias* (e.g., Snyder & Swann, 1978) revealed that humans have a tendency to perceive things that they expected to perceive. It also matches the findings that individuals' perceptions are congruent with their schemas which are based on their prior experiences (Markus & Zajonc, 1985). Additional evidence stems from the realm of selective information search, which states that individuals deliberately search for information in order to confirm their initial hypotheses (e.g., Frey, 1986; Klayman & Ha, 1987). Bell and colleagues, however, see the influence of the expectations not limited to cognitive reactions. They state that justice expectations also influence affect, self-efficacy, and test-taking attitudes. Besides these affective, motivational, and cognitive reactions, justice expectancies are also assumed to influence behavior directly.

There is some empirical evidence for the assumptions of Shapiro and Kirkman (2001) and Bell and colleagues (2004). So, for example, Ritter, Fischbein, and Lord (2001) found that in the U.S., members of the black minority showed more implicit and explicit expectations of injustice when evaluating leadership behavior than white participants.<sup>18</sup> The authors argued that members of the black minority have a strong direct and indirect learning

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<sup>17</sup> Brockner and Siegel (1996) argue that trust is a result of previous perceptions of justice (for empirical evidence for this hypothesis, see Davison & Friedman, 1998). As mentioned before, Van den Bos et al. (1998) found that procedural justice can act as a proxy for trust when no reputation information is known. These two findings fit nicely with the assumptions of Bell and colleagues (2004) on the role of direct and indirect experiences and close the cycle between trust and justice.

<sup>18</sup> Interestingly, the race of the leader had no influence on this effect. Therefore, the expected discrimination was probably associated with the supervisor's role and not with the race of the supervisor.

history of discrimination that is shaping their justice expectancies. Shapiro and Kirkman (1999) found that in two companies that recently implemented self-managing work teams, anticipations of distributive injustice predicted resistance to change.<sup>19</sup> Given that justice expectations are not limited to distributive justice, such influences should also exist for procedural justice. Expected procedural injustice should also lead to the perception that a process was not just and therefore to less cooperative behavior. Bell, Wiechman and Ryan (2006) found exactly this pattern of results when examining applicants for a job as fire-fighter. Applicants who expected the procedure (especially the informational component) to be unjust at the beginning of the selection process perceived the selection process as less just in the end and reported fewer intentions to accept the job or to recommend it to others. Given these findings, one could argue that procedural justice expectations should influence cooperative behavior in exchange situations. This claim, however, has never been tested. Yet, it is also unknown if there is a direct link between expectation and behavior. In the model of Bell and colleagues (2004), it is proposed that there *is* a direct link between the expectation and the behavior. However, since the model also assumes that all three reactions (cognition, affect/attitudes, and behavior) are interrelated, there could be three paths on which justice expectancies influence behavior: First, via influencing the justice perceptions of the individual, secondly, via affect and motivational states during the procedure, and, finally, directly by influencing the behavior of the individual. In the study of Bell and colleagues (2006), procedural justice expectations predict procedural justice perceptions, behavioral intentions as well as test-taking motivation. However, since this was a correlation study, a

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<sup>19</sup> Interestingly, this effect was qualified by an interaction of anticipated distributive injustice and perceptions of procedural justice. The negative effects for anticipated distributive injustice were buffered by high perceived procedural justice of the change process. This finding, therefore, demonstrates that the influence of justice expectations on the resulting justice perceptions has its limits.

direct causal relationship between expectancy and behavior of the applicants cannot be deducted. Therefore, it is still unclear if the relationship is only mediated through justice perceptions and therefore is a *reaction* to a just or unjust procedure, or if there is also a direct cooperative *action* based on the expectation of a just procedure. Experiments 4 and 5 of the present work will explore this question by utilizing the accessibility experiences' influence on justice judgments. Based on the idea that the accessibility experience is used in the formation of justice expectations, the experimental paradigm presented in this work could manipulate procedural justice expectations without changing the procedure or the persons' information about the procedure. Based on the definitions at the beginning of this section, it is assumed that procedural justice expectations are based on the frequency and severity of procedural violations qualified by their probability. In such a judgmental process, accessibility experiences should have the same properties as in the formation of justice perceptions.<sup>20</sup> Therefore, it should be possible to manipulate the procedural justice expectation without changing the procedure itself or the participants' knowledge about the procedure. Letting

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<sup>20</sup> One may argue that forming an expectation is always a judgment under uncertainty. Therefore, it could be assumed that the motivation to reduce this uncertainty via the formation of a justice judgment should heighten the processing intensity and reduce the reliance on heuristic information like accessibility experiences. However, since this uncertainty is due to a lack of (unambiguous) information, it is more likely that individuals nevertheless have to rely on heuristic information and that the accessibility experience therefore influences the formation of the expectation (for more details, see 2.3.2 and Experiment 4). Additionally, the accessibility experience is most likely to also influence the formation of the probability estimates for the same reasons (on probability judgments and accessibility experiences, see Ofir, 2000). This idea, however, is not tested in this work.



participants start the exchange sequence in such a procedure should allow for a thorough test of the direct effect of justice expectations on cooperative behavior.

This experimental setup is not only of interest to the research on justice judgment formation. As discussed in the last section, high procedural justice is known to trigger cooperation, while low procedural justice triggers uncooperative behavior. Since uncooperative behavior can be seen as a violation of several procedural rules (e.g., the ethicality rule, Leventhal et al., 1980) and is most likely leading to an unjust distributive outcome, such behavior should trigger an uncooperative reaction from the other party. On the other hand, cooperative behavior is likely perceived as procedurally and distributively just and therefore, should trigger a cooperative reaction of the other party. Such a behavioral pattern closely resembles the simple tit-for-tat strategy which states that a player should cooperate when moving first and then mirroring the behavior of the other player. Axelrod (1984) demonstrated that such a strategy is the most successful one in computer-simulated prisoner dilemma games. While this strategy has its virtues when a mutual cooperative exchange has been successfully established (the initiating party started with a cooperative behavior), it can also lead into severe conflict spirals if this is not the case (for a similar argument in the context of uncooperative behavior in the workplace setting, see Andersson & Pearson, 1999). In order to foster cooperative behavior in negotiation situations, it seems highly important to initiate an exchange situation with a cooperative first action. If it is possible to influence the formation of procedural justice expectations (via the accessibility experience) and if these expectations directly influence cooperative behavior, this would be the basis for new tools to foster cooperative behavior in negotiation situations. The special value of such a way to foster cooperative behavior is that it does not rely on a cognitive restructuring of the individuals' conception of the situation (e.g., removal of the zero-sum-thinking, see Thompson & Hrebec, 1996). Individuals would probably not even perceive it as a persuasion attempt, therefore, the

chance to influence the cooperation behavior would be higher (e.g., Chaiken, Gruenfeld, & Judd, 2000). Given supporting empirical evidence, the experimental paradigm used in this work could be a starting point for the development of such tools to foster cooperation.

### 2.4.3 *Summary and outlook*

There is empirical evidence that individuals react towards procedural justice with cooperation while they react to procedural injustice with competition or even confrontation. Based on the model of Bell and colleagues (2004), it is assumed that the same relationship exists for procedural justice *expectations*. However, no experimental evidence is available yet to backup the claim that procedural justice expectations directly influence cooperative behavior. In the Experiments 4 and 5 of the present work, this idea was tested in exchange situations where procedural justice expectations were manipulated via the accessibility experience. It is assumed that making it easy or difficult to recall unjust aspects about a procedure that has not yet taken place influences procedural justice expectations. Having high or low procedural justice expectation about a process that is the same for all participants and that is starting with an action of the participants allows for a thorough test of this hypothesis. Given supporting empirical data, these assumptions would have numerous implications. A successful manipulation of the expectations would demonstrate the influence of the accessibility experiences not only on justice perceptions but also on justice expectations. Supporting empirical data would also generalize previous findings from the domain of applicants' reactions to cooperation behavior in general and, additionally, would be the first to demonstrate a direct effect of justice expectations on behavior. It would also be of special

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interest to applied settings by offering new ways to foster cooperation in negotiation situations.

## 2.5 Study overview

In this last section of this chapter, a short overview of the five experiments is given that are reported in the following chapter. Every experiment will be shortly described and the underlying ideas that have already been discussed in the previous sections are shortly summarized.

All current conceptions of the formation process of procedural justice judgments focus on the influence of content information about the procedure (see 2.1.2). The present work puts forward the idea that not only do individuals use the content information about the procedure in order to form procedural justice judgments but also the accessibility experiences that are associated with the retrieval of this information from memory. Experiment 1 tested this hypothesis with an experimental paradigm adopted from Schwarz and colleagues (1991): Participants either generated few (= which feels easy) or many (= which feels difficult) unfair aspects of a selection procedure that they all have experienced in the past. If the hypothesis is correct, individuals should conclude that there must have been many of these aspects (and that the procedure was therefore unjust), if it feels easy to come up with unfair aspects. However, if this task feels difficult, the conclusion should be reversed, suggesting that there could not have been many of these aspects (and that the procedure was therefore just). Such a finding would constitute the exact reversal of the pattern that content-based processing would predict. Based on the findings on reactions towards procedural justice (that are reported in the sections 2.1.1.2 and 2.3.1), it is assumed that high procedural justice judgments should lead to high acceptance of authorities and high organizational attractiveness. Consequently, the manipulation of the accessibility experience should also influence the evaluation of the organization that is in charge of the procedure.

Experiment 2 was designed to replicate the findings of Experiment 1. It also addressed the second aim of this work by examining the role of personal uncertainty as a potential moderator of the accessibility experience's influence on procedural justice judgments. Based on the idea that uncertainty is sensitizing individuals for justice relevant issues (see section 2.3.2), it is assumed that individuals are motivated to form justice judgments accurately. Since higher accuracy motivation leads to higher processing intensity and, therefore, to less use of heuristic information (if the applicable information is available), the accessibility experience is assumed to have the highest influence under personal certainty. Experiment 2 tested this hypothesis by using the same experimental manipulation as Experiment 1 (with a new target procedure) and assessing a dispositional measure of personal uncertainty. Dispositional self-uncertainty has already been shown to sensitize individuals for justice issues (De Cremer and Sedikides, 2005). Here, it is assumed that it also triggers more intense information processing. As in Experiment 1, it is proposed that the accessibility experience also influences the evaluation of the organization in charge of the procedure.

Experiment 3 was designed to replicate the findings of Experiment 2 by experimentally manipulating salience of personal uncertainty and certainty. The salience of uncertainty or certainty is hereby manipulated by the paradigm successfully introduced by Van den Bos (2001a). The same hypotheses as in Experiment 2 were tested.

Experiment 4 was designed to test if the findings of the previous experiments also generalize on justice expectations. Here, participants will either generate few (= which feels easy) or many (= which feels difficult) potentially unfair aspects of a trust game procedure that they have not yet experienced. As in Experiments 2 and 3, it is assumed that the influence of the accessibility experience on the formation of the procedural justice experiences is strongest under certainty salience. To test if the procedural justice expectation has the potential to directly influence cooperative behavior (see section 2.4.2), the intention to

cooperate is also assessed. This intention is measured by the amount of money the participants would confide to a hypothetical second player in the described trust game. It is assumed that participants who expect the procedure to be procedurally unfair would confide less money to a potential other player.

Experiment 5 was designed to replicate the findings of the Experiment 4 in a more complex exchange situation that the participants actually experience. After the assessment of their procedural justice expectation, participants interact in a more-round salary negotiation game. As in Experiments 2-4, it is assumed that the influence of the accessibility experience on the formation of the procedural justice expectation is strongest under certainty salience. This is also assumed for the procedural justice perception that is assessed after the interaction sequence. However, based on the findings of Ofir (2000) and Tybout et al. (2005) which are discussed in section 2.2.1.1, it is also assumed that only participants who gained some expertise in the rules of this negotiation procedure use the accessibility experience in their judgment formation. The question whether this metacognitive control process also affects the cooperative behavior was addressed in this experiment as well.

Together, the five experiments addressed all three aims of this work by testing the ideas that accessibility experiences influence the formation of the procedural justice judgment, that this influence is moderated by personal uncertainty, and that this finding also generalizes on justice expectations which directly influence cooperative behavior.

### 3 EMPIRICAL STUDIES

#### 3.1 Experiment 1 – The accessibility experience in procedural justice judgments

Experiment 1 was designed to address the question of whether experiences of ease or difficulty are used in the formation of procedural justice judgments. Students were asked to evaluate a nation-wide university admissions procedure. Drawing on prior research in the domain of attitude formation (e.g., Wänke et al., 1996), the ease-of-retrieval paradigm introduced by Schwarz and colleagues (1991) was used in the present experiment. Participants were asked to recall few versus many *unfair* aspects of the university admissions procedure. It was hypothesized that participants would rely on their accessibility experiences in evaluating this procedure, thus perceiving the procedure as unfair after recalling few aspects, but as fair after recalling many aspects. After all, if it was easy to come up with unfair aspects, chances are that there were many, hence the procedure could not have been fair. Conversely, if it was difficult to come up with unfair aspects, there could not have been many of them; hence the procedure would have had to be fair. Note that a content-based judgment would yield diametrically opposing results, namely an evaluation as fair after recalling few unfair aspects, and an evaluation as unfair after recalling many unfair aspects.

Given that negative procedural justice judgments have been shown to engender low organizational attractiveness (for meta-analytic evidence, see Colquitt et al., 2001) and low perceived legitimacy of authorities (Tyler & Lind, 1990; Van den Bos, Wilke, & Lind, 1998), it was further assumed that participants who generated few as compared to many unfair aspects would evaluate the institution responsible for the university admissions procedure less favorably.

### 3.1.1 Method

#### 3.1.1.1 Participants

Participants were 26 male students from the University of Mannheim, mostly students of business administration (85 %). All participants voluntarily responded to advertisements offering 1 EURO and a chocolate bar (total \$1.30 at that time) in return for taking part in an experiment labeled “Evaluation of the university admissions process.” All participants had applied for university admission through a national office (“Zentralstelle für die Vergabe von Studienplätzen” ZVS). Participants’ mean duration of study was 4.2 semesters ( $SD = 3.5$ ) and their mean age was 22.3 years ( $SD = 3.4$ ). Three participants did not adhere to experimental instructions and were therefore excluded from the analyses. Importantly, none of the significance levels reported in the following was affected by this exclusion.

#### 3.1.1.2 Design and Procedure

The design was experimental in nature, with the number of unfair aspects (2 = few vs. 4 = many) varied between participants. After responding to questions on demographic information with respect to participants’ university application procedure, participants were asked to list either two or four unfair aspects of a nation-wide university admissions procedure. An independent pre-test at the University of Mannheim had revealed that recalling two unfair aspects about this procedure is easy, while coming up with four is difficult. At the time when Experiment 1 was conducted (2004), this admissions process was mandatory for many subjects taught at the University of Mannheim, including business administration and psychology. Students applied to the ZVS, which assigned prospective students to their future alma maters, taking certain criteria into account (e.g., GPA), while neglecting others (e.g., internships in related areas). This procedure, of course, left room for dissatisfaction and



perceptions of injustice. The selection procedure was highly standardized and involved virtually no personal contact, thus making it almost an ideal evaluative target for the current research purpose. After the assessment of dependent variables and the manipulation check, participants were paid, debriefed, and thanked for their participation.

### 3.1.1.3 *Dependent variables*

Participants responded to two sets of items that measured the perceived procedural justice of the ZVS-procedure as well as participants' attitude toward the ZVS as an institution.

*Ease of retrieval.* Serving as a manipulation check, participants were asked the following two questions: "How easy or difficult was it for you to list unfair aspects of the selection procedure of the ZVS?" and "How easy or difficult would it have been for you to list more unfair aspects?" Answers were given on 9-point rating scales (1 = *very difficult*, 9 = *very easy*).

*Procedural justice.* Perceived procedural justice was assessed by asking how just (1 = *very unjust*, 9 = *very just*), how fair (1 = *very unfair*, 9 = *very fair*), and how appropriate (1 = *very inappropriate*, 9 = *very appropriate*) the ZVS-procedure was perceived by participants. Additionally, participants' satisfaction with the procedure was assessed by asking how satisfied they had been with it (1 = *very dissatisfied*, 9 = *very satisfied*).

*Attitude toward the ZVS.* Participants responded to three items that measured their attitude towards the ZVS as an institution, reading: "The ZVS accomplishes the selection task very well;" "I think the ZVS is doing a good job;" And, "The ZVS is a reasonable institution." Answers were given on 9-point rating scales (1 = *do not at all agree*, 9 = *agree completely*).

### 3.1.2 Results

#### 3.1.2.1 Manipulation check

Both items assessing how easy it was to retrieve the respective number of aspects were combined into a single index (Cronbach's  $\alpha = .92$ ). As expected, generating two unfair aspects was experienced as easier than generating four unfair aspects ( $M = 4.50, SD = 2.17$  vs.  $M = 2.29, SD = 0.91; t(21) = 3.23, p < .01$ ).

#### 3.1.2.2 Procedural justice and attitude toward the ZVS

The four items assessing procedural justice were combined into a single measure (Cronbach's  $\alpha = .94$ ).<sup>21</sup> Likewise, the three items assessing participants' attitude towards the ZVS as an institution were combined into a single index (Cronbach's  $\alpha = .88$ ). As expected, participants who generated few unfair aspects perceived the ZVS procedure as less fair than participants who generated many unfair aspects ( $M = 2.77, SD = 1.26$  vs.  $M = 4.62, SD = 1.96; t(21) = -2.65, p < .01$ ), presumably because participants relied on the experience of ease versus difficulty associated with retrieving few versus many unfair aspects. Likewise, participants' attitude toward the ZVS as an institution was less favorable after few as compared to many unfair aspects had been retrieved ( $M = 2.87, SD = 1.38$  vs.  $M = 4.44, SD = 1.88; t(21) = -2.65, p < .01$ ). Additionally, a significant correlation between procedural justice judgment and the attitude toward the ZVS was found,  $r = .66, p < .001$ . Participants with high

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<sup>21</sup> While Van den Bos, Wilke, and colleagues (1998) found that satisfaction ratings sometimes differ from justice ratings, we did not find such differences and therefore combined all four items into a single procedural justice scale.

procedural justice judgments had a more favorable attitude toward the ZVS than participants with low procedural justice judgments.

### 3.1.2.3 Additional analyses

It has sometimes been suggested that the paradigmatic task introduced by Schwarz and colleagues (1991) not only instigates different levels of accessibility experiences, but also different levels of content strength or quality. In particular, it is plausible that the strength or quality of recalled aspects decreases, the greater the number of instances that to be recalled. Given the paradigm's focus on few versus many pieces of information, it is conceivable that the content accessible within the different conditions is, on average, of differential compellingness. To rule out this alternative explanation, three independent raters, blind to the current hypothesis and experimental conditions, were asked to rate the content quality of each of the recalled aspects. In particular, each aspect was rated on a 5-point rating scale (1 = *low quality*, 5 = *high quality*). Given that interrater reliability across all four aspects was high (Cronbach's  $\alpha = .71$ ), the ratings were combined into a single index per participant and aspect. Results indicate that the average quality of aspects did not reliably differ for participants who generated two versus four aspects ( $M = 2.65$ ,  $SD = 0.70$  vs.  $M = 2.19$ ,  $SD = 0.97$ ;  $t(21) = 1.61$ , *ns*). Also, the quality of the last aspect a participant had generated did not reliably differ between participants who generated few aspects and participants who generated many aspects ( $M = 2.52$ ,  $SD = 0.78$  vs.  $M = 2.22$ ,  $SD = 0.90$ ;  $|t| < 1$ ). Consequently, it appears that differences in the quality of arguments between the experimental groups can be ruled out as an alternative explanation for the differences in the judgments of the two groups.

In order to further demonstrate the influences of the accessibility experience on the procedural justice judgment, a regression analysis with the manipulation check for

accessibility experiences and the average quality of the aspects as predictors was calculated.<sup>22</sup> As expected, the accessibility experience did significantly predict the procedural justice judgment,  $\beta = -.50$ ,  $t = -2.59$ ,  $p < .05$ . The average quality of the aspects, however, did not predict the justice judgment  $\beta = -.08$ ,  $|t| < 1$ .

### 3.1.3 Discussion

Experiment 1 tested the hypothesis that participants' evaluation of a nation-wide university admissions process as well as their judgment about the institution overseeing the process reflects the ease or difficulty with which information concerning the unfairness of the respective procedure could be brought to mind. Results strongly support this hypothesis, since participants judged the ZVS-selection procedure as more just after recalling many as compared to few unfair aspects. This result corroborates the idea that procedural justice judgments are not only on the available information available about the procedure but also on cognitive experiences triggered by the processing of this information. This influence of accessibility experiences on procedural justice judgments was even strong enough to change the attitude toward the ZVS as the responsible organization. The fact that accessibility experiences thus influenced a judgment that is itself dependent on the justice judgment (Tyler & Lind, 1990, Van den Bos, Wilke, & Lind, 1998) demonstrates the strength and importance of the present finding. Importantly, by assessing the quality of the aspects participants had

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<sup>22</sup> For the same reason, other researchers (Aarts & Dijksterhuis, 1999; Haddock, Rothman, & Schwarz, 1996; Rothman & Hardin, 1997; Ruder & Bless, 2003; Schwarz et al., 1991) have plainly calculated the correlation between the accessibility experience and the target judgment. The procedure used here, however, is a more conservative approach accounting for potential influences of the content information.

generated, alternative content-based explanations for the reported pattern of results were ruled out.

Experiment 1 revealed a clear pattern of results. However, one might argue that the strength of the reported effect was due to participants' accessibility experiences being more salient than they usually are. This is because the manipulation check was assessed before justice judgments, thus increasing salience of retrieval fluency (see Hansen & Wänke, 2005; Whittlesea & Williams, 1998). To address this objection, Experiments 2-4 checked the ease-manipulation only after justice judgments had been assessed.

### 3.2 Experiment 2 – Self-uncertainty as a moderator of the use of the accessibility experience

Experiment 2 was conducted to replicate and extend the findings reported in Experiment 1 by shedding light on the conditions that *moderate* individuals' reliance on accessible content versus accessibility experiences. Hereby, the second goal of this work is addressed, namely, whether the influence of accessibility experiences on procedural justice judgments is an ubiquitous or exceptional phenomenon. As outlined in section 2.3.2, *uncertainty* has been identified as a key motivator for individuals' preoccupation with justice issues (Lind & Van den Bos, 2002; Van den Bos & Lind, 2002, for overviews). This work will therefore focus on *personal uncertainty* as a potential moderator of the reliance on the accessibility experience. In line with other research (e.g., Hogg, 2000, 2005; McGregor, Zanna, Holmes, & Spencer, 2001; Lopes, 1987; Weary & Edwards, 1996), the *uncertainty management model* (Lind & Van den Bos, 2002; Van den Bos & Lind, 2002) assumes that individuals are motivated to reduce uncertainty in their lives. As already discussed in section 2.3.2, justice judgments are assumed to be one potential way to cope with uncertainty. Under this assumption, research on the uncertainty management model found that when individuals are uncertain, they are more sensitive towards justice issues (e.g., De Cremer & Sedikides, 2005; Diekmann, Barsness, & Sondak, 2004; Tangirala & Alge, 2006; Thau, Aquino, & Wittek, in press; Van den Bos, 2001b; Van den Bos & Miedema, 2000; Van den Bos et al., 2002; Van den Bos et al., 1998)

Based on these findings, it is reasoned that when uncertainty is high (and information about the process is available), individuals should be motivated to form accurate justice judgments to reduce uncertainty. Consequently, uncertain individuals should be motivated to process the given information extensively and therefore rely less on heuristic cues. Therefore,

it is assumed that individuals under uncertainty should be highly motivated to form an *accurate* justice judgment (in order to reduce uncertainty) and should therefore process information about the process *systematically* (if this information is available). Hence, individuals under uncertainty should rely less on heuristic cues as the accessibility experiences. Such a finding would extend the uncertainty management model (e.g., Van den Bos & Lind, 2002) and our current knowledge about the justice judgment formation in two important ways: First, it would demonstrate that subjective experience can influence the justice judgment even when justice relevant information *is* available. Second, it would also show that people high in uncertainty do process in a more content-based manner if the available information allows for doing so (see section 2.3.2 for details).

To test the hypothesis that uncertainty motivates people to process the information about the procedure more systematically, uncertainty was assessed in Experiment 2 independent of the information about the processes. Following De Cremer and Sedikides (2005), participants' self-perceived instability of self-esteem was assessed as a measure of dispositional level of self-uncertainty. It was hypothesized that participants who are dispositionally high in self-uncertainty should rely less on the accessibility experience to form a procedural justice judgment than participants dispositionally low in self-uncertainty.

In order to allow for generalization, the selection procedure in Experiment 2 was changed. In particular, instead of evaluating the procedure enforced by the ZVS, participants were now asked to evaluate a procedure called "Orientierungsprüfung" (in the following called:

“orientation exam”)<sup>23</sup> which many of the participants were still undergoing at the time of participation in the experiment.

### 3.2.1 Method

#### 3.2.1.1 Participants

Participants were 100 male students of various disciplines at the University of Mannheim. All participants voluntarily responded to advertisements offering 1 EURO and a chocolate bar (total \$1.30 at that time) in return for taking part in an experiment labeled “Evaluation of the orientation exam.” Participants’ mean duration of study was 4.9 semesters ( $SD = 4.3$ ) and mean age was 24.1 years ( $SD = 7.2$ ). Fifty-six percent of the participants had already passed the orientation exam. Given that participants’ examination status did not significantly influence procedural justice judgments or organizational attractiveness, either as a main effect or in interactions with the other two factors, participants’ exam status was excluded from the following analyses. Five participants did not list any unfair aspects of the orientation exam

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<sup>23</sup> In Germany, the federal state of Baden-Württemberg, where the University of Mannheim is located, has a state regulation that students must pass a special exam to continue in their field of study. This exam tests the knowledge that is crucial to the completion of a degree in a particular field. Each department can choose the examination content on its own, (e.g., for psychology this is often the initial exam in quantitative methods). If a student fails to pass this examination by the time he or she has completed the third semester (1.5 years), the student loses the right to study this particular subject at any university in Germany. This procedure was selected as the experimental topic because it has been the subject of controversy, and because all students at the university must take this exam.



procedure and were therefore excluded from further analyses. None of the significance levels reported in the study was affected by this exclusion.

### 3.2.1.2 *Design and Procedure*

Accessibility experiences were manipulated via the number of unfair aspects about the orientation exam procedure to be retrieved from memory (2 aspects vs. 4 aspects). As in Experiment 1, independent pre-testing at the University Mannheim had revealed that recalling two unfair aspects of the orientation exam procedure is easy, while recalling four unfair aspects is difficult. Participants were randomly assigned to one of the two conditions. After generating the requisite number of unfair aspects, participants were asked to evaluate the orientation exam procedure and, as a measure of organizational attractiveness, to evaluate a university that is using such a procedure voluntarily. After the assessment of dependent variables, self-uncertainty was assessed by means of the Labile Self-Esteem Scale (LSES; Dykman, 1998; for similar proceeding, see De Cremer & Sedikides, 2005). This 5-item measure was designed to assess the perceived instability of one's self-esteem. In line with De Cremer and Sedikides, it is assumed that participants who perceive their self-esteem as fluctuating are more self-uncertain than participants who perceive their self-esteem as stable. Example items from the LSES are: "I'm often feeling good about myself one minute, and down the next one," and, "How I feel about myself stays pretty much the same from day-to-day" (reverse coded). Answers were given on 5-point scales (1 = *not characteristic for me*, 5 = *extremely characteristic for me*). Additionally, self-esteem was assessed by the reliable and valid one-item measure introduced by Robins, Hendin, and Trzesniewski (2001), reading: "I have high self-esteem." The item was answered on a 5-point-scale (1 = *do not at all agree*,

9 = *agree completely*). This additional measure was included to assess possible effects of trait self-esteem on justice judgments and information processing.

### 3.2.1.3 *Dependent variables*

*Procedural justice.* Procedural justice judgments were assessed by asking participants how just (1 = *very unjust*, 9 = *very just*), how fair (1 = *very unfair*, 9 = *very fair*), and how appropriate (1 = *very inappropriate*, 9 = *very appropriate*) they considered the orientation exam to be.

*Organizational attractiveness.* The organizational attractiveness of a university that would use the orientation exam procedure voluntarily was assessed with three items, reading, for example, “If somebody I know is about to decide at which university to study, I would recommend this university,” and, “I would accept the offer to study at this university in any case.” Answers were given on a 9-point scales (1 = *do not at all agree*, 9 = *agree completely*).

*Ease of retrieval.* In Experiments 2 to 4, the manipulation check questions were assessed after the dependent variables to demonstrate that the results reported in Experiment 1 are not due to particular salience of the accessibility experience. The two questions read: “How easy or difficult was it for you to list unfair aspects of the orientation exam procedure?,” and, “How easy or difficult would it have been for you to list more unfair aspects?” Answers were given on 9-point scales (1 = *very difficult*, 9 = *very easy*).

### 3.2.2 Results

#### 3.2.2.1 Self-uncertainty and self-esteem

The five items assessing *self-uncertainty* were averaged into a single index (Cronbach's  $\alpha = .88$ ). The sample mean was  $M = 2.43$  ( $SD = 0.84$ ), the median was 2.4. The sample mean of *self-esteem* was  $M = 6.07$  ( $SD = 1.71$ ), the median was 6.0. Importantly, the two experimental groups did not differ either in self-esteem ( $M = 6.15$ ,  $SD = 1.69$  vs.  $M = 6.00$ ,  $SD = 1.74$ ;  $|t| < 1$ ), or in self-uncertainty ( $M = 2.33$ ,  $SD = 0.78$  vs.  $M = 2.52$ ,  $SD = 0.90$ ;  $t(93) = -1.08$ , *ns*). Following De Cremer and Sedikides (2005), self-esteem was included in all of the subsequent analyses as a covariate in order to control for possible general effects of level of self-esteem. However, no such effects were found (all  $|t|s < 1$ ) and therefore self-esteem was dropped from the analyses reported below.

#### 3.2.2.2 Manipulation check

Both items assessing how easy it was to retrieve the aspects were averaged into a single measure (Cronbach's  $\alpha = .90$ ). Attesting to the success of the selected manipulation, participants recalling two aspects perceived the task as significantly easier than participants recalling four aspects ( $M = 3.52$ ,  $SD = 2.03$  vs.  $M = 2.60$ ,  $SD = 2.61$ ;  $t(93) = 2.28$ ,  $p < .05$ ).

To ensure that level of self-uncertainty had no influence on the manipulation of accessibility experiences, a hierarchical regression analysis using the number of aspects manipulation and self-uncertainty as predictors was conducted. Following Aiken and West (1991), self-uncertainty was centered in all of the following analyses. The dummy-coded number of aspects manipulation and the continuous self-uncertainty score were entered as predictors in step 1 of the regression analysis, while the interaction term was entered in step 2.

As expected, only a significant effect of the number of aspects manipulation was found ( $\beta = -.24$ ,  $t(91) = -2.32$ ,  $p < .05$ ; all other  $|t|s < 1.05$ , *ns.*).

### 3.2.2.3 *Procedural justice*

The three items assessing procedural justice were averaged (Cronbach's  $\alpha = .88$ ) and entered as dependent variable in a hierarchical regression analysis. The number of aspects manipulation and self-uncertainty were entered as predictors in step 1 of the regression analysis, while the interaction term was entered in step 2. Procedural justice judgments were not predicted by the number of aspects,  $\beta = .01$ ,  $|t| < 1$ , but by self-uncertainty,  $\beta = .31$ ,  $t(91) = 2.03$ ,  $p < .05$ . This effect, however, was qualified by the significant interaction of self-uncertainty and the ease manipulation,  $\beta = -.49$ ,  $t(91) = -3.26$ ,  $p < .01$ ,  $\Delta R^2 = .10$ . To further explore this finding, the simple slopes were analyzed following the suggestions of Aiken and West (1991). The slopes are depicted in Figure 1. For participants with low self-uncertainty (one standard deviation below the mean, see Aiken & West, 1991), a positive slope emerged ( $\beta = .34$ ,  $t(91) = 2.37$ ,  $p < .05$ ), indicating that participants who generated few as compared to many unjust aspects rated the procedure as more unjust. In line with previous theorizing (for reviews, see Schwarz, 1998, 2004), this finding reflects that low self-uncertainty participants relied on their experiences of ease or difficulty in forming justice judgments. Conversely, for participants with high self-uncertainty (one standard deviation above the mean), a negative slope emerged ( $\beta = -.32$ ,  $t(91) = -2.26$ ,  $p < .05$ ), indicating that participants who generated many as compared to few unjust aspects rated the procedure as more unjust. Presumably, this finding reflects that dispositionally self-uncertain participants relied on the accessible content information.

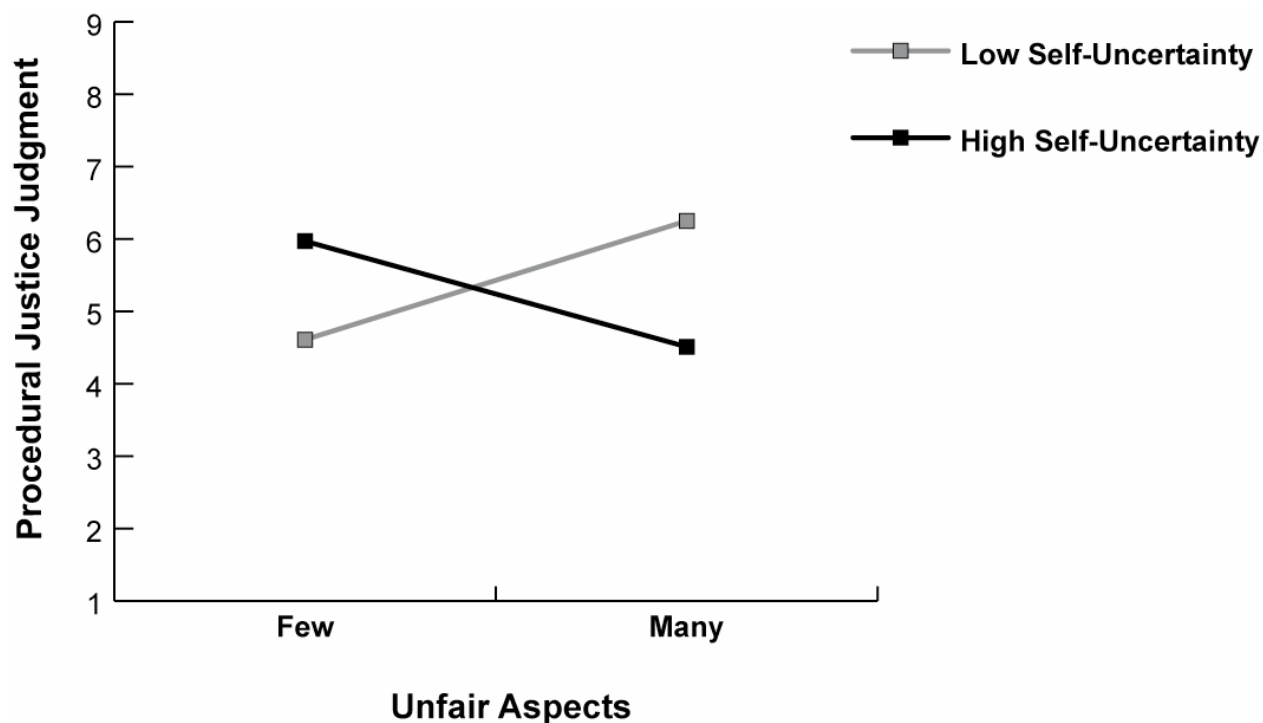


Figure 1

Procedural justice judgments as a function of number of aspects and self-uncertainty in Experiment 2.

#### 3.2.2.4 Organizational attractiveness

To test whether the result of the procedural justice judgment also applies to organizational attractiveness, the three items assessing this construct were averaged (Cronbach's  $\alpha = .89$ ) and entered as criterion variable in a hierarchical regression analysis. Organizational attractiveness was predicted neither by the number of aspects,  $\beta = .07$ ,  $|t| < 1$ , nor by self-uncertainty,  $\beta = .17$ ,  $t = 1.08$ , *ns*. The interaction term of self-uncertainty and the number of aspects manipulation, however, significantly predicted organizational attractiveness,  $\beta = -.36$ ,  $t(91) = -2.32$ ,  $p < .05$ ,  $\Delta R^2 = .06$ . To interpret this finding, another analysis of the simple

slopes was conducted. The slopes are depicted in Figure 2. When self-uncertainty was low (one standard deviation below the mean), participants who generated few aspects rated the university as less attractive than participants generating many aspects,  $\beta = .31$ ,  $t(91) = 2.14$ ,  $p < .05$ . When self-uncertainty was high (one standard deviation above the mean), there was a non-significant tendency for participants who generated few unfair aspects to rate the university as more attractive than participants who generated many unfair aspects,  $\beta = -.17$ ,  $t(91) = -1.17$ , *ns*.

Additionally, a significant correlation between the procedural justice judgment and the organizational attractiveness of the university was found,  $r = .63$ ,  $p < .001$ . Participants with high procedural justice judgments did rate the organizational attractiveness of the university higher than participants with low procedural justice judgments.

#### 3.2.2.5 Additional analyses

To refute alternative explanations for the expected ease-of-retrieval effect, we again asked three students to rate the quality of the aspects generated in both number of aspects conditions. The raters worked independently, were blind to our hypotheses, and rated each aspect on a 5-point scale (1 = *low quality*, 5 = *high quality*). Average interrater reliability over all four aspects was high (Cronbach's  $\alpha = .87$ ). Noticeably, average quality of aspects did not differ for participants who generated few as compared to many aspects ( $M = 3.21$ ,  $SD = 0.90$  vs.  $M = 3.04$ ,  $SD = 0.86$ ;  $|t| < 1$ ). Also, the quality of the last aspect a participant had generated did not differ between participants who generated few compared to many aspects ( $M = 3.06$ ,  $SD = 1.19$  vs.  $M = 2.74$ ,  $SD = 1.18$ ;  $t(93) = 1.13$ , *ns*). Thus, the quality of aspects recalled was similar across conditions.

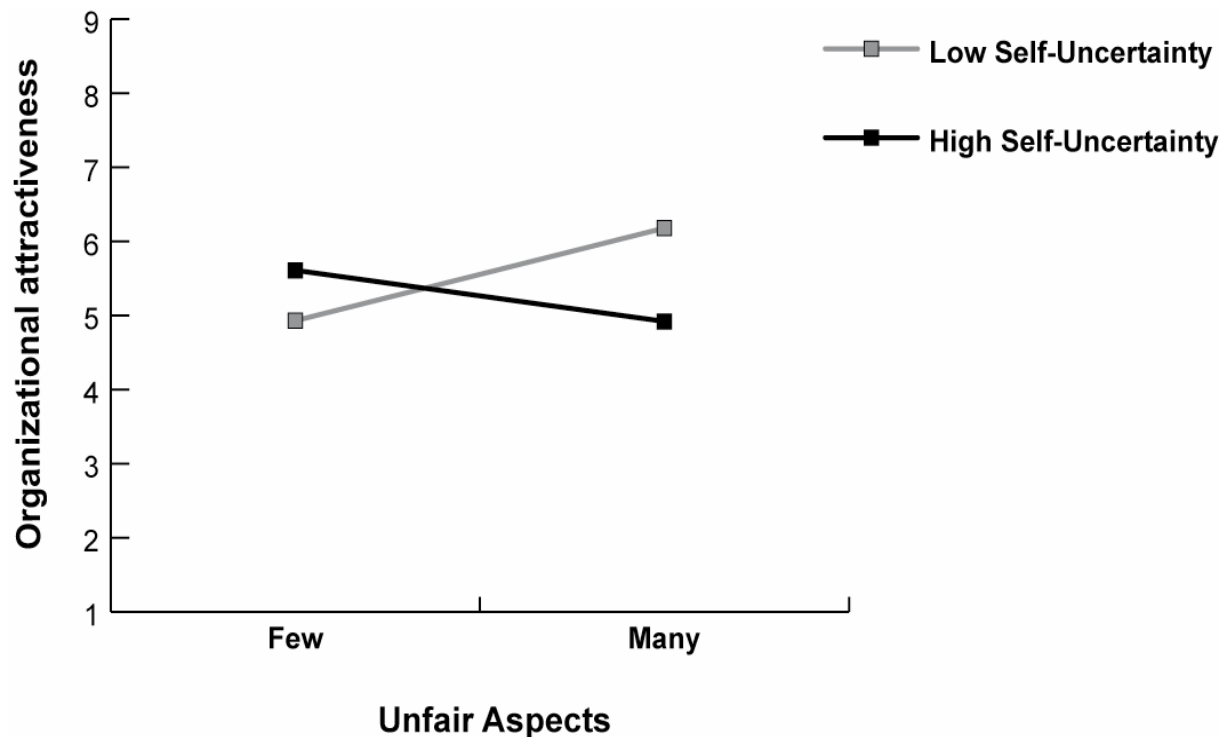


Figure 2

Organizational attractiveness of the university as a function of number of aspects and self-uncertainty in Experiment 2.

To ensure that level of self-uncertainty had no influence on the average quality of the aspects, a hierarchical regression analysis using the ease manipulation and self-uncertainty as predictors was conducted. The dummy-coded number of aspects manipulation and the continuous self-uncertainty score were entered as predictors in step 1 of the regression analysis, while the interaction term was entered in step 2. As expected, neither the number of aspects,  $|t| < 1$ , nor self-uncertainty;  $\beta = .26$ ,  $t(91) = 1.68$ , *ns*; nor the interaction;  $\beta = -.25$ ,  $t(91) = 1.58$ , *ns*; were significant predictors of the average quality of the aspects. The same results were found for the quality of the last argument.

Finally, a hierarchical regression analysis with procedural justice judgments as criterion and the average quality of the aspects, the accessibility experience manipulation check measure, self-uncertainty and all interactions as predictors was calculated. Only the accessibility experience was a highly significant predictor of the justice judgment,  $\beta = -.41$ ,  $t(87) = -4.15$ ,  $p < .001$ , showing that experienced ease of retrieval lead to lower ratings of procedural justice judgments. All other terms were not significant, all  $|t| < 1.4$ , *ns*.

### 3.2.3 Discussion

Experiment 2 set out to test the hypothesis that individuals' reliance on accessibility experiences when forming procedural justice judgments is moderated by dispositional self-uncertainty. In line with this hypothesis, results suggest that individuals low in self-uncertainty relied on their accessibility experiences to form procedural justice judgments. In contrast, individuals high in self-uncertainty seem to have relied on the accessible content information. In tendency, this differential use of content and the accompanying experiences was also reflected in the evaluation of the university's organizational attractiveness, demonstrating the impact of this effect. In combination, these results give rise to the assumption that participants with high self-uncertainty are more motivated to form accurate justice ratings in order to have valid information that can help them reduce uncertainty in their social environment. Experiment 2 hereby addressed the second aim of this work by having identified personal uncertainty as a moderator of the reliance of the accessibility experience in the formation of procedural justice judgments. The results extend the current conception of the uncertainty management model (e.g., Van den Bos & Lind, 2002) in two important ways: First, this experiment is the first demonstration that subjective experience can influence the justice judgment even when justice relevant information *is* available. Second, it also



demonstrates that people high in uncertainty do process in a more content-based manner if the available information allows for doing so.

Three further findings with respect to the number of aspects manipulation seem noteworthy. First, as in Experiment 1, the quality of the aspects in the few versus many aspects conditions did not differ. Additionally, self-uncertainty had no effect on the quality of the generated aspects. Both findings suggest that alternative content-based explanations cannot account for the reported judgmental pattern. Second, given that the relocation of the manipulation check questions to the position after the assessment of the dependent variables did not remove the effects, it appears safe to suggest that the results of Experiment 1 were not due to salience or conversational logic. Third, the results of Experiment 2 replicated those of the first experiment despite the change to another procedure (orientation exam), thus speaking to the general nature of the reported effect.

### 3.3 Experiment 3 – Uncertainty salience as a moderator

#### use of the accessibility experience

The findings reported in Experiment 2 were based on participants' self-reported uncertainty and thus leave room for alternative causal explanations about the observed differences in information processing. For example, one could argue that differences in dispositional self-uncertainty led people to be differentially motivated to generate aspects, potentially resulting in a biased generation phase. Given that self-uncertainty had no influence on the rated quality of the aspects, however, such an alternative explanation seems unlikely (see findings in section 3.2.2.5). Nevertheless, to strengthen and replicate the findings of Experiment 2, Experiment 3 was designed to experimentally make *uncertainty* or *certainty* salient. Specifically, a procedure was used that was introduced by Van den Bos (2001a), in which uncertainty is made salient by having participants answer two questions about their emotions and physical sensations when they feel uncertain (as opposed to a control group, in which participants were asked how they feel when watching TV). This manipulation has been shown to successfully influence the frequency of uncertainty-related thoughts while eliciting no affective differences between experimental groups (e.g., Van den Bos, 2001a; Van den Bos, Euwema, et al., in press; Van den Bos et al., 2005; Van den Bos, Van Ameijde, & Van Gorp, in press). In the following experiment, this procedure was adopted and extended to answer the question of whether uncertainty salience leads participants to use accessibility experiences less in procedural justice judgments (see Appendix A).

### 3.3.1 Method

#### 3.3.1.1 Participants

Participants were 131 students of various disciplines at the University of Mannheim. All participants voluntarily responded to advertisements offering 1 EURO and a chocolate bar (total \$1.30 at that time) in return for taking part in an experiment labeled “Evaluation of the orientation exam.” Forty-nine percent of participants were females. Participants’ mean duration of study was 4.2 semesters ( $SD = 3.2$ ) and mean age was 22.4 years ( $SD = 2.9$ ). Fifty-seven percent of participants had already passed the orientation exam.<sup>24</sup> Due to an experimental setting which might have impaired processing motivation (see general discussion), thirty-three participants did not write down any unfair aspects of the orientation exam procedure and therefore had to be excluded from the analyses. The number of participants per condition after the exclusion ranged from 14 to 18. None of the significance levels reported in the following were affected by this exclusion.

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<sup>24</sup> Participants who already passed the orientation exam rated the procedure as more just ( $M = 6.22$ ,  $SD = 1.87$  vs.  $M = 4.65$ ,  $SD = 2.07$ ),  $F(1, 83) = 12.47$ ,  $p < .01$ ) and the university as more attractive than participants who had not yet passed the exam ( $M = 6.57$ ,  $SD = 1.82$  vs.  $M = 5.62$ ,  $SD = 1.78$ ),  $F(1, 83) = 6.03$ ,  $p < .05$ . This result will be discussed in the General Discussion in section 4.1.1. However, similar to Experiment 2, this difference did not significantly interact with experimental manipulations, and participants were equally distributed over factorial cells; therefore, participants’ exam status was dropped from analysis.

### 3.3.1.2 *Design and Procedure*

Participants were randomly assigned to a 2 (number of aspects: few vs. many) x 3 (salience: uncertainty salient vs. certainty salient vs. control) factorial design. Apart from the following modification, the experimental procedure was similar to the one used in Experiment 2. Following retrieval of two versus four aspects, (un)certainty was made salient by means of a procedure adapted from Van den Bos (2001a). In particular, participants in the (un)certainty condition were asked to imagine being someone who feels (un)certain. Participants were asked the following two questions in written form: (1) “What emotions does the thought of your being (un)certain about yourself arouse in you?,” and (2) “What will happen physically to you as you feel (un)certain about yourself?” Participants in the control condition were asked to imagine being someone who watches TV: (1) “What emotions does the thought of you watching TV arouse in you?,” and (2) “What will happen physically to you as you watch TV?” The assessment of the dependent variables and the remaining experimental procedure closely resembled Experiment 2.

## 3.3.2 *Results and Discussion*

### 3.3.2.1 *Manipulation check*

The two items assessing accessibility experiences were averaged to form a single index (Cronbach’s  $\alpha = .88$ ) and entered into a 2 (number of aspects: few vs. many) x 3 (salience: uncertainty salient vs. certainty salient vs. control) ANOVA. As expected, generating two unfair aspects was experienced as easier than generating four unfair aspects ( $M = 3.05$ ,  $SD = 2.19$  vs.  $M = 2.23$ ,  $SD = 1.77$ ;  $F(1, 92) = 3.96$ ,  $p < .05$ ). Experienced ease of retrieval of the aspects was unaffected by the salience manipulation (main and interaction effect,  $F_s < 1$ ).

Table 1  
Means and Standard Deviations of Procedural Justice Judgments and Organizational Attractiveness of the University as a Function of Salience and Number of Aspects (Experiment 3)

Dependent variables	Salience	Number of Aspects			
		Few		Many	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Procedural justice	Uncertainty	6.33	1.16	5.90	1.79
	Certainty	4.37	2.26	6.41	1.72
	Television	5.02	2.30	5.53	2.35
Organizational attractiveness	Uncertainty	6.38	1.62	6.57	1.62
	Certainty	5.20	1.92	6.72	1.90
	Television	5.82	2.10	6.40	1.52

*Note.* Means are on 9-point scales, higher values indicate higher levels of judgments of procedural justice or organizational attractiveness of the university.

### 3.3.2.2 Procedural justice

Procedural justice items were averaged (Cronbach's  $\alpha = .87$ ) and entered into a 2 (number of aspects: few vs. many)  $\times$  3 (salience: uncertainty salient vs. certainty salient vs. control) ANOVA. As expected, there was no significant main effect of salience on the procedural justice rating,  $F(1,92) = 1.66$ , *ns*, but there was a tendency for an effect of number of aspects,  $F(1,92) = 3.08$ ,  $p < .10$ . This main effect was qualified, however, by the predicted

and significant interaction between number of aspects and salience,  $F(1,92) = 3.25, p < .05$ . As can be seen in Table 1, certainty salient participants rated the procedure as less just after retrieving few rather than many aspects ( $M = 4.37, SD = 2.26$ ;  $M = 6.41, SD = 1.72$ ;  $t(92) = -3.03, p < .01$ ). Presumably, this is because participants relied on the ease with which unfair aspects could be brought to mind. Conversely, for participants to whom uncertainty was made salient, this effect was eliminated and even slightly reversed ( $M = 6.33, SD = 1.16$ ;  $M = 5.90, SD = 1.72, |t| < 1$ ). For participants in the control condition, there was no significant difference between the number of aspects conditions ( $M = 5.02, SD = 2.30$  vs.  $M = 5.53, SD = 2.35; |t| < 1$ ).

### 3.3.2.3 Organizational attractiveness of university

The three items assessing organizational attractiveness were averaged (Cronbach's  $\alpha = .87$ ) and entered in a 2 (number of aspects: few vs. many) x 3 (salience: uncertainty salient vs. certainty salient vs. control) ANOVA. There was no significant effect of salience on organizational attractiveness ratings, ( $F < 1$ ), but a significant effect for number of aspects,  $F(1, 92) = 4.34, p < .05$ . Participants who generated few arguments rated the attractiveness of the university lower than participants generating many aspects ( $M = 5.76, SD = 1.93$  vs.  $M = 6.57, SD = 1.68$ ). The interaction between number of aspects and salience was not significant,  $F(1, 92) = 1.21, ns$ . Planned contrasts, however, revealed a pattern similar to that reported for procedural justice judgments. Specifically, in the certainty salient condition, participants who generated few aspects rated the organization as less attractive ( $M = 5.20, SD = 1.92$ ) than participants who generated four arguments ( $M = 6.72, SD = 1.91$ ),  $t(92) = -2.50, p < .05$ . Conversely, in the uncertainty salient condition, no significant difference between participants who had generated few rather than many unfair aspects of the procedure was found ( $M = 6.38,$

$SD = 1.62$  vs.  $M = 6.57$ ,  $SD = 1.62$ ;  $|t| < 1$ ). In the control condition this difference was also non-significant ( $M = 5.82$ ,  $SD = 2.10$  vs.  $M = 6.40$ ,  $SD = 1.53$ ;  $|t| < 1$ ). The significant main effect of the number of aspects conditions and the non-significant interaction with salience suggests that there is an overall influence of accessibility experiences on organizational attractiveness judgments. However, planned contrasts revealed that the effect of accessibility experiences on organizational attractiveness of the university was entirely driven by the differences in the conditions where certainty was salient. Since ordinal interactions are difficult to detect, Bobko (1986) suggested testing whether the control cells differ from each other significantly. If not, they should be pooled and tested against the critical cells, which should differ from all other cells. In the present study, the control cells (all but the certainty salient, few arguments) did not differ from each other (all  $|t| < 1$ ). The pooled cells, however, did differ from the critical cell (certainty salient, few arguments),  $t(92) = -2.45$ ,  $p < .05$ . Hence, participants for whom certainty had been experimentally made salient and who generated few unfair aspects of the procedure rated the organization as less attractive than participants in all other conditions. Since Bobko's original approach was criticized for methodological reasons, Strube and Bobko (1989) suggested two alternative ways to conduct a series of planned contrasts to test ordinal interactions. With respect to the current data, both alternative approaches yielded the same result as the original approach. Consequently, it appears safe to suggest that the influence of accessibility experiences on both justice judgments and organizational attractiveness judgments is especially strong if certainty is salient.

Additionally, a significant correlation between the procedural justice judgment and the organizational attractiveness of the university was found,  $r = .61$ ,  $p < .001$ . Participants with high procedural justice judgments did rate the organizational attractiveness of the university higher than participants with low procedural justice judgments. This finding as well as the

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parallel findings in the Experiments 1 and 2, replicated impressively the close relationship between the procedural justice judgment and organizational outcomes known from previous research (see Colquitt et al., 2001).



### **3.4 Experiment 4 – The accessibility experience in procedural justice expectations and cooperative behavior**

The previous three experiments dealt with the first two aims of this dissertation. They demonstrated that accessibility experiences are indeed used as a cue in the formation of procedural justice judgments and that this usage is moderated by dispositional and situational uncertainty. Experiment 4 was designed to address the third aim of the present work, namely, the applications of the reported findings to basic and applied problems. In order to achieve this, Experiment 4 examined whether the findings of the previous experiments do also generalize on procedural justice *expectations*. In Experiments 2 and 3, it was demonstrated that the accessibility experience influences the formation of procedural justice perceptions regardless of whether the procedure is still going on or is already finished. In Experiment 4, it was examined whether this is also true for justice expectations about procedures that have not yet started. As already mentioned in section 2.4.2, it is assumed that these procedural justice expectations are formed based on past experiences and information about the procedure that is already known. In such a judgment formation process the accessibility experiences could, as before, function as a cue for the frequency of potential rule violations. However, one may argue that situations in which expectancies are formed are always situations under uncertainty. This should lead individuals to process information more intensively and therefore to rely less on the accessibility experience (see section 2.3.2). Yet, given that in this setting participants have complete information about the formal aspects of the procedure, informational uncertainty should be moderate. Therefore, it appears possible that accessibility experiences influence the procedural justice expectations. Note, however, that this setting is a very conservative test of the hypothesis that accessibility experiences influence procedural justice judgments. In order to avoid that the manipulation of uncertainty is confounded with the general informational uncertainty in this kind of situation, the personal uncertainty salience

manipulation from Experiment 3 is used again. In line with the findings of Experiment 3, it is assumed that the influence of the accessibility experience should be strongest when certainty is salient. Therefore, in the condition of certainty salience participants should expect the procedure to be less fair generating few potentially unfair aspects of the procedure than participants who generate many unfair aspects. For participants to whom uncertainty is salient this effect should be eliminated or even reversed.

Besides this generalization of accessibility experiences' influence on procedural justice expectations, the main focus of the present experiment is to examine the relationship between justice expectations and cooperative behavior. It is assumed that high procedural justice expectations directly lead to more cooperative behavior (for details, see section 2.4.2). Given the fact that in the current paradigm the expectation is manipulated without changing the procedure or the information about the procedure, this is an excellent setting to test this hypothesis. In the current experiment a setup was used in which participants read a scenario about a hypothetical trust game experiment. The trust game (Berg, Dickhaut, & McCabe, 1995) is a sequential economic game in which two players can interact in a cooperative or uncooperative way. Both players start with a certain amount of money (here 10 EUR). Player A (this player is often called *trustor*; in order to make the procedure as simple as possible to the participants, this player was called *sender* in the present experiment) can confide any amount of his or her asset to Player B (often called *trustee*, in the present experiment: *receiver*). In the account of the receiver the money confided by the sender is quadrupled. In the second stage of the experimental procedure the receiver can now decide how much money he or she will give back to the sender. The money that is given back does not multiply in the account of the sender. This simple experimental game was chosen in the present experiment for a number of reasons. First, it is easy to let participants act first by telling all of them that

they would act as sender. Second, from the standpoint of normative game theory the unique Nash equilibrium prediction of this game (given perfect information) is to send no money at all.<sup>25</sup> In empirical tests, however, Berg and colleagues' (1995) participants sent on average about half of the money to the receiver. Ortman, Fitzgerald, and Boeing (2000) found that this result is very robust. In order to confide some anonymous receiver money, the sender must *trust* the receiver. In section 2.4.2 it was already mentioned that procedural justice judgments are strongly interrelated. Brockner and Siegel (1996) argue that justice judgments are antecedents of trust (for empirical evidence, see Davison & Friedman, 1998). Additionally, Van den Bos and colleagues (1998) found that procedural justice can function as a substitute for trust if no reputation information is available. Since in this hypothetical scenario no information about the receiver is disclosed, the procedural justice judgment should function as a substitute for the non-existent information on the trustworthiness of the receiver. Based on this it is assumed that the procedural justice judgment is directly influencing cooperative behavior. Players expecting a just procedure should confide more money to the receiver.

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<sup>25</sup> In non-mathematical terms the arguments goes a follows: Since the receiver will lose money when he or she is sending money back to the sender, the rational choice for the receiver would be not to cooperate. A rational sender assuming that the receiver also acts rational should therefore send no money to the receiver. In the original game of Berg and colleagues (1995), the amount confided by the sender was not quadrupled but tripled. This change in the present experiment was made in order to highlight the benefit of a cooperative strategy, it does, however, not change the prediction of a non-cooperative strategy.

### 3.4.1 Method

#### 3.4.1.1 Participants

Participants were 60 students of various disciplines at the University of Mannheim. All participants voluntarily responded to advertisements offering 1 EURO and a chocolate bar (total 1.30 US, at that time) in return for taking part in an experiment labeled “Pre-study for a decision-making experiment”. Thirty-eight percent of participants were females. Participants’ mean duration of study was 3.5 semester ( $SD = 3.2$ ) and mean age was 21.8 years ( $SD = 2.3$ ).

#### 3.4.1.2 Design and Procedure

Participants were randomly assigned to a 2 (number of aspects: few vs. many) x 2 (salience: uncertainty salient vs. certainty salient) factorial design. The participants were instructed to read a short description of a trust game. They were told that they should put themselves into the position of the *sender* and act as if they would be in this situation. Also, participants were informed that the situation was hypothetical and that they would receive a fixed compensation (1 EURO and a chocolate bar) independent from the decision in the scenario. After this they were explained the trust game (for the exact wording, see Appendix B). Next, the manipulation of the accessibility experience was given by asking them to generate either two or four aspects of the game that are unfair for them as senders. Independent pre-testing at the University Mannheim had revealed that recalling two aspects of the game that are unfair for them as senders is easy, while recalling four unfair aspects is difficult. Following this, salience of uncertainty or certainty was manipulated the same way as in Experiment 3. After the assessment of dependent variables and the manipulation checks, participants were paid, debriefed, and thanked for their participation.

### 3.4.1.3 *Dependent variables*

*Procedural justice expectations.* Procedural justice expectations were assessed by asking the following three questions: “From the perspective of the sender the game is unfair”(reverse coded), “From the perspective of the sender the procedure is just” and “The procedure of the game is appropriate from the perspective of the sender”. Answers were given on 9-point rating scales (1 = *does not apply*, 9 = *does apply*).

*Amount of money confided to the receiver.* Participants were asked to indicate how much money they would confide to the receiver (Player B). Participants could confide zero to ten Euros (in 1-Euro steps) to the receiver.

*Ease of retrieval.* Serving as a manipulation check for accessibility experiences, participants were asked the following two questions: ”How easy or difficult was it for you to list unfair aspects of the sender/receiver game?” and “How easy or difficult would it have been for you to list more unfair aspects?” Answers were given on 9-point rating scales (1 = *very difficult*, 9 = *very easy*).

*Salience.* In order to test if the manipulation of salience influenced the frequency of uncertainty and certainty related thoughts a short manipulation check was included (for a similar measure, see Van den Bos et al., 2005). The salience manipulation was checked by asking participants whether they had been thinking about uncertainty when they were writing down their answers (1 = *definitely did not*, 7 = *definitely did*, reverse coded) and to what extent (1 = *very weak*, 7 = *very strong*), and whether (1 = *definitely did not*, 7 = *definitely did*, reverse coded) and to what extent (1 = *very weak*, 7 = *very strong*) they had been thinking about certainty when they were writing down their answers.

### 3.4.2 Results

#### 3.4.2.1 Manipulation checks

*Ease of retrieval.* The two items assessing accessibility experiences were averaged to form a single index (Cronbach's  $\alpha = .75$ ) and entered into a 2 (number of aspects: few vs. many) x 2 (salience: uncertainty salient vs. certainty salient) ANOVA. As expected, generating two unfair aspects was experienced as being easier than generating four unfair aspects ( $M = 3.35, SD = 2.09$  vs.  $M = 2.20, SD = 1.60$ ;  $F(1, 56) = 5.67, p < .05$ ). Experienced ease of retrieval was unaffected by the salience manipulation (main and interaction effect,  $F_s < 1.01$ ).

*Salience.* The two items assessing uncertainty thoughts (Cronbach's  $\alpha = .84$ ) were averaged to form a single index. The same was done for the two items assessing certainty thoughts (Cronbach's  $\alpha = .83$ ). A 2 (number of aspects: few vs. many) x 2 (salience: uncertainty salient vs. certainty salient) multivariate analysis of variance (MANOVA) on the uncertainty and certainty salience scales indicated only a main effect of the salience manipulation at both the multivariate level and the univariate levels: multivariate  $F(2, 55) = 11.54, p < .001$ ; for the uncertainty salience,  $F(1, 56) = 4.66, p < .05$ ; for the certainty salience,  $F(1, 56) = 21.33, p < .001$ . As expected, uncertainty was more salient in the uncertainty condition ( $M = 5.23, SD = 2.12$ ) than in the certainty condition ( $M = 4.00, SD = 2.22$ ). Similarly, certainty was more salient in the certainty condition ( $M = 6.17, SD = 1.96$ ) than in the uncertainty condition ( $M = 3.92, SD = 1.81$ ).

Table 2

Means and Standard Deviations of Procedural Justice Expectations and Amount of Money Confided to the Receiver as a Function of Salience and Number of Aspects (Experiment 4)

Dependent variables	Salience	Number of Aspects			
		Few		Many	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Procedural justice expectations	Uncertainty	4.38	1.50	4.02	1.73
	Certainty	3.53	1.74	5.16	2.11
Amount of money confided to the receiver	Uncertainty	7.07	2.40	5.60	3.16
	Certainty	4.33	2.77	6.27	3.67

*Note.* Means of procedural justice expectations on 9-point scales, higher values indicate higher levels of justice expectations. The amount of money confided to the receiver ranges from 0 to 10 Euros.

### 3.4.2.2 Procedural justice expectations

Procedural justice expectations items were averaged (Cronbach's  $\alpha = .81$ ) and entered into a 2 (number of aspects: few vs. many) x 2 (salience: uncertainty salient vs. certainty salient) ANOVA. There were no significant main effects for salience on the procedural justice expectation rating,  $F < 1$ , and for number of aspects,  $F(1,56) = 1.89$ , *ns*. As expected, the interaction between number of aspects and salience was significant,  $F(1,56) = 4.60$ ,  $p < .05$ . As can be seen in Table 2, certainty salient participants expected the procedure to be less just after retrieving few rather than many aspects ( $M = 3.53$ ,  $SD = 1.74$ ;  $M = 5.16$ ,  $SD = 2.11$ ;

$t(56) = -2.49, p < .01$ ). For participants to whom uncertainty was made salient this effect was eliminated and even slightly reversed ( $M = 4.38, SD = 1.50; M = 4.02, SD = 1.73; |t| < 1$ ).

### 3.4.2.3 Amount of money confided to the receiver.

The amount of money confided to the other player was also entered into a 2 (number of aspects: few vs. many) x 2 (salience: uncertainty salient vs. certainty salient) ANOVA. There were no significant main effects for number of aspects,  $F < 1$ , and for salience,  $F(1, 56) = 1.89, ns$ , on the money given. As expected, the interaction between number of aspects and salience was significant,  $F(1, 56) = 4.72, p < .05$ . Certainty salient participants confided less money to the other player after retrieving few than many aspects ( $M = 4.33, SD = 2.77; M = 6.27, SD = 3.67; t(56) = -1.75, p < .05$ ). Conversely, for participants to whom uncertainty was made salient this effect was slightly reversed ( $M = 7.07, SD = 2.40; M = 5.60, SD = 3.14, p < .10$ ). Additionally, a significant correlation between procedural justice expectations and the money confided to the other player was found,  $r = .26, p < .05$ . Participants with high procedural justice expectations did confide more money to the hypothetical other player than participants with low procedural justice expectations.

### 3.4.2.4 Additional analysis

To refute alternative explanations for the expected ease-of-retrieval effect, again three students were asked to rate the quality of the aspects generated in both number of aspects conditions. The raters worked independently, were blind to our hypotheses, and rated each aspect on a 5-point scale (1 = low quality, 5 = high quality). Average interrater reliability over all four aspects was high (Cronbach's  $\alpha = .82$ ). The average quality of all aspects was entered



into a 2 (number of aspects: few vs. many) x 2 (salience: uncertainty salient vs. certainty salient) ANOVA. As expected, there were no significant main or interaction effects for the number of aspects and salience on the average quality of all aspects, all  $F_s < 1$ . The same analysis was also conducted for the average quality of the last argument. This analysis did also reveal no significant main or interaction effects for the number of aspects and salience on the average quality of the last argument, all  $F_s < 1$ .

Additionally, separate regression analyses for the salience conditions with procedural justice expectations as criterion and the average quality of the aspects and the accessibility experience manipulation check measure as predictors were calculated. In the certainty salient condition, the accessibility experience was a tendentially significant predictor,  $\beta = -.35$ ,  $t = -1.94$ ,  $p < .10$ , showing that experienced ease of retrieval tendentially lead to lower ratings of justice expectations. The average quality of the aspects was no significant predictor,  $\beta = .09$ ,  $|t| < 1$ . In the uncertainty condition, both the average quality,  $\beta = -.19$ ,  $|t| < 1$ , and the accessibility experience  $\beta = -.08$ ,  $|t| < 1$ , were no significant predictors of the procedural justice expectations.

### 3.4.3 Discussion

The results of Experiment 4 support the hypotheses set forth in the present experiment. First, the accessibility experiences also influenced the formation of justice expectations. Second, in line with the moderation hypothesis this was only the case for participants to whom certainty was salient. Participants to whom uncertainty was salient did not show such a strong reliance on this heuristic cue. Presumably, they were more motivated to form an accurate justice judgment and therefore did not rely so strongly on heuristic cues. This result replicated the findings of the previous experiments and generalized them on justice

expectations. Third, the successful manipulation of the justice expectations without a change in the procedure, did also allow for the first experimental test of the hypothesis that procedural justice expectations directly influence cooperation behavior. Indeed, it was found that participants expecting the procedure to be just did confide more Euros to the other (hypothetical) player than participants with low procedural justice expectations. This finding has implications not only to the research on justice judgments but also to the research on conflict resolution because it demonstrates a potential new way to foster cooperation without actually changing the procedure. This will be discussed in more detail in section 4.4 (General Discussion).

Despite the consistency of the findings, one minor concern with Experiment 4 has to be addressed. The hypotheticality of the situation could have led the participants to state unrealistic behavioral intentions. This, however, seems very unlikely given that mean amount that participants would have confided to the other player ( $M = 5.82$ , of 10 Euros) in this experiment is closely matching to the amount confided by the participants ( $M = 5.36$ , of \$10) in the original study of Berg and colleagues (1995), where participants actually received the money. Nevertheless, this concern will be addressed in Experiment 5 by introducing an experimental setting in which the actual cooperation behavior is assessed.

### 3.5 Experiment 5 – The accessibility experience in complex negotiation situations

The aim of Experiment 5 was to replicate the findings of Experiment 4 in a more complex exchange situation in which participants' actual behavior was assessed. Besides the replication of the last experiment, Experiment 5 examined also some new research questions. In Experiment 4, the behavioral intention was closely linked to having trust in the other player, a variable that is known for its relatedness to procedural justice judgments (e.g., Brockner & Siegel, 1996). In Experiment 5, an experimental procedure was used that simulates a salary negotiation situation, a situation that is less closely linked to procedural justice judgments. This new experimental paradigm was a complex principal-agent-game (cf. Fehr, Kirchsteiger, & Riedel, 1993; Fehr, Klein, & Schmidt, 2001). In this game, participants *negotiate earnings and wages* over three rounds with another person (who was in fact simulated by the computer). An interesting feature of this setting was that a procedure was used in which the participants had to interact and negotiate with the other person over three rounds in order to achieve *any monetary gain*. This setting should allow for closer examination of participants' *actions* when they expect a fair or unfair procedure.

Besides the measurement of the actual cooperation behavior and the different task structure, the principal-agent-game also allowed for investigating the moderating role of expertise on the usage of the accessibility experience in the formation of procedural justice judgments. As already mentioned in section 2.2.1.1, accessibility experiences are unlikely to be used by individuals if they regard these feelings as non-diagnostic (Biller et al., 1992; Briñol et al., 2006; Sanna & Schwarz, 2003; Tybout et al., 2005; Winkielman et al., 1998). Since the procedures evaluated in the previous four experiments were either known to the participants (e.g., university admissions process, orientation exam) or were easy to understand (e.g., trust game), expertise is unlikely to have played a moderating role in these judgments. In Experiment 5, however, participants were confronted with a complex procedure that was,

in this particular configuration, likely to be unknown to the great majority. Consequently, the hypotheses of the last experiment were extended. As in Experiment 4, it was assumed that the influence of the accessibility experience should be strongest when certainty is salient. Hence, participants generating few potentially unfair aspects of the procedure should expect the procedure to be less fair than participants who generate many unfair aspects. For participants to whom uncertainty is salient, this effect should be eliminated or even reversed. This pattern, however, should only be found for participants who gained a subjectively adequate understanding of the game. For participants experiencing that they did not understand the game's rules adequately, no differences or a content-based processing should be found.<sup>26</sup> This prediction should also hold for the procedural justice perceptions formed after the end of the procedure. Since accessibility experiences are used partly automatic (e.g., Whittlesea & Williams, 1998) and the non-usage of the experience in the judgment formation needs cognitive control processes (e.g., Menon & Raghurir, 2003), this moderation effect of expertise constitutes as *bias correction process*. Participants with low expertise correct in a controlled process for the unwanted influences of non-diagnostic accessibility experiences.

Whether this correction process also influences cooperation behavior, is, however, a more complex question. As in the last experiment, it was assumed that participants base their cooperation behavior on the procedural justice expectations. However, it remained an open question if the correction process for low expertise is also found on the behavioral measure. But why should individuals correct for their low expertise in the procedural justice

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<sup>26</sup> The evidence accrued by Ofir (2000) as well as Tybout and colleagues (2005) suggests content-based processing also for individuals with *very high expertise*. Due to the fact that participants did not know the game before, it seems unlikely that they would reach such a level of expertise in the limited time of the experiment. Based on this reasoning, the hypothesis is only specified for individuals with low and high expertise.

expectation and then use the 'biased' original judgment anyway? The reason for this may lie in the correction process itself. As discussed in section 2.2.1, the influences of accessibility experiences on judgments are mediated through naïve theories that individuals hold about the working of their memory. Similarly, in correcting for biasing information, individuals also use these naïve theories, too. In order to correct for certain information, individuals need to know in which way this information alters our judgments in order to counteract its influences. This straightforward idea was, amongst others, put forward by Wegener and Petty (1997) in their *flexible correction model*. They state that individuals cannot correct for influences which they have no metacognitive knowledge about. This idea was, for example, demonstrated in the work of Sczesny and Kühnen (2004). They found that in the assessment of leadership competence, individuals corrected for stereotypic biases based on the gender of the target person. Individuals had metacognitive knowledge about the influences of gender stereotypes and corrected for them. In fact, they even overcorrected because they overestimated the influence of the stereotypic gender information on their judgments. However, this correction process was only possible under low cognitive load, since high mental capacity is needed in order to monitor and control this correction process. Interestingly, individuals did not correct for feminine or masculine physical appearance, independently of their mental capacity. This was due to their lack of metacognitive knowledge about the potentially biasing influence of this information. Similar results were found for American judges, who corrected for race when determining the length of a prison sentence. However, they did not correct for the biasing information of afrocentric facial features in both Black and White inmates (Blair, Judd, & Chapleau, 2004). So, one may conclude that individuals need metacognitive knowledge about the influence of certain information and need to be able to exert control in order to monitor this correction process. If we want to know why there may be no correction process for low expertise found on cooperation behavior, we should have a closer look at the

metacognitive knowledge individuals have about the influence of procedural justice judgments on negotiation behavior. In negotiation situations like the one in Experiment 5, the structure of the negotiation does not rely on trust. Participants could therefore easily come to the conclusion that their negotiation behavior is not based on procedural justice judgments at all. This is in line with the assumptions of Miller (1999), who argues that self-interest is not only assumed by behavioral researchers as a powerful motive of human behavior but also be laypeople. In other words, individuals often (and according to Miller too often) use their naïve theory about being guided by self-interest to explain their behavior. In such situations, individuals would therefore not monitor the formation of their behavioral intention with regard to the procedural justice judgment, as they would have no metacognitive knowledge about its influence on behavioral intention. Therefore, an at least partly automatically formed procedural justice judgment could influence the behavioral intention without triggering controlled correction processes. Recent research on the formation of justice judgments has shown that justice-related concepts are automatically (i.e., without explicit intentions, awareness, or control and with short processing time) activated (Ham & Van den Bos, 2006). In section 2.2.1.1, it was already stated that the accessibility experiences' usage in the judgments could be also partly automatic (e.g., Whittlesea & Williams, 1998) and that the monitoring of this usage is a controlled process (e.g., Menon & Raghurir, 2003). Therefore, it seems possible that a procedural justice expectation influenced by the accessibility experience is used in the formation of a behavioral intention without being corrected for low expertise. Experiment 5 offered an opportunity to test whether individuals use procedural justice judgments unintentionally in some negotiation situations.

In sum, it was expected for Experiment 5 that the accessibility experience would influence the formation of procedural justice expectations and perceptions when certainty is

salient. For participants to whom uncertainty is salient, this effect should be eliminated or even reversed. This pattern, however, should only be found for participants who gained an adequate understanding of the game. For participants experiencing that they did not understand the game's rules adequately, no experience-based or even a content-based processing was predicted. For cooperation behavior, it was assumed that under certainty, participants who generated few unfair aspects would act less cooperative than participants who generated many unfair aspects. For participants to whom uncertainty is salient, this effect should be eliminated or even reversed. It was an open empirical question if the metacognitive control process for low expertise would also apply for the cooperation behavior.

### *3.5.1 Method*

#### *3.5.1.1 Participants*

Participants were 104 students of various disciplines at the University of Mannheim. All participants voluntarily responded to advertisements offering a chocolate bar and a variable, performance-related sum of money up to 6 Euro (\$7.80 at that time) in an experiment labeled "Behavior in online-negotiations". Thirty-nine percent of participants were females and mean age was 22.5 years ( $SD = 2.5$ ). Two participants did not list any unfair aspects of the negotiation procedure and one participant did not fill out the salience manipulation correctly. These three participants were excluded from further analyses.

### 3.5.1.2 *Design and Procedure*

The design of the study was a 2 (number of aspects: few vs. many) x 2 (salience: uncertainty salient vs. certainty salient) x 2 (expertise: high vs. low) factorial design. The first two factors were experimental in nature. The expertise factor was a median-split measure for participants' performance in the trial sequences. In order to make the cover story more realistic, the experiment was programmed as a web-study. All experimental sessions, however, were conducted in the laboratory with each participant seated in a separate cubical in front of a portable PC connected to the internet. The experimental procedure was a modified version of a principal-agent-game that is used in experimental economics to examine the influence of fairness on market pricing and cooperation behavior (cf. Fehr, Kirchsteiger, & Riedel, 1993; Fehr, Klein, & Schmidt, 2001). The experiment consisted of four phases: (1) the learning phase in which the participants were introduced to the rules of the game; (2) the training phase; (3) the actual interaction phase; (4) the assessment phase in which the participants evaluated the procedure and the outcome.

*Learning phase.* In the first phase of the experiment, the participants were told that they would interact with another person in a negotiation situation via the internet. Either they themselves or the interaction partner would be the employer or the employee, respectively. Participants were told that they would be randomly assigned to their role and that the money they would earn in the negotiation would be transferred into Euro at the end of the study. Each credit point in the game was worth 0.05 Euro (\$0.06 at that time), and negative earnings were treated as zero earnings. Participants were told that the other player was located in another room in a different building of the university and that the game was played anonymously. The participants were informed that they would always negotiate with the same person in all three rounds. Yet, in fact, there was no second player. The moves of the second player were



simulated by a PHP-script. Of course, all participants received the feedback that they were randomly chosen for the role of the *employer*. Then, the instruction with the rules of the game appeared on the computer screen. The game was described as a salary negotiation with a total of three negotiation rounds. In the beginning of each round, the employer (the participant) made an offer to the employee (presumably another participant, in fact the computer). The offer consisted of a demanded amount of work (1 to 10 work points) and an offered wage (1 to 100 credit points). Participants could calculate their earnings as employers by multiplying the demanded work points with ten and subtracting the offered wage. Participants were also able to calculate the earnings of the employee by subtracting the costs of the work points for the employer (for the table used in the experiment, see Appendix B) from the offered wage. After the employer had proposed an offer, the employee could accept the offer or reject it. In case of a rejection, both players would not earn anything in this round. In case of acceptance, the employee could decide to either contribute exactly the demanded work points or more. The computer was programmed in a way that every offer that left the employee with a positive earning not more than 10 points less than the earnings of the employer was accepted.<sup>27</sup> The computer always contributed exactly the demanded work points. In order to do these calculations participants had pocket calculators on their tables. Participants were told

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<sup>27</sup> Therefore, the employee demanded 38% of the total earnings of a negotiation sequence in case of a demand of 10 work points and demanded 0% of the global earnings in case of a demand of 1 work point (see also Appendix C and D). Note that the advertisement for the experiment was logically incorrect since, in theory, the game's rules would have allowed for earnings up to 15 Euros. However, the PHP-script limited the maximum earning to 7.65 Euros. For ethical reasons, it was chosen to advertise the experiment with an even lower maximum earning since it was very unlikely that a participant would reach this earning. The apprehension that participants would infer from this advertisement what the optimal strategy in the game would look like was not confirmed by the outcomes and the post-experimental interviews.

that the earnings would be immediately transferred to the employer's and employee's accounts after the employee made his or her decision. At the end of each round, participants got a summary of their offer, the decision of the employee, and the current balance of their own and the employee's account. After this summary, the next round started. At the end of the three rounds, participants (as employers) had the chance to voluntarily give a bonus or to punish the employee. In order to give a bonus to the employee, they had to sacrifice points from their account which were doubled and transferred to the employee's account. To punish the employee they also had to sacrifice points from their account. Every two sacrificed points destroyed one point on the employee's account. The rules of the game and the exact wording of the description are given in Appendix C.

*Training phase.* After the rules were explained to the participants, they had to do three trial rounds in which they could choose an offer and then had to calculate their own earnings, the work costs for the employee (which they could read in a table given on the computer screen), and the earnings of the employee. The computer gave instant feedback on the calculations and in case of a wrong answer participants had to correct their calculations. The computer only proceeded to the next trial round or the main part of the experiment when all three entries correctly corresponded to the offer. The number of mistakes made in these three trial rounds was summed up as a measure of the participants' expertise in the game procedure. The mean number of mistakes made in the trial rounds was  $M = 1.28$  ( $SD = 1.98$ ) and the median was 0. Since 52% of the participants did not make any mistakes, the expertise factor was realized as a median split separating the participants who made no mistakes from the

participants who made mistakes in the trial rounds.<sup>28</sup> This operationalization of expertise offers a number of advantages in comparison with self-rated expertise assessment. First, it minimizes error variance stemming from interpersonal differences in social desirability, self-esteem protection, or concepts of competence. It also has a high external validity due to its unobtrusiveness and it does not fall prey to retrospective appraisals of expertise after failure or success (e.g., Ross & Wilson, 2000). Consequently, it appears to be a valid and reliable assessment of a participant's expertise in the experimental setting and, due to the instant feedback participants got after each mistake they made, this should also have been apparent to them.<sup>29</sup> After the three trial rounds, participants were asked four additional questions about their understanding of the bonus and penalty regulations before the main part of the experiment started.

*Interaction phase.* At the beginning of the second phase of the experiment, accessibility experience was manipulated via the number of unfair aspects of the negotiation procedure from the perspective of the employer. Participants had to either retrieve two or four unfair aspects from memory. Independent pre-testing at the University of Mannheim had revealed that recalling two unfair aspects of the negotiation procedure from the perspective of the employer is easy, while recalling four unfair aspects is difficult. Participants were randomly assigned to one of the ease of retrieval conditions. After generation of the respective number of unfair aspects, the manipulation check for the accessibility experience was assessed. Next,

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<sup>28</sup> A regression analysis seemed contraindicated due to the asymmetrical distribution of the predictor, possibly resulting in non-normal distribution of the error terms.

<sup>29</sup> As for all other potential measures of expertise, high levels of this measure (no mistakes) may be confounded with high motivation and high mental capacity. However, since both factors would predict less reliance on the accessibility (see sections 2.2.1.2 and 2.2.1.3) this would not limit the interpretability of the results.

the manipulation of (un)certainty salience followed. This manipulation was the same as in Experiments 3 and 4. Participants were randomly assigned to one of the salience conditions. After this, all participants completed the short version (Mackinnon et al, 1999) of the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). Following previous uncertainty salience studies (e.g., Van den Bos, 2001a), the PANAS was included in order to determine if the salience manipulation influences positive and negative affect. The short version of the PANAS consists of two five-item subsets, one measuring positive affect (PA) and one measuring negative affect (NA). Following this, participants' procedural justice expectation was assessed. Then, the experimenter gave the participants a one page long summary of the game's rules on which they could also do their calculations in the negotiation rounds (see Appendix D). This was done in order to adjust for potential retrieval-based differences in the rule knowledge of the participants. Following this the three negotiation rounds started. In order to avoid capacity and time constraints, participants were instructed to take as much time as they needed in order to propose their offers. In order to make the situation realistic, the employee's acceptance/rejection decisions were presented after a varying delay of about 90 seconds. After the last round, participants could decide whether they wanted to assign a bonus to the employee, punish the employee or do nothing.

*Assessment phase.* Finally, participants' procedural and distributive justice perceptions were assessed. At the end of the experiment, participants were paid, debriefed, and thanked for their participation.

### 3.5.1.3 Dependent variables

*Ease of retrieval.* Accessibility experiences were assessed by four questions. The first two questions were “How easy or difficult was it for you to list unfair aspects of the negotiation procedure?” and “How easy or difficult would it have been for you to list more unfair aspects?” Both answers were given on 9-point scales ranging from 1 (*very difficult*) to 9 (*very easy*). The other two questions read, “How high do you evaluate the quality of the unfair aspects you recalled?” (1 = *very low*, 9 = *very high*) and “In your opinion, how many unfair aspects of the negotiation procedure are there?” (1 = *few*, 9 = *many*).

*Procedural justice expectations and perceptions.* Procedural justice *expectations* were assessed directly before the negotiation phase by three items asking participants to rate how fair, just, and non-discriminating the procedure is (1 = *does not apply at all*, 9 = *does completely apply*). Procedural justice *perceptions* were assessed after the end of the negotiation phase by three items asking participants to rate how fair, unjust (reverse coded),<sup>30</sup> and non-discriminating the procedure was (1 = *does not apply at all*, 9 = *does completely apply*).

*Distributive justice perceptions.* Distributive justice perceptions were assessed after the end of the negotiation phase by four items asking participants to rate how much the notions apply that their outcome was adequate given their effort; just given their performance; just; and adequately reflecting their effort (1 = *does not apply at all*, 9 = *does completely apply*).

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<sup>30</sup> This reversed coded item was included in order to signal participants that this was not a mere repetition of the assessment of the procedural justice expectations items.

*Cooperation behavior.* In order to assess the cooperation behavior of the participants, a difference score was calculated. The score assessed the difference (in Euro) between the earnings of the employee and the own earnings that would have resulted from the participant's proposal. Both declined and accepted proposals were analyzed. These difference scores were averaged over all three rounds. The values therefore represent the mean difference *per round*. A zero value indicates a proposed equal split of the earnings while negative values indicate that the participant demanded more for himself or herself each round than he or she was willing to give to the employee. In turn, positive values indicate that the participant was willing to give more to the employee each round than he or she wanted for himself or herself.

*Bonus and Punishment.* As a measure of the participants' satisfaction with the outcome of the negotiation, the bonus and punishment actions were combined in one measure. This measure was the amount of Euros that the participant destroyed or gave to the other player. Negative values reflect destructed money and positive values reflect donated money.

### 3.5.2 Results

#### 3.5.2.1 Manipulation checks

*Ease of retrieval.* The four items assessing accessibility experiences were averaged to form a single index (Cronbach's  $\alpha = .78$ ) and entered into a 2 (number of aspects: few vs. many) x 2 (salience: uncertainty salient vs. certainty salient) x 2 (expertise: high vs. low) ANOVA. As expected, generating two unfair aspects was experienced as easier than generating four unfair aspects ( $M = 4.44, SD = 1.55$  vs.  $M = 3.69, SD = 1.45$ ;  $F(1, 93) = 5.13, p < .05$ ). No significant other main and interaction effects were found.

*PANAS*. The five items assessing PA (Cronbach's  $\alpha = .80$ ) were averaged to form a single index. The same was done for the five items assessing NA (Cronbach's  $\alpha = .76$ ). A 2 (number of aspects: few vs. many) x 2 (salience: uncertainty salient vs. certainty salient) x 2 (expertise: high vs. low) multivariate analysis of variance (MANOVA) on the PA and NA scales indicated no significant main or interaction effects neither on the multivariate nor the univariate level.

### 3.5.2.2 *Procedural justice expectations*

Procedural justice expectations items were averaged (Cronbach's  $\alpha = .81$ ) and entered into a 2 (number of aspects: few vs. many) x 2 (salience: uncertainty salient vs. certainty salient) x 2 (expertise: high vs. low) ANOVA. There were no significant main effects for salience, expertise, both  $F_s < 1$ ; and number of aspects,  $F(1, 93) = 2.74, ns$ . There were also no significant first order interactions, all  $F_s < 1$ . As expected, a significant interaction between number of aspects, salience, and expertise was found,  $F(1, 93) = 5.59, p < .05$ . As can be seen in Table 3, participants with high expertise and uncertainty salient expected the procedure to be more just after retrieving few than many aspects ( $M = 5.00, SD = 1.39$ ;  $M = 3.79, SD = 1.71$ ;  $t(93) = 1.81, p < .05$ ). For participants with high expertise and certainty salient, however, this effect was eliminated ( $M = 4.22, SD = 1.29$ ;  $M = 4.47, SD = 1.92, |t| < 1$ ). Participants with low expertise and certainty salient expected the procedure to be more just after retrieving few than many aspects ( $M = 5.42, SD = 1.87$ ;  $M = 3.89, SD = 1.70$ ;  $t(93) = 2.10, p < .05$ ). For participants with low expertise to whom uncertainty was made salient this effect was eliminated ( $M = 4.23, SD = 1.78$ ;  $M = 4.46, SD = 1.83, |t| < 1$ ). Additionally, no significant correlation between procedural justice expectations and cooperation behavior was found,  $r = .04, ns$ .

Table 3  
Means and Standard Deviations of Procedural Justice Expectations, Procedural and  
Distributive Justice Perceptions, Cooperation Behavior, Participants' and Employees'  
Earnings, Bonus and Punishment as a Function of Salience, Number of Aspects and Expertise  
(Experiment 5)

Dependent variables	Expertise	Number of Aspects			
		Few		Many	
		Uncertainty	Certainty	Uncertainty	Certainty
		<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
Procedural Justice Expectations	High	5.00 (1.39)	4.22 (1.29)	3.79 (1.71)	4.47 (1.92)
	Low	4.23 (1.78)	5.42 (1.87)	4.46 (1.83)	3.89 (1.70)
Cooperation Behavior	High	0.20 (1.64)	-0.44 (0.84)	-0.54 (0.85)	0.25 (1.00)
	Low	0.42 (1.24)	0.01 (1.17)	-0.18 (0.81)	0.60 (1.22)
Procedural Justice Perceptions	High	4.94 (1.68)	4.55 (1.45)	4.62 (1.57)	5.70 (1.63)
	Low	5.46 (1.71)	4.88 (1.19)	4.36 (1.80)	4.18 (1.70)
Participants' Earnings	High	2.38 (1.48)	3.14 (1.34)	3.39 (2.05)	3.02 (1.62)
	Low	2.51 (1.89)	2.78 (1.71)	2.88 (1.63)	2.99 (1.92)
Employees' Earnings	High	4.42 (2.91)	3.34 (1.68)	3.58 (2.28)	4.65 (2.38)
	Low	4.79 (2.48)	4.43 (2.29)	3.92 (2.04)	5.35 (2.58)



Table 3 (continued)

		Number of Aspects			
		Few		Many	
		Uncertainty	Certainty	Uncertainty	Certainty
Dependent variables	Expertise	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
Distributive Justice Perceptions	High	4.63 (1.56)	4.37 (1.88)	4.83 (2.68)	4.83 (1.81)
	Low	5.33 (1.95)	4.72 (0.87)	4.52 (1.92)	4.82 (1.92)
Bonus and Punishment	High	0.03 (0.09)	0.06 (0.17)	0.05 (0.14)	0.12 (0.21)
	Low	0.03 (0.06)	0.04 (0.08)	0.01 (0.03)	0.04 (0.15)

*Note.* Means for justice perceptions and expectations are on 9-point scales, higher values indicate higher levels of judgments of procedural or distributive justice. Means for cooperation behavior, participants' and employees' earnings, and bonus and punishment are in Euros.

### 3.5.2.3 Cooperation behavior

The measure for cooperation behavior was entered into a 2 (number of aspects: few vs. many) x 2 (salience: uncertainty salient vs. certainty salient) x 2 (expertise: high vs. low) ANOVA. There were no significant main effects for number of aspects and salience on the measure of cooperation behavior, both  $F_s < 1$ . The main effect of expertise was also not significant,  $F(1, 93) = 2.38$ , *ns*. The first order interaction between number of aspects and salience, however, was significant,  $F(1, 93) = 8.62$ ,  $p < .01$ . As seen in Figure 3, certainty salient participants exhibited less willingness to cooperate after retrieving few than many unfair aspects ( $M = -0.29$ ,  $SD = 0.95$ ;  $M = 0.46$ ,  $SD = 1.13$ ;  $t(93) = -1.97$ ,  $p < .05$ ). For

participants to whom uncertainty was made salient this effect was completely reversed ( $M = 0.32$ ,  $SD = 1.38$ ;  $M = -0.36$ ,  $SD = 0.83$ ;  $t(93) = 2.19$ ,  $p < .05$ ). No other significant interactions were found, all  $F_s < 1$ .

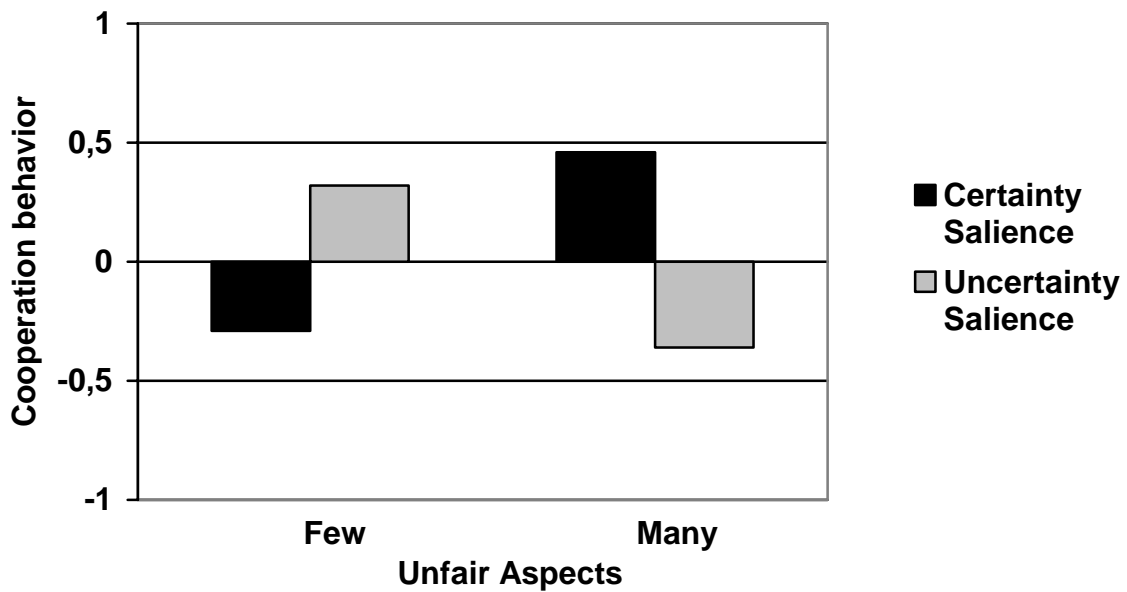


Figure 3

Means of Cooperation Behavior (Euros) as a Function of Salience and Number of Aspects.

#### 3.5.2.4 Procedural justice perceptions

Procedural justice perceptions items were averaged (Cronbach's  $\alpha = .70$ ) and entered into a 2 (number of aspects: few vs. many) x 2 (salience: uncertainty salient vs. certainty salient) x 2 (expertise: high vs. low) ANOVA. There were no significant main effects for number of aspects, salience, and expertise on the procedural justice perceptions rating, all  $F_s < 1$ . The interaction of number of aspects and salience,  $F(1, 93) = 2.05$ ,  $ns$ , and the interaction of salience and expertise,  $F(1, 93) = 1.23$ ,  $ns$ , were both not significant. The interaction between

number of aspects and expertise, however, was significant,  $F(1, 93) = 3.97, p < .05$ . Participants with low expertise perceived the procedure to be more just after retrieving few than many aspects ( $M = 5.24, SD = 1.53; M = 4.26, SD = 1.72; t(93) = 1.90, p < .05$ ). Conversely, for participants with high expertise, this effect was eliminated and even slightly reversed ( $M = 4.71, SD = 1.53; M = 5.09, SD = 1.65, SD = 1.50, |t| < 1$ ). The interaction between number of aspects, salience, and expertise was not significant,  $F < 1$ . Additionally, a significant positive correlation between procedural justice perceptions and cooperation behavior was found,  $r = .20, p < .05$ . Participants who behaved cooperatively also rated the procedural justice of the negotiation as higher.

#### 3.5.2.5 *Participants' and employees' earnings*

On average, participants' total earnings were  $M = 2.90$  Euros ( $SD = 1.68$ ). The mean total earnings for the hypothetical employees were  $M = 4.27$  Euros ( $SD = 2.35$ ). This difference was significant;  $t(100) = -5.87, p < .001$ . A 2 (number of aspects: few vs. many) x 2 (salience: uncertainty salient vs. certainty salient) x 2 (expertise: high vs. low) MANOVA on the participants' and employees' earnings indicated a significant interaction effect of the salience manipulation and the number of aspects at the multivariate level:  $F(2, 92) = 3.99, p < .05$ . On the univariate level, this effect was significant for employees' earnings,  $F(1, 93) = 4.30, p < .05$ ; and not significant for the earnings of the participants,  $F < 1$ . The pattern for the employees' earnings resembles the pattern found on the measure of cooperation behavior. Under certainty salience, participants who generated two unfair aspects had a tendency to pay lower wages ( $M = 3.69, SD = 1.92$ ) than participants who generated four unjust aspects ( $M = 5.07, SD = 2.47; t(93) = -1.62, p < .10$ ). Conversely, under conditions of uncertainty salience, participants who generated two unfair aspects had a tendency to pay higher wages ( $M = 4.61,$

$SD = 2.64$ ) than participants who generated four unjust aspects ( $M = 3.85$ ,  $SD = 2.13$ ;  $t(93) = 1.31$ ,  $p < .10$ ). No other significant main or interaction effects were found, neither on multivariate nor on univariate level.

*Distributive justice perceptions.* The four items assessing distributive justice perceptions were averaged (Cronbach's  $\alpha = .88$ ) and entered into a 2 (number of aspects: few vs. many) x 2 (salience: uncertainty salient vs. certainty salient) x 2 (expertise: high vs. low) ANOVA. In line with the results for the earnings of the participants, no significant main or interaction effects were found, all  $F_s < 1$ .

*Bonus and Punishment.* The measure for bonus and punishment was also entered into a 2 (number of aspects: few vs. many) x 2 (salience: uncertainty salient vs. certainty salient) x 2 (expertise: high vs. low) ANOVA. In line with the results for distributive justice, no significant main or interaction effects were found.

#### 3.5.2.6 Additional analyses

To refute alternative explanations for the expected accessibility effect, three students were asked to rate the quality of the aspects generated by the participants (across conditions). The raters worked independently, were blind to our hypotheses, and rated each aspect on a 5-point scale (1 = *low quality*, 5 = *high quality*). Average interrater reliability over all four aspects was high (Cronbach's  $\alpha = .82$ ). The average quality of all aspects was entered into a 2 (number of aspects: few vs. many) x 2 (salience: uncertainty salient vs. certainty salient) x 2 (expertise: high vs. low) ANOVA. Only a significant main effect for expertise was revealed,  $F(1, 93) = 4.64$ ,  $p < .05$ ; showing that participants with higher expertise had generated significantly better aspects ( $M = 3.04$ ,  $SD = 0.94$ ) than participants with low expertise ( $M = 2.60$ ,  $SD =$

1.12). All other main effects and interactions were not significant. The same analysis was also conducted for the average quality of the last argument. This analysis also revealed no significant main or interaction effects for the number of aspects and salience on the average quality of the last argument.

Additionally, separate regression analyses for the salience conditions with cooperation behavior as criterion and the average quality of the aspects and the accessibility experience measure as predictors were calculated. In the certainty salient condition, the accessibility experience was a significant predictor,  $\beta = -.35$ ,  $t = -2.62$ ,  $p < .05$ , showing that experienced ease of retrieval lead participants to less cooperative behavior. The average quality of the aspects was no significant predictor,  $\beta = -.13$ ,  $|t| < 1$ . In the uncertainty condition, both the average quality,  $\beta = -.17$ ,  $t = -1.17$ , *ns*, and the accessibility experience  $\beta = .08$ ,  $|t| < 1$ , were no significant predictors of the cooperation behavior.

### 3.5.3 Discussion

The results of Experiment 5 are largely in line with the findings of the previous experiments. As in the previous experiments, the quality of the aspects did not differ between the number of aspects conditions. This analysis also revealed the validity of the expertise assessment, since the participants with high expertise generated better aspects than the participants with low expertise. Additionally, the regression analysis with quality and experienced ease as predictors of the cooperation behavior revealed that the accessibility experience was the only significant predictor of the cooperation behavior under certainty salience.

As in previous research (Van den Bos, 2001a; Van den Bos, Euwema, et al., in press; Van den Bos et al., 2005; Van den Bos, Van Ameijde, & Van Gorp, in press), it was demonstrated

that the salience manipulation did not influence participants' affective state. Therefore, the results of this study cannot be interpreted as being moderated by positive or negative mood (e.g., Ruder & Bless, 2003).

In line with the hypothesis stated for the procedural justice expectations, a significant three-way interaction was found for number of arguments, salience, and expertise. The interaction of salience and number of arguments found in the previous experiments was only replicated for the participants with high expertise while participants with low expertise showed the reversed pattern. However, while the overall pattern was as predicted, this result was not entirely in line with previous findings and the hypothesis. Participants with high expertise and certainty salient did not reveal the experienced-based processing demonstrated in previous experiments. Conversely, for the participants with uncertainty salient, a content-based processing did not occur in Experiments 3 and 4. This pattern of results may be explained by the generally high informational uncertainty in this negotiation situation. The processing intensity may have been higher than in the other experiments. Additionally, it was found that participants with low expertise to whom uncertainty was made salient, did not show content-based information processing. This may be due to over-correction. As already stated in the introduction to this experiment, individuals sometimes overestimate the influences of a bias on their judgments and therefore overcorrect their judgments (cf., Sczesny & Kühnen, 2004; see also Strack, 1992; Wegener & Petty, 1997). Interestingly, the effect of salience manipulation could only be found on the procedural justice expectations, while on the procedural justice perceptions only an interaction of expertise and the number of arguments manipulation was found. Potentially, this was because the manipulated salience wore off or was reduced by the preceding justice judgment or the behavioral interaction (Van den Bos & Lind, 2002).

For cooperation behavior, the expected interaction of the number of arguments and salience manipulation was found. Participants to whom certainty was salient and who generated few unfair aspects acted less cooperative than participants who generated many unfair aspects. For participants to whom uncertainty was salient, this effect was completely reversed. This result replicated the findings of the previous experiments on a *behavioral measure*. This was the first time in research on accessibility experiences that its influences had been found on a behavioral measure. Certainty salience led to a strong reliance on the accessibility experience while uncertainty led to a more content-based processing. This finding also constitutes some initial evidence for the hypothesis that procedural justice expectations may influence the cooperation behavior directly. Interestingly, participants with low expertise corrected their procedural justice judgments; however, this correction did not influence their behavior. Participants did not underlie any restricting capacity or time constraints. Therefore, this result may be interpreted as first evidence that, in some social interactions, individuals lack the metacognitive knowledge to understand the influence of procedural justice judgments on their behavior. In this experiment, lack of metacognitive knowledge led to the paradoxical situation that procedural justice expectations did not reveal any significant relationship with cooperation behavior. Only the procedural justice perceptions at the end of the interaction revealed such a relationship. This may be explained by the information the participants then had about their own behavior. The strength of the effect on cooperative behavior is highlighted by the fact that it was only the behavioral measure where the effects of the accessibility experience could be reliably found. Additionally, the behavioral tendency was strong enough to alter the employees' total earnings. This is a remarkable result especially along with the fact that this did not lead to lower perceptions of distributive justice or a stronger tendency to punish the other player. An also very interesting result is the significant average overpayment of the employees. This is

remarkable given the fact that, in essence, this negotiation situation resembles a more-round ultimatum game in which the same non-cooperative behavior would be rational as it was discussed in section 2.1.1.1. Given that participants could see their accounts as well as the employee's account after each round a neglect of the employee's earnings seems unlikely. If anything, it could be that they overestimated the veto-power of the employee and the need of relationship building in this more-round game. Taken together, Experiment 5 offers a number of very interesting findings that have implications for future research and for applied settings. These implications as well as some caveats of this study will be discussed in detail in the following General Discussion.



## 4 GENERAL DISCUSSION

### 4.1 The three aims of the dissertation reconsidered

The current work was guided by three aims presented in the Introduction. This last chapter will discuss these aims in light of the findings of the five experiments reported in Chapter 3. Implications, open questions as well as a short overview over potential future research concerning the topic of this dissertation will also be given.

#### *4.1.1 Accessibility experiences in procedural justice judgments*

The first aim of this work was to demonstrate that accessibility experiences can influence the formation of procedural justice judgments. In line with this hypothesis, it was found that participants formed procedural justice judgments based on the ease with which unfair aspects of a procedure came to mind. Specifically, participants evaluated a procedure as more just after recalling many rather than few unfair aspects. Presumably, this is because the experienced difficulty associated with recalling many aspects implied that there *are* only few unfair aspects to the procedure, whereas the experienced ease associated with recalling few aspects implied that there *are* many unfair aspects. This pattern was found in Experiment 1 for the evaluation of the procedural justice of the ZVS procedure, in Experiments 2 and 3 for the orientation exam procedure, in Experiment 4 for a trust game procedure and in Experiment 5 in tendency also for a salary negotiation situation. This replication of the basic pattern across five experiments and four different target procedures speaks to the general nature of the reported effect.

Additionally, the influences of accessibility experiences on procedural justice judgments did not differ for participants in the different stages of a procedure: Accessibility experiences influenced judgments about procedures that were already finished as in Experiment 1. Next, Experiment 2 and 3 revealed that there was no difference in the usage of the accessibility experience in the judgment formation for participants who already passed a procedure and participants who were still experiencing this procedure. Only in Experiment 3, a difference in the procedural justice judgments of the two groups was found. Participants who had already passed the exam rated the procedure as more just (and the university as more attractive). This finding, however, can be explained by the motivation of participants not to devalue their own achievement (for a more detailed discussion of the relationship of self-assessment and justice perceptions, see Brockner, 2002; Brockner et al., 2003; Brockner & Wiesenfeld, 1986). Therefore, their initial appraisal should be that the process was fair. Given that people often limit themselves to test a single hypothesis (e.g., Bruner & Postman, 1951; Sanbonmatsu, Posavac, Kardes, & Mantel, 1998) and that the testing process is often focused on hypothesis-consistent information (e.g., Frey, 1986; Klayman & Ha, 1987), it is not surprising that participants who had already passed the exam came to the conclusion that the process was fair and just. This motivational process, however, did not interact in any kind with usage of the accessibility experience in judgment formation. Therefore, this finding does not contradict the assumption that the influences of accessibility experiences on procedural justice judgments exist on all stages of a procedure. A particularly impressive corroboration for this claim is the finding of Experiment 4. Here, influences of accessibility experiences were also present in *expectations* about the justice of a procedure that has not even started yet. Together, the findings of all five experiments demonstrate the generality with which individuals use accessibility experiences in the formation of different procedural justice judgments.

In addition to affecting judgments of procedural justice, individuals' experiences of retrieval ease also influenced other judgments and behaviors. In Experiment 1, for example, influences of accessibility experiences on procedural justice judgments also altered the acceptance of the authority the ZVS has in the opinion of students. This finding is in line with the assumption that acceptance of authority is strongly influenced by procedural justice judgments (Tyler & Lind, 1990; Van den Bos et al., 1998). Similarly, in Experiments 2 and 3, organizational attractiveness of a university also revealed influences of the accessibility manipulation. Again, this is in line with previous research on the role of procedural justice judgments in the evaluation of organizations (e.g., Colquitt et al., 2001). In Experiment 4, the effects of accessibility experiences could also be found on the behavioral intention to trust the other player and cooperate with this person. In Experiment 5, the same result was found on a behavioral measure of cooperation in a salary negotiation situation. The findings of all five experiments demonstrate that accessibility experiences can influence judgments and behaviors that are only indirectly linked to them by way of the important role that procedural justice judgments play in their formation. This result underscores the strength and importance of the current findings.

In order to rule out alternative explanations for the reported pattern of results, additional analyses were conducted. In particular, it has sometimes been suggested that ease-of-retrieval effects are disguised content-effects. This would mean that they are not produced by differences in accessibility experiences, but by differences in the quality or strength of recalled content information. Refuting such an alternative explanation, the quality of the aspects participants had recalled was similar across conditions for all four target procedures, suggesting that the accessible content information did not differ in quality or persuasiveness regardless of whether participants had recalled few or many pieces of information. An additional analysis in Experiment 1 revealed that the measured accessibility experience was a

significant predictor of the procedural justice judgment, while in the same regression model the average quality of aspects was no significant predictor. In essence, this finding could be replicated for conditions of personal certainty in all the other studies.

Taken together, Experiments 1 to 5 cogently demonstrate that judgments of procedural justice depend not only on the content information accessible at the time of judgment, but also on the ease or difficulty with which this content information comes to mind. The experiments presented here are the first to demonstrate that cognitive subjective experiences influence the formation of justice judgments. As previous conceptions of the formation process of justice judgments (e.g., Ambrose & Kulik, 2001; Folger & Cropanzano, 2001; Leventhal et al., 1980; Thibaut & Walker, 1975) focused on the accessible content information only, the present results highlight the need to take subjective experiences into account, as well. Given the robust findings for the accessibility experience, future research should examine the influences of accessibility experience on other facets of the justice judgment. In section 4.3.1, this topic will be discussed in detail. Besides, the influences of other cognitive subjective experiences may also be an important topic unveiled by this research. In section 4.3.2, surprise as one potential other cognitive experience that could influence procedural justice judgments is discussed in more detail. The findings of this work also have implications for potential explanations of established findings in the justice literature, as, for example, the *egocentric fairness bias* (e.g. Messick & Sentis, 1979). Additionally, the paradigm used in these experiments may also constitute a new way to have a closer look at the question whether concerns for procedural justice are primarily resource-related or relation-related (e.g., Lind & Tyler, 1988). Both topics will be discussed in detail in section 4.3.3.

#### 4.1.2 *Uncertainty as a moderator of the use of the accessibility experience*

Besides the examination of the influence of accessibility experiences on procedural justice judgments in general, a second goal was to examine whether this influence is an ubiquitous or exceptional phenomenon. Building on the uncertainty management model (e.g., Van den Bos & Lind, 2002) and prominent dual-process theories of attitude and judgment formation (e.g., Chen & Chaiken, 1999; Petty & Cacioppo, 1986), it was hypothesized that uncertainty may constitute a moderator of the reliance on accessibility experiences. In particular, it was postulated that accessibility experiences are most likely to influence justice judgments when individuals feel certain or when certainty is salient. Underscoring these conjectures, the results of Experiment 2 revealed that participants low in dispositional self-uncertainty relied more on their experiences of ease or difficulty than participants high in self-uncertainty. Similar results were found in Experiment 3 where the salience of certainty and uncertainty was experimentally manipulated. Experiment 4 replicated these findings of the moderating role of personal (un)certainty salience even under general conditions of relatively high *informational* uncertainty (no information was given about the hypothetical other player). In Experiment 5, the same moderation of the processing strategy by the salience manipulation was found for participants with high expertise in the rules of the procedure. However, in this experiment, only the reliance on the content information in the uncertainty salient condition could be replicated, due to the high information uncertainty in this specific experimental context. For the certainty salient condition, no differences in the use of content and experiential information were found. All five experiments corroborate the assumption that uncertainty is moderating the use of accessibility experiences in the formation of procedural justice judgments. Presumably, this was because individuals in conditions of low as compared to high certainty were more motivated to form accurate justice judgments in order to reduce this uncertainty, as suggested by the uncertainty management model. Given that reliance on

accessibility experiences has long been conceptualized as a heuristic process (e.g., Koriat & Levy-Sadot, 1999), conditions of certainty (and therefore of low motivation) should foster reliance on accessibility experiences. This mediating role of accuracy motivation has not been tested in the presented experiments. However, Greifeneder (2006; see also Müller, Greifeneder, Stahlberg, & Bless, 2006) reported an experiment in which participants evaluated the procedural justice of the orientation exam procedure. The experiment closely resembled Experiments 2 and 3 of the present work. However, instead of uncertainty, accuracy motivation was directly manipulated via accountability. Participants in the high motivation condition were informed that they would be asked to give reasons for all their ratings at the end of the questionnaire. For participants in the low motivation condition, it was particularly stressed that all their ratings were anonymous and could not be traced back to them (for a conceptually similar manipulation, see Martin, Seta, & Crelia, 1990). The results of this experiment closely replicated the findings of the present work. Low accuracy motivation led to the same reliance on experiential information as certainty salience. The findings therefore underscore the claim that the effects of uncertainty may – at least partly – be due to the mediating effect of accuracy motivation. Such an assumption is in line with current conceptions of dual-process models of information processing (see contributions in Chaiken & Trope, 1999). Furthermore, they support a fundamental postulate of the uncertainty management model (e.g., Van den Bos & Lind, 2002), which holds that justice is especially relevant to people when they feel uncertain.

While the current findings support a core assumption of the uncertainty management model (e.g., Van den Bos & Lind, 2002), they also extend the model in two important ways. First, the current experiments specify the conditions under which subjective experiences are likely to be relied upon in the formation of justice judgments. While Van den Bos (2003)

reported that the influence of affective experiences on justice judgments is strongest under conditions of informational uncertainty (if no justice-relevant information is given), the current findings suggest that uncertainty unrelated to the given information motivates individuals to form an accurate judgment and therefore decreases reliance on (cognitive) subjective experiences. Combined with the findings of Van den Bos, the current studies suggest a justice judgment formation process that fits with the general notions of the uncertainty management model as well as with prominent dual process models of attitude and judgment formation, as for example the heuristic systematic model (Chen & Chaiken, 1999). Uncertainty generally motivates people to form accurate justice judgments by deliberately taking all given justice-relevant information into account. However, if uncertainty derives from a lack of information or is attributed to a lack of credibility of the accessible information, other information, for example, subjective experiences will be used in a heuristic way to compensate for this lack of information. Second, the current studies also extend the findings of previous research on uncertainty and justice judgments by showing that uncertainty, or uncertainty-related states, not only make participants more sensitive to justice-related information (De Cremer & Sedikides, 2005; Diekmann et al., 2004; Thau et al., in press; Van den Bos 2001a, 2001b; Van den Bos & Miedema, 2000; Van den Bos et al., 2002, 2005; Van den Bos, Lind, et al., 1997; Van den Bos, Wilke, & Lind, 1998), but also result in a deeper processing of the justice-relevant information.

As stated in section 2.3.2, the decision to focus on the examination of uncertainty as a potential moderator of this relationship followed two considerations: First, uncertainty allowed for the integration of the present work into the framework of the uncertainty management model (e.g., Van den Bos & Lind, 2002) as a current conception of *justice judgment formation*. Second, uncertainty constitutes a moderator of the use of accessibility experiences that has never been examined before. Hereby, the current studies also contribute

to the literature on *accessibility experiences*. Experiments 2 to 5 demonstrated that uncertainty moderates the reliance on accessibility experiences in judgment formation. In our view, this finding is of particular interest to the domain of ease of retrieval, since uncertainty occurs in many situations and is often an aversive state that individuals try to resolve in various ways (e.g., Hogg, 2000; Lopes, 1987; Van den Bos & Lind, 2002; Van den Bos et al., 2005; Weary & Edwards, 1996). Future research should have a closer look at situations in which especially personal uncertainty may moderate the use of the accessibility experience in judgment formation.

#### *4.1.3 Influences of accessibility experiences on procedural justice expectations and cooperation behavior*

The third aim of this work, to demonstrate the applications of accessibility experiences' influences on procedural justice judgments to basic and applied research questions, was the focus of Experiments 4 and 5. Based on the idea that the findings of Experiments 1 to 3 would also generalize to procedural justice *expectations*, Experiment 4 set out to test whether it is possible to influence behavioral intentions via the manipulation of procedural justice expectations. Indeed, the manipulation of justice expectations was successful and allowed for the first experimental test of the hypothesis that procedural justice expectations may directly influence cooperation behavior. In line with the hypothesis, it was found that participants expecting the procedure to be just confided more Euros to the other (hypothetical) player than participants with low procedural justice expectations. This finding has also been replicated in Experiment 5 in a more complex negotiation situation in which the actual cooperation behavior of the participants was assessed. Similarly to Experiment 4, it was found that participants to whom certainty was salient and who generated few unfair aspects acted less



cooperatively than participants who generated many unfair aspects. For participants to whom uncertainty was salient, this effect was completely reversed. This result was all the more remarkable since the explicit procedural justice expectations of a considerable part of the participants did not reveal the corresponding pattern, due to metacognitive control processes triggered by their low expertise in the rules of the negotiation procedure.

These findings are the first supporting evidence that procedural justice expectations can influence behavior *directly*. The findings therefore support the model proposed by Bell and colleagues (2004). However, the findings also take the assumptions that were made in the context of personnel selection to the more general level of cooperation behavior. Additionally, Experiment 5 is the first demonstration that the manipulation of accessibility experiences can influence the *actual behavior* of individuals. The two experiments also demonstrated the potential usefulness of the paradigm in *testing* causal relationships between procedural justice judgments and other judgments and behaviors. Given that the used paradigm allows for a manipulation of the procedural justice judgments without the need to use different procedures, this paradigm could be the basis of very compelling experimental tests.

In line with previous research on the accessibility experience (Biller et al., 1992; Briñol et al., 2006; Ofir, 2000; Sanna & Schwarz, 2003; Tybout et al., 2005; Winkielman et al., 1998), Experiment 5 also replicated the finding that *expertise* is a moderator of the accessibility experience. The fact that participants controlled for their low expertise in the procedural justice judgments but not in their actual behavior, has some interesting implications: First, it made apparent that in this salary negotiation, participants did not have sufficient metacognitive knowledge about the influence of procedural justice judgments on their behavior. Otherwise, the moderation effect of expertise would have also shown up on the cooperation behavior, since capacity and time constraints have been ruled out. This result constitutes some evidence for the idea that individuals often have insufficient insight into the

role procedural justice judgments play in their behavior. Future research should investigate individuals' assumptions and naïve theories about the influence of procedural justice judgments more closely. Such an analysis could foster our understanding of the influence of the procedural justice judgments on human behavior.

Since the behavioral measure of Experiment 5 closely resembled the results of Experiment 4, this finding also constitutes some initial evidence for the claim that justice judgments are - at least in part - automatically formed (e.g., Ham & Van den Bos, 2006). Therefore, they can influence the behavior of individuals even in a situation in which they do not base their behavior deliberately upon this judgment. However, this important finding is preliminary, given the fact that implicit justice judgments were not assessed in this experiment. This issue will be further discussed in section 4.2.3.

The findings of Experiments 4 and 5 demonstrated the potential of accessibility experiences' influence on procedural justice judgments for further theoretical questions in the domain of justice research. The current paradigm, however, may also have some potential practical implications. Given that both experiments demonstrate impressive influences on behavioral intentions and actual behavior, this paradigm may also constitute the basis of a new tool to foster cooperation. In section 4.4 these potential practical implications will be discussed in detail.

## 4.2 Limitations of the present experiments

Although the findings of the present experiments are internally consistent and fit into the framework of the uncertainty management model (e.g., Van den Bos & Lind, 2002), the research on the accessibility experience (e.g., Schwarz, 1998, 2004) and the general assumptions of prominent dual-process theories of attitude and judgment formation (e.g., Chen & Chaiken, 1999; Petty & Cacioppo, 1986), some limitations to the experiments must be addressed. Some of them were already identified in the discussion sections of the five experiments and have been addressed in the succeeding experiments. However, some issues are still unresolved and will therefore be discussed in this section.

First, a minor caveat relating to the dropout of participants needs to be addressed: especially in Experiment 3, a relatively high number of participants were unwilling to generate unfair arguments about the procedure. Most likely, this was due to the setting in which Experiment 3 was conducted. While the four other experiments were conducted in a laboratory, Experiment 3 was conducted in one of the university's cafeterias. This non-standardized environment is likely to have decreased participants' compliance with experimental procedures. Yet, given that in all five studies none of the results changed in a significant way when non-complying participants were included into the data set, the outlined caveat is likely to be of negligible importance.

### 4.2.1 *Concurrent demonstration of content-based and accessibility-based information processing*

Although the findings of Experiments 2 to 5 consistently demonstrate the moderating role of uncertainty in the use of the accessibility experience, one could argue that Experiments 3 and 4 found an effect only for accessibility-based information processing. The conditions of

uncertainty salience found no difference between the number of aspects conditions and therefore no clear evidence for content-based information processing. This pattern of results, with no complete reversal of the effect in the condition of high accuracy motivation (which should correspond with the uncertainty condition), is not uncommon in the research on accessibility experiences (for a similar pattern of results, see e.g., Aarts & Dijksterhuis, 1999). In the case of these two experiments, this could have been due to three reasons: First, the manipulations were just not strong enough. A stronger manipulation of uncertainty salience might have triggered a more intense content-based information processing. Second, procedural justice judgments may be too complex in their formation or the given information too ambiguous. In this case, even under high uncertainty salience, individuals might rely in part on the accessibility experience in order to form their judgment. This is in line with the results of Chaiken and Maheswaran (1994), who found that individuals exposed to ambiguous information also use heuristic cues in the attitude formation even when they are highly motivated to form an accurate judgment. A third possible explanation is in line with the assumptions of Petty and Cacioppo (1986). They would argue that high processing intensity does not necessarily mean that heuristic cues are not used in the information processing. In their thinking, heuristic cues would be used as long as individuals see them as reliable information (for such a use of accessibility experiences, see Wänke & Bless, 2000).

In Experiment 5, evidence for content-based information processing was found. However, accessibility-based information processing was only found on the behavioral measure. Presumably, in this negotiation situation, informational uncertainty was high and therefore the general level of processing intensity may have been higher than in the previous experiments. In line with the first argument, this result could be interpreted as evidence that the salience manipulation may just not be strong enough to concurrently demonstrate content-based and accessibility-based information processing. This would also explain the finding that

in Experiment 5 the salience manipulation did not influence the procedural justice perceptions after the negotiation situation anymore. Despite its limited power, the salience manipulation was used in all four experiments, due to the fact that previous research (Van den Bos, 2001a; Van den Bos, Euwema, et al., in press; Van den Bos et.al., 2005; Van den Bos, Van Ameijde, & Van Gorp, in press), as well as Experiment 5, have demonstrated that it allows for the manipulation of uncertainty without altering the affective state of the participants. Stronger manipulations of personal uncertainty may not share this very important feature.

Given the fact that the general interaction pattern for the moderation of uncertainty was replicated over four studies, the discussed caveat, however, does not limit the conclusion that uncertainty-related states trigger more content-based information processing, while certainty-related states trigger more accessibility-based processing. Further research may look for stronger manipulations of uncertainty, which do not alter the affective state of the participants. Nevertheless, testing the viability of the other two post-hoc hypotheses might also be a worthwhile future research endeavor.

#### *4.2.2 Accuracy motivation and alternative explanations for high processing intensity*

In this work, the assumption is made that the moderating role of uncertainty in the formation of the justice judgment is due to the high accuracy motivation people have when forming justice judgments under uncertainty. This is presumably the case because individuals use the justice judgment in order to reduce this uncertainty (e.g., Van den Bos and Lind, 2002). These assumptions are in line with the uncertainty management model as well as with prominent dual process models of attitude and judgment formation (Chen & Chaiken, 1999; Petty & Cacioppo, 1986). This work did not test for the mediating role of accuracy motivation directly. As stated in section 4.1.2, Greifeneder (2006) reported experimental evidence

corroborating this idea. However, there are two alternative explanations that should also be taken into account. First, Weick and Guinote (2006) argue that power moderates the use of accessibility experiences. They reported experimental evidence demonstrating that individuals who felt powerful used accessibility experiences more than powerless individuals. Weick and Guinote argue that this is not due to lower motivation of powerful individuals but due to a general tendency to rely more on situational and experiential information when feeling powerful. Since certainty and feeling powerful may be related, the reliance on experiential information could have a common basis independent of motivation.

Another alternative explanation derives from recent research on the role of the human alarm system (e.g., Eisenberger, Lieberman, & Williams, 2003) in formation and reliance on justice judgments (Van den Bos et al. 2006). Van den Bos and colleagues found that uncertainty-related stimuli like flashing lights or exclamation points led individuals to more extreme judgments on justice-related events. They argue that these stimuli may have triggered the human alarm system and made individuals more vigilant and therefore more sensitive to justice-related issues. Corroborating this idea, they reported some initial fMRI testing demonstrating that participants looking at an exclamation point had a higher activity in the anterior cingulate cortex. This area has been identified in previous research to be closely related to moral judgments (Greene, Sommerville, Nystrom, Darley, & Cohen, 2001; Greene, Nystrom, Engell, Darley, & Cohen, 2004) and the human alarm system (Eisenberger et al., 2003). Taken all these findings together, one might argue that uncertainty salience makes participants more vigilant and thereby leads to a higher processing intensity without a change in accuracy motivation.

Both alternative explanations have intriguing implications for the domain of social cognition, and future research may answer the questions to what extent embodied cognition

(Weick & Guinote, 2006) and the human alarm system (Van den Bos et al., 2006) may contribute to the effects demonstrated in this research. However, the converging evidence from the study reported by Greifeneder (2006) and the sound theoretical basis in the justice literature (e.g. Van den Bos & Lind, 2002) and dual-process theories (e.g., Chen & Chaiken, 1999; Petty & Cacioppo, 1986) lead to the conclusion that the effects of uncertainty are – at least partly – due to the mediating effect of accuracy motivation.

#### *4.2.3 Measurement of implicit procedural justice judgments*

While the difference between procedural justice perceptions and cooperation behavior in Experiment 5 constitutes an interesting finding with a number of implications, it also makes apparent the lack of a measure of implicit justice judgments. Given the converging results from Experiment 4, it seems likely that implicit procedural justice judgments in Experiment 5 would have revealed a corresponding pattern to the behavioral measure. However, without such a measure the interpretability of the findings is limited. Ham and Van den Bos (2006) have recently started to address this issue by demonstrating automatic justice-related knowledge activation in a series of experiments. However, they used experimental paradigms (e.g., the grid learning paradigm, see Carlston & Skowronski, 1994; probe recognition paradigm, see McKoon & Ratcliff, 1986) that do not easily lend themselves to the use in contexts like the negotiation situation in Experiment 5. Additionally, these paradigms focus not on the judgment but on the basic process of justice-related knowledge activation. Therefore, the construction of applicable paradigms to assess implicit justice judgments is needed. Given the converging evidence of Experiments 4 and 5, however, it seems likely that the interaction of the (un)certainty salience and the accessibility manipulation on the cooperation behavior expressed the influences of the implicit procedural justice judgment.

### 4.3 Implications for future research

#### 4.3.1 *The influence of accessibility experiences on other facets of justice judgments*

As most procedures are too complex for keeping all of the information in mind, and given that many situations foster heuristic processing (e.g., high constraints on mental capacity), it is suggested that accessibility experiences play a vital role in many procedural justice judgments. This argument is likely to hold also for distributive (Adams, 1965) and interactional justice judgments (Bies & Moag, 1986). As already stated in section 2.1.2, in this work, interactional characteristics were seen as part of the procedural justice judgment (e.g., Gilliland, 1993). However, if one conceptualizes interactional justice as a distinct facet of the justice judgment, the same influences as discussed for procedural justice should apply. Bies and Moag (1986) identified *justification*, *truthfulness*, *propriety* and *respect* as criteria of interactional justice. In a judgment based on these criteria, the accessibility experience again may function as a cue for the frequency of violations of these criteria. In fact, the complexity of personal interactions during the course of an allocation procedure may lead to even stronger influences of the accessibility experiences in the interactional than in the procedural facet.

In essence, accessibility experiences should also influence the distribute justice facet. However, most conceptions of distributive justice (e.g., Adams, 1965; Deutsch, 1975; Leventhal, 1976a) regard the formation of this judgment as based on a smaller number of criteria than the procedural justice judgment (for an exception, see Jasso, 1999). Therefore, the influence of accessibility experiences as a frequency cue may not have the same strong influence as in the procedural justice judgment. However, the probability of certain referential events may play a role in distributive justice judgments (e.g., Folger & Cropanzano, 2001). Given the findings that probability judgments are influenced by accessibility experience (e.g.,



Grayson & Schwarz, 1999; Ofir, 2000; Rothman & Schwarz, 1998), it is possible that distributive justice judgments may also be influenced by them.

Taken all this together, a number of reasons point to the conclusion that influences of accessibility experiences on procedural justice judgments should also be replicable for interactional and distributive justice judgments. The test of this hypothesis could certainly increase our knowledge about the similarities and differences of the formation process of the different justice facets.

#### 4.3.2 *The influences of other cognitive subjective experiences on procedural justice judgments*

In the last paragraph, the potential influences of accessibility experiences on other facets of the justice judgment have been discussed. The other way round, one could also raise the question whether other cognitive subjective experiences might be important in the formation of procedural justice judgments, as well. As stated in section 2.1.2.6, in all models presented in this work, the formation process of procedural justice judgments is conceptualized in one way or the other as a comparison process of the actual characteristics of the process with some kind of reference point. In this comparison process, the judgment about the fairness of a procedure is formed upon the *frequency* of the perceived mismatches and the gravity of these mismatches (*distance* between the actual characteristic and the reference point). The current dissertation has focused on the accessibility experience as a cue of the *frequency*; other subjective experiences may function as heuristic cues for the *distance* between the actual characteristic and the reference point. An experience that could function as such a cue is the feeling of *surprise*. Müller and Stahlberg (2006, in press) argue that surprise is used as a metacognitive heuristic cue to estimate the *distance* between a former prediction or

expectation and an actual outcome in the context of the hindsight bias. Applied to the setting of justice judgments, it seems therefore possible that surprise may function as a heuristic cue to estimate the *distance* between the actual characteristic and the reference point, since this reference point probably constitutes the individual's expectation. The examination of surprise and other cognitive subjective experiences like the *feeling of familiarity* (e.g., Jacoby, Kelley, Brown & Jasechko, 1989) or *perceptual fluency*, a feeling that is closely related to the accessibility experience (for a review, see Schwarz, 2004), may therefore lead to a more complete understanding of the different roles cognitive subjective experiences play in the formation of procedural justice judgments.

#### 4.3.3 *New ways to examine known justice-related phenomena*

The finding that accessibility experiences influence procedural justice judgments may also allow for alternative explanations for some justice-related phenomena. For instance, consider the *egocentric fairness bias* introduced by Messick and Sentis (1979, 1983). The egocentric fairness bias is the phenomenon that individuals judge their own behaviors as more just than the same behaviors by other persons, or see a larger outcome for themselves as more appropriate than they would be willing to grant another person. Messick, Bloom, Boldizar, and Samuelson (1985; see also Cates & Messick, 1996; Liebrand, Messick, & Wolters, 1986) have suggested that this bias may be due to different numbers of fair and unfair aspects individuals can recall for themselves and others. While they can recall many fair aspects for themselves and few unfair aspects, it is the other way round for other persons. In Messick and his colleagues' view, this different pattern in information accessibility is the reason for the egocentric fairness bias. Given the results reported in the present work, however, it appears plausible that the egocentric fairness bias may at least be partly due to differences in

accessibility experiences rather than retrieved content information. Of course, this is a speculation that needs to be examined in future studies.

While the results of the present findings may allow for alternative explanations for known justice-related phenomena, the paradigm used in all five studies could also be used to examine other topics as social justice research than the formation process of the judgment. Experiments 4 and 5 demonstrated one such application with the test whether justice expectations may influence cooperation behavior directly. Given the successful demonstration, other topics may also profit from this paradigm. So, for example, the enduring dispute about the general motivation of the concern for procedural justice may constitute such a topic (for a detailed discussion, see section 2.1.2.3). In Experiments 4 and 5, experimental settings were chosen in which the rational strategies were non-cooperative. As explained for both the *trust game* (see section 3.4) and the *ultimatum game*,<sup>31</sup> a rational actor would have behaved in a non-cooperative way. Therefore, models that regard resource-related concerns as the central determinate of the concern for procedural justice (e.g., Thibaut and Walker, 1975) and models that focus on relational concerns (e.g., Tyler & Blader, 2003; Van den Bos & Lind, 2002) would make the same prediction. Low perceived procedural justice should lead to less cooperative behavior. The findings in both experiments therefore were in line with both positions. However, in situations in which the rational strategy is cooperative, both models would make different predictions for a situation in which procedural justice is perceived as low. Relational models would assume the same behavior as in the reported experiments. Low perceived procedural justice should lead to low cooperation behavior since the judgments would be interpreted as cues for the low relational concerns of the other party (for more

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<sup>31</sup> In essence, the setting in Experiment 5 constituted a more-round ultimatum game. In this situation the same rational strategy would apply as described in section 2.1.1.1.

details, see section 2.1.2.3). Resource-based models, however, would predict that the low controllability (as the assumed reason for the low procedural justice judgment) would have no behavior implications since individuals would pursue a cooperative strategy for reasons of self-interest (for details, see section 2.1.2.1). Given that in such an experiment, the procedure would have the same structure in the low and the high perceived procedural justice conditions, the findings of such an experiment would be very informative.

#### *4.3.4 The accessibility experiences' influence when retrieving specific kinds of justice-related information*

Another potentially fruitful venue for future research may be the integration of *fair* information in justice formation. In all of the present experiments, participants were asked for unfair aspects of the target procedure, because in most situations negative information is particularly salient (e.g., Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001; Kanouse & Hanson, 1972; Pratto & John, 1991). While asking for unfair aspects is a good way to investigate the different usage of content information versus accessibility experiences, it does not offer insights into how positive information is integrated into justice judgments. Since, for example, Ambrose and Kulik (2001) put forward the idea that individuals may compare the actual process to both a fair and an unfair prototype the general logic of the paradigm should also apply for the generation of fair aspects.

Moreover, only asking for unspecific “aspects” does not answer the question of how the actual comparison process takes place. The current work therefore cannot answer the question of whether people form counterfactuals (Folger & Cropanzano, 2001), match attributes to prototypes (Ambrose & Kulik, 2001), or compare the aspects to abstract procedural rules (Leventhal et al., 1980) in order to form justice judgments. However, future research might

examine how people use accessibility experiences in order to form justice judgments in situations in which they are retrieving more specific information (counterfactuals, attributes, etc.) and information that indicates a fair process. Since accessibility experiences are most likely used in domains where individuals perceive this cue as diagnostic (e.g., Biller et al., 1992; Briñol et al., 2006; Sanna & Schwarz, 2003; Tybout et al., 2005; Winkielman et al., 1998), the usage or non-usage of accessibility experiences in judgment formation could give first insights into the familiarity of individuals with certain types of justice information.

#### 4.4 Practical implications

Besides an amplitude of theoretical implications, the results of the current studies also have some important practical implications. The findings of the present experiments that attitudes toward an organization, behavioral intentions, and actual behavior can be influenced via justice judgments without changes in the procedure itself may allow for some interesting applications. For example, merely rendering the retrieval of unfair aspects more difficult should heighten participants' satisfaction with the procedure as well as with the organization and should lead to more organizational commitment. This opens a wide array of possibilities for new marketing activities for organizations in the internal as well as in the external context.

More importantly, the influences of accessibility experiences on justice judgments might allow for the development of new tools to foster cooperation in negotiations or to mediate conflicts between parties. A manipulation of accessibility experiences similar to the one used in the current experiments may directly change the perceived fairness of the exchange situation without the need to reinterpret or to extend the informational basis of the individuals involved. As in Experiments 4 and 5, high perceived procedural justice should then lead to more cooperative behavior which is often answered by the opposing side in the same way, in turn triggering cooperative behavior. As stated in section 2.4.2, such a tit-for-tat strategy has proven to be a mutually rewarding strategy even in settings that have a non-cooperative structure, as for example, in prisoner dilemma situations (Axelrod, 1984). In the literature on conflict resolution, such a behavioral pattern is described as *de-escalation spiral* which is often the first step to the resolution of already escalated conflicts (Pruitt, 2000). The special value of such a way to foster cooperative behavior is that it does not rely on a cognitive restructuring of the individuals' conception of the situation (e.g., removal of the zero-sum-thinking, see Thompson & Hrebec, 1996). And most importantly, as demonstrated in

Experiment 5, individuals may not even be aware of this influence and therefore would not regard the outcome as less favorable or unjust. Therefore, this simple tactic would probably not be seen as a persuasion attempt and could generate sustainable results (e.g., Chaiken et al., 2000).

## 4.5 Conclusion

In sum, the present results revealed that justice judgments are influenced not only by the accessible content information itself, but also by experiences that are elicited by the retrieval of justice information from memory. The impact of accessibility experiences has been demonstrated to be most pronounced in conditions of certainty. The influences of accessibility experiences were also found on procedural justice expectations and on justice-related judgments as organizational attractiveness and acceptance of authority. The experimental paradigm did also allow for the first successful demonstration that procedural justice expectations directly influence cooperation behavior. Hereby, all three aims that guided this work have been successfully addressed. The present findings thus allow for a deeper understanding of the processes underlying the formation of justice judgments and at the same time demonstrate potential practical applications in the negotiation context.







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## 6 APPENDIX

### Appendix A

Exact wording of the (un)certainty salience manipulation used in the Experiments 3 to 5:

Uncertainty salience:

**Bitte versetzen Sie sich nun möglichst intensiv in die folgende Situation:**

Stellen Sie sich vor, wie es ist, wenn man sich  
seiner selbst unsicher ist.

Was für Gefühle löst Ihrer Meinung nach der Gedanke aus, sich seiner selbst unsicher  
zu sein?

Was passiert körperlich, wenn man sich seiner selbst unsicher fühlt?

Certainty salience:

**Bitte versetzen Sie sich nun möglichst intensiv in die folgende Situation:**

Stellen Sie sich vor, wie es ist, wenn man sich  
seiner selbst sicher ist.

Was für Gefühle löst Ihrer Meinung nach der Gedanke aus, sich seiner selbst sicher zu sein?

Was passiert körperlich, wenn man sich seiner selbst sicher fühlt?

Control group (only in Experiment 3):

**Bitte versetzen Sie sich nun möglichst intensiv in die folgende Situation:**

Stellen Sie sich vor, wie es ist, fernsehen.

Was für Gefühle löst Ihrer Meinung nach der Gedanke aus, fernsehen?

Was passiert körperlich, wenn man fernsieht?

## Appendix B

Instruction and explanation of the trust game procedure in Experiment 4:

### **Liebe Teilnehmerinnen, liebe Teilnehmer,**

vielen Dank für Ihre Teilnahme an dieser Vorstudie. Bei diesem Fragebogen handelt es sich um eine einfache wirtschaftliche Entscheidungssituation, die wir zu einem späteren Zeitpunkt gerne hier an der Universität Mannheim als Experiment durchführen möchten. Im Folgenden werden wir Ihnen die Entscheidungsregeln erklären. Ihre Aufgabe ist es sich in die Rolle des **SENDERS** hineinzusetzen und uns Rückmeldung darüber zu geben, wie sie sich verhalten würden, wenn Sie tatsächlich eine Entscheidung treffen müssten. **Bitte beachten Sie dabei, dass Sie hier kein Geld ausbezahlt bekommen! Sie sollen sich bitte lediglich vorstellen wie Sie sich verhalten würden wenn Sie in dieser Situation wären!**

Bitte stellen Sie sich vor, dass Sie vor Beginn des Experiments anonym und per Zufall mit einer anderen Versuchsperson gepaart werden. Sie übernehmen dabei die Rolle des **Senders**. Die andere Person übernimmt die Rolle des Empfängers. Zu Beginn des Experiments werden **dem Sender (also Ihnen)** von uns **10,- Euro** auf ein virtuelles Bankkonto überwiesen. Dieses Geld gehört ab dann Ihnen! Als Sender haben Sie die Wahl den kompletten Betrag für sich zu behalten, oder aber einen gewissen Anteil an den Empfänger zu senden. Jeder Euro der versendet wird, wird von uns **vervierfacht** und auf das virtuelle Konto des Empfängers überwiesen. Nach der Entscheidung des Senders und der eventuellen Überweisung und Vervierfachung des Geldes hat der Empfänger die Wahl zu entscheiden, ob er einen Teil des Geldes auf seinem virtuellen Bankkonto wieder an Sie zurückschicken möchte. Nach der Entscheidung des Empfängers endet das Experiment; die sich ergebenden Endbeträge werden anonym und in bar an Sie und die andere Person ausbezahlt.

Ein Beispiel: Wenn Sie sich entscheiden 5,- Euro zu senden, bekommt der Empfänger einen Betrag von 20,- Euro auf sein Konto gutgeschrieben. Wenn der Empfänger sich entschließt 10,- Euro an Sie zurückzuschicken, bekommen Sie am Ende des Experiments 15,- Euro ausbezahlt.

## Appendix C

### Screenshots of the instructions and the experimental procedure of Experiment 5:

Liebe Teilnehmerin, lieber Teilnehmer,

vielen Dank, dass Sie sich bereit erklärt haben, an dieser Studie teilzunehmen. Wir befinden uns am Anfang einer Forschungsreihe im Bereich **Verhalten in Vertragsverhandlungen**. In der ersten Phase des Projekts geht es um eine neu entwickelte computergestützte Verhandlungssituation zwischen einem(r) Arbeitgeber(in) und einem(r) Arbeitnehmer(in).

Dabei muss jede Woche für einen Zeitraum von drei Arbeitswochen der zu zahlende Lohn sowie die Arbeitsmenge zwischen der Arbeitgeber- und Arbeitnehmerseite neu ausgehandelt werden. Eine Verhandlung besteht aus einem Angebot der Arbeitgeberseite und der Annahme oder Ablehnung durch die Arbeitnehmerseite. Danach ist die erste Verhandlung für die erste Arbeitswoche beendet und die zweite Angebotsverhandlung für die zweite Arbeitswoche schließt sich an.

Ihre Aufgabe besteht darin, entweder aus der Perspektive

**eines(r) Arbeitgebers(in) oder eines(r) Arbeitnehmers(in),**

an der Vertragsverhandlung teilzunehmen. Die Rolle wird Ihnen zugelost.

Um auf die nächste Seite zu gelangen und die Instruktion des(r) Arbeitgebers(in) oder des(r) Arbeitnehmers(in) zu lesen, drücken Sie bitte auf **weiter**.

**Bitte lesen Sie die Instruktion auf den nächsten vier Seiten genau durch:**

Je nach Geschick können Sie neben einer Tafel Schokolade einen bestimmten Betrag in Euro erzielen. Während der drei Angebotsverhandlungen wird Ihr Gewinn bzw. Ihr Einkommen für jedes Angebot in Punkten berechnet, wobei

**1 Punkt = 5 Cent**

entsprechen. Im Falle eines negativen Punktestands am Ende der Studie müssen Sie **nicht** für Ihre Verluste aufkommen. Verluste können Sie jedoch immer durch eigene Entscheidungen verhindern. Verhandeln Sie einen positiven Punktestand, bekommen Sie Ihren Gesamtgewinn bzw. Ihr Gesamteinkommen am Ende der Studie in bar ausgezahlt.

Sie werden nun zufällig der Rolle des(r) Arbeitgebers(in) oder der Rolle des(r) Arbeitnehmers(in) zugelost und verhandeln die gesamte Zeit über mit derselben Person.

**Sie wurden der Rolle des(r) Arbeitgebers(in) zugelost.**

Für die gesamten drei Angebotsverhandlungen befinden Sie sich nun in der Rolle des(r) Arbeitgebers(in) und werden mit demselben/derselben Arbeitnehmer(in) verhandeln.

Weiter

Worum geht's in aller Kürze? Die Arbeitgeberseite muss der Arbeitnehmerseite in jeder der drei Angebotsverhandlungen ein Lohnangebot unterbreiten, das die Arbeitnehmerseite ablehnen oder annehmen kann. Bei jeder Angebotsverhandlung wird der Lohn sowie die Arbeitsmenge nur für eine Arbeitswoche festgelegt, wobei der Gesamtzeitraum der Interaktion drei Wochen (=drei Angebotsverhandlungen) umfasst.

Insgesamt gibt es also drei unterschiedliche Angebotsverhandlungen, wobei jede Angebotsverhandlung aus 2 Phasen besteht. In der **ersten Phase** unterbreitet die Arbeitgeberseite der Arbeitnehmerseite ein Lohnangebot. Dieses besteht aus zwei Komponenten:

- Einer **gewünschten Arbeitsmenge (A)** -zwischen 1 und 10 Punkten
- und dem **Lohn (L)** -zwischen 1 und 100 Punkten.

Wenn die Arbeitgeberseite sich für ein bestimmtes Angebot entschieden hat, wird dieses der Arbeitnehmerseite online mitgeteilt und die Arbeitnehmerseite ist am Zug.

Es schließt sich **Phase zwei** an. Die Arbeitnehmerseite muss sich nun entscheiden, ob sie das Angebot annehmen oder ablehnen möchte:

- Wird das **Angebot von der Arbeitnehmerseite abgelehnt**, dann ist die erste Angebotsverhandlung zu Ende und keine der beiden Parteien verdient etwas.
- Wird das **Angebot von der Arbeitnehmerseite angenommen**, dann muss sich die Arbeitnehmerseite für eine tatsächliche Arbeitsmenge (TA) -zwischen 1 und 10 Punkten- entscheiden. Diese kann gleich hoch oder höher als die gewünschte Arbeitsmenge der Arbeitgeberseite ausfallen (aber nicht geringer!). Die Arbeitnehmerseite kann demzufolge in Grenzen Ihre Arbeitsmenge frei wählen. Hierfür entstehen der Arbeitnehmerseite Kosten (K) -zwischen 0 und 18 Punkten-, die in einer Tabelle am unteren Bildrand nachgeschaut werden können. Wenn sich die Arbeitnehmerseite für eine tatsächliche Arbeitsmenge entschieden hat, wird dies der Arbeitgeberseite umgehend mitgeteilt und die erste Angebotsverhandlung ist zu Ende.

Weiter

Nach jeder der drei Angebotsverhandlungen wird der Gewinn der Arbeitgeberseite und das Einkommen der Arbeitnehmerseite für Sie berechnet:

1. **Angebot abgelehnt:** Sowohl Ihr Gewinn als auch das Einkommen der Arbeitnehmerseite beträgt 0 Punkte.
2. **Angebot angenommen:** Nach folgenden Gleichungen am unteren Bildrand werden Ihr Gewinn und das Einkommen der Arbeitnehmerseite berechnet. Die Tabelle gibt an, welche Kosten der Arbeitnehmerseite für ihre tatsächliche Arbeitsmenge entstehen.

Diese Gleichungen sind allen Teilnehmern(innen) bekannt. Sie können folglich das Einkommen der Arbeitnehmerseite ausrechnen und diese kann Ihren Gewinn ebenfalls berechnen.

$$\begin{aligned} \text{Ihr Gewinn (G)} &= 10 \times \text{tatsächliche Arbeitsmenge (TA)} - \text{Lohn (L)} \\ \text{Einkommen der Arbeitnehmerseite (E)} &= \text{Lohn (L)} - \text{Kosten der tatsächlichen Arbeitsmenge (K)} \end{aligned}$$

Arbeitsmenge:	1	2	3	4	5	6	7	8	9	10
Kosten:	0	1	2	4	6	8	10	12	15	18

Weiter

Am Ende der Studie hat die **Arbeitgeberseite** noch drei zusätzliche Handlungsmöglichkeiten. Nach Ablauf der drei Angebotsverhandlungen werden Ihnen Ihr Gesamtgewinn und das Gesamteinkommen der Arbeitnehmerseite mitgeteilt. Im Anschluss daran können Sie der Arbeitnehmerseite einen Bonus oder eine Bestrafung nach folgenden Regeln zukommen lassen. Natürlich können Sie auf beides auch verzichten:

1. **Bonus:** Entscheiden Sie sich dafür, die Arbeitnehmerseite zu belohnen, können Sie Punkte von Ihrem Punktekonto einsetzen. Diese werden dem Punktekonto der Arbeitnehmerseite doppelt gut geschrieben. Sie erhalten keine Punkte von Arbeitnehmerseite. **Schenken Sie der Arbeitnehmerseite einen Punkt, so erhält diese zwei Punkte zusätzlich auf dem Konto.**
2. **Bestrafung:** Entscheiden Sie sich dafür, die Arbeitnehmerseite zu bestrafen, können Sie je 2 Punkte von Ihrem Punktekonto einsetzen, um je einen Punkt von dem Punktekonto der Arbeitnehmerseite zu löschen. Sie erhalten keine Punkte von der Arbeitnehmerseite. **Um einen Punkt auf Arbeitnehmerseite zu löschen, muss die Arbeitgeberseite zwei Punkte von ihrem Punktekonto opfern.**
3. **Verzicht:** Sie verzichten sowohl auf eine Belohnung als auch auf eine Bestrafung. Das bisher erzielte Ergebnis bleibt für Arbeitgeber- und Arbeitnehmerseite bestehen.

Diese Regeln sind auch der Arbeitnehmerseite von Anfang an bekannt. Allerdings hat sie keine Möglichkeit mehr am Ende der Studie auf Ihre Entscheidung zu reagieren.

Zur Vertiefung des Studiendesigns und der Regeln werden Ihnen nun drei Beispiele und vier Wissensfragen vorgelegt, die Sie bitte berechnen beziehungsweise beantworten. Die während der Übungsphase erzielten Gewinne werden Ihnen allerdings **nicht** in bar ausgezahlt. Es handelt sich hierbei **noch nicht** um eine Interaktion. Daran schließt sich die reale Interaktion zwischen der Arbeitgeber- und Arbeitnehmerseite an. Der resultierende Gesamtgewinn wird Ihnen dann am Ende der Studie ausgezahlt.

Weiter

**Beispiel 1**

Bitte bearbeiten Sie nachfolgende Aufgabe. Beachten Sie dabei, dass nur bei diesen drei Beispielen die Arbeitnehmerseite ausnahmslos auf Ihr Angebot eingehen wird. In der realen Interaktion zwischen der Arbeitgeber- und Arbeitnehmerseite ist es durchaus möglich, dass die Arbeitnehmerseite ein Angebot auch ablehnt.

Ihre gewünschte Arbeitsmenge (zw. 1 - 10 Punkten):

Ihr Lohnangebot (zw. 1 - 100 Punkten):

**Die Arbeitnehmerseite geht auf Ihr Angebot ein. Bitte rechnen Sie nun Ihren Gewinn und das Einkommen der Arbeitnehmerseite anhand untenstehender Gleichungen aus.**

Ihr Gewinn in Punkten:

Kosten der tatsächlichen Arbeitsmenge für die Arbeitnehmerseite (zw. 0 - 18 Punkten):

Einkommen der Arbeitnehmerseite in Punkten:

Ihr Gewinn (G) = 10 x tatsächliche Arbeitsmenge (TA) - Lohn (L)  
 Einkommen der Arbeitnehmerseite (E) = Lohn (L) - Kosten der tatsächlichen Arbeitsmenge (K)

Arbeitsmenge:	1	2	3	4	5	6	7	8	9	10
Kosten:	0	1	2	4	6	8	10	12	15	18

Note: The upper screen depicts the first trial round. The two other trial rounds were identical. The following screen was a feedback screen telling them which calculation was correct and which one not. If a calculation was incorrect, participants had to do this calculation again. The same is true for the additional questions depicted in the lower screen.

**Wissensfragen**

Stellen Sie sich vor, Sie befinden sich am Ende der letzten der drei Angebotsverhandlungen und müssen sich nun entscheiden, ob Sie die Arbeitnehmerseite belohnen, bestrafen oder keine Bestrafung oder Belohnung aussprechen wollen.

Bitte klicken Sie für jede der untenstehenden Aussagen an, ob sie richtig oder falsch ist. Beachten Sie dabei die zuvor genannten Regeln.

**Nur die Arbeitgeberseite hat die Möglichkeit am Ende der letzten Angebotsverhandlung einen Bonus oder eine Bestrafung auszusprechen, oder auf beides zu verzichten.**

richtig  falsch

**Um einen Punkt auf Arbeitnehmerseite zu löschen, muss die Arbeitgeberseite zwei Punkte von ihrem Punktekonto opfern.**

richtig  falsch

**Die Arbeitnehmerseite erhält einen Punkt, wenn die Arbeitgeberseite ihr einen Punkt schenkt. Dabei wird der Arbeitgeberseite kein Punkt abgezogen.**

richtig  falsch

**Die Arbeitnehmerseite erhält zwei Punkt, wenn die Arbeitgeberseite ihr einen Punkt schenkt. Dabei wird der Arbeitgeberseite in diesem Fall nur ein Punkt abgezogen.**

richtig  falsch



Note: After this screen, the manipulations of accessibility experiences and (un)certainty salience were administered as described in the section 3.5.1.2. The items of the manipulation check, the PANAS, and the procedural justice expectations were assessed as described in section 3.5.1.2 and 3.5.1.3. Afterwards, the participants were “connected“ to the employee.



Nun beginnt die **reale Interaktion** zwischen Ihnen und der Arbeitnehmerseite. Sie finden neben sich ein Blatt (Rechenblatt) auf dem Sie nochmals alle Regeln und Gleichungen nachlesen können. Dieses dürfen Sie jetzt umdrehen. Weiterhin können Sie darauf auch Ihre Ergebnisse aus den einzelnen Verhandlungen notieren.

Auf den nächsten Seiten werden Sie gebeten Ihr Angebot bestehend aus einer gewünschten Arbeitsmenge sowie dem Lohn zu unterbreiten.

Die Arbeitnehmerseite bekommt Ihr Angebot online mitgeteilt und wird über Annahme oder Ablehnung entscheiden. Dieser Vorgang kann einige Minuten in Anspruch nehmen. In diesem Fall haben Sie bitte ein wenig Geduld.

Bitte drücken Sie nun auf **weiter**.

Weiter

**Angebot für die erste Arbeitswoche:**

Ihre gewünschte Arbeitsmenge (zw. 1 - 10 Punkten):

Ihr Lohnangebot (zw. 1 - 100 Punkten):

Bitte klicken Sie nun auf **weiter**, um Ihr Angebot abzuschicken.

Weiter

Note: Dependent on the participant's proposal, the computer gave either positive feedback (acceptance of the proposal, upper screen) or negative feedback (rejection of the proposal, lower screen). Between the proposal and the feedback lay a pre-programmed delay from up to 90 seconds.

**Folgendes Angebot für die erste Arbeitswoche haben Sie abgeschickt:**

Ihre gewünschte Arbeitsmenge betrug:

Folgendes Lohnangebot hatten Sie unterbreitet:

**Die Arbeitnehmerseite hat Ihr Angebot angenommen und ist bereit Ihrer gewünschten Arbeitsmenge zu entsprechen.**

Ihr Gewinn beträgt:

Die Kosten der tatsächlichen Arbeitsmenge für die Arbeitnehmerseite belaufen sich auf:

Das Einkommen der Arbeitnehmerseite beträgt:

**Folgendes Angebot für die erste Arbeitswoche haben Sie abgeschickt:**

Ihre gewünschte Arbeitsmenge betrug:

Folgendes Lohnangebot hatten Sie unterbreitet:

**Die Arbeitnehmerseite hat Ihr Angebot abgelehnt.**

Ihr Gewinn sowie das Einkommen der Arbeitnehmerseite belaufen sich jeweils auf 0 Euro.

Sie befinden sich nun am Anfang der **zweiten Arbeitswoche** und verhandeln wiederum mit derselben Arbeitnehmersseite.

Bitte klicken Sie nun auf weiter um Ihr **zweites Angebot** der Arbeitnehmersseite zu unterbreiten.

Note: After this screen, the next round started. Overall, the participants negotiated over three rounds. The lower screen depicts the end of the interaction phase.

Die Phase der Interaktion ist nun beendet. Auf den nächsten Seiten werden Ihnen noch ein paar Fragen gestellt, wie Sie die Prozedur der Vertragsverhandlung erlebt haben.

**Die drei Angebotsverhandlungen sind nun beendet und Sie bekommen Ihren Gesamtgewinn und das Gesamteinkommen der Arbeitnehmerseite zurückgemeldet. Daran schließen sich Ihre weiteren Handlungsmöglichkeiten an.**

Ihr Gesamtgewinn in Punkten:

Das Gesamteinkommen der Arbeitnehmerseite in Punkten:

**Bonus:**  
Wenn Sie sich für einen Bonus entscheiden, erhält die Arbeitnehmerseite für jeden Punkt den Sie ihr von Ihrem Punktekonto schenken, zwei Punkte zusätzlich auf Ihrem Punktekonto gut geschrieben.

Tragen Sie hier die Anzahl der Punkte ein, die Sie der Arbeitnehmerseite von Ihrem Punktekonto schenken.

**Bestrafung:**  
Wenn Sie sich für eine Bestrafung entscheiden, können Sie je zwei Punkte von Ihrem Punktekonto einsetzen, um je einen Punkt von dem Punktekonto der Arbeitnehmerseite zu löschen.

Tragen Sie hier die Anzahl der Punkte ein, die Sie opfern möchten, um Punkte von dem Punktekonto der Arbeitnehmerseite zu löschen.

**Verzicht:**  
Wenn Sie sowohl auf einen Bonus als auch auf eine Bestrafung verzichten wollen, dann drücke Sie einfach auf weiter.

Ihr Gesamtgewinn sowie das Gesamteinkommen der Arbeitnehmerseite bleiben bestehen.

Note: On this screen, participants could give a final bonus or punishment. After this screen, the dependent measures of procedural and distributive justice perceptions were assessed as described in section 3.5.1.3.

## Appendix D

This summary of the negotiation rules of Experiment 5 was given to the participants on a sheet of paper. This was done *after* the accessibility experiences manipulation at the beginning of the interaction phase.

**1. Tabelle mit der Arbeitsmenge und den entsprechenden Kosten für die Arbeitnehmerseite:**

Arbeitsmenge	1	2	3	4	5	6	7	8	9	10
Kosten	0	1	2	4	6	8	10	12	15	18

**2. Gleichungen zur Berechnung des Gewinns und des Einkommens:**

Ihr Gewinn (G) = 10 x tatsächliche Arbeitsmenge (TA) – Lohn (L)  
 Einkommen der Arbeitnehmerseite (E) = Lohn (L) – Kosten der tatsächlichen Arbeitsmenge (K)

**3. Angebote während der realen Interaktion sowie Gewinn und Einkommen für jede der drei Angebotsverhandlungen:**

Angebot 1:	Angebot 2:	Angebot 3:
Gewünschte Arbeitsmenge (A)	Gewünschte Arbeitsmenge (A)	Gewünschte Arbeitsmenge (A)
Lohn (L)	Lohn (L)	Lohn (L)
Tatsächliche Arbeitsmenge (TA)	Tatsächliche Arbeitsmenge (TA)	Tatsächliche Arbeitsmenge (TA)
Gewinn der Arbeitgeberseite (G)	Gewinn der Arbeitgeberseite (G)	Gewinn der Arbeitgeberseite (G)
Kosten der tatsächlichen Arbeitsmenge (K)	Kosten der tatsächlichen Arbeitsmenge (K)	Kosten der tatsächlichen Arbeitsmenge (K)
Einkommen der Arbeitnehmerseite	Einkommen der Arbeitnehmerseite	Einkommen der Arbeitnehmerseite

**4. Gesamtgewinn der Arbeitgeberseite und Gesamteinkommen der Arbeitnehmerseite:**

	In Punkten
Gesamtgewinn der Arbeitgeberseite:	
Gesamteinkommen der Arbeitnehmerseite:	

**5. Bonus, Bestrafung oder Verzicht:**

- Bonus: Wenn Sie sich für einen Bonus entscheiden, erhält die Arbeitnehmerseite für jeden Punkt den Sie ihr von Ihrem Punktekonto schenken zwei Punkte zusätzlich auf ihrem Konto gut geschrieben. Tragen Sie hier die Anzahl der Punkte ein, die Sie der Arbeitnehmerseite von Ihrem Punktekonto schenken: \_\_\_\_\_ Punkte
- Bestrafung: Wenn Sie sich für eine Bestrafung entscheiden, können Sie je zwei Punkte von Ihrem Punktekonto einsetzen, um je einen Punkt von dem Punktekonto der Arbeitnehmerseite zu löschen. Tragen Sie hier die Anzahl der Punkte ein, die Sie opfern möchten, um Punkte von dem Punktekonto der Arbeitnehmerseite zu löschen: \_\_\_\_\_ Punkte
- Verzicht: Wenn Sie sowohl auf einen Bonus als auch auf eine Bestrafung verzichten wollen, dann bleibt Ihr Gesamtgewinn sowie das Gesamteinkommen der Arbeitnehmerseite bestehen.

**6. Abschließender Gesamtgewinn der Arbeitgeberseite und abschließendes Gesamteinkommen der Arbeitnehmerseite:**

	In Punkten
Gesamtgewinn der Arbeitgeberseite:	
Gesamteinkommen der Arbeitnehmerseite:	



## Eidesstattliche Erklärung

Hiermit versichere ich, dass ich die vorliegende Dissertation eigenständig und ohne Benutzung anderer als der angegebenen Quellen und Hilfsmittel angefertigt habe. Wörtliche oder inhaltliche Entlehnungen aus anderen Quellen sind eindeutig als solche kenntlich gemacht und mit entsprechenden Quellenangaben versehen. Diese Arbeit hat in gleicher oder ähnlicher Form noch keiner Prüfungsbehörde vorgelegen.

Mannheim, den 10. November 2006

Dipl.-Psych. Patrick Müller