Negotiation in dyads and groups: the effects of social and epistemic motives

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CHAPTER 4

When competition breeds equality:
Effects of appetitive versus aversive competition in negotiation\(^1\)

Many social situations require individuals to negotiate – to communicate about their perceived divergent interests to reach a joint solution (Carnevale & Pruitt, 1992). Although many negotiations allow both parties to achieve their objectives, negotiators oftentimes perceive the situation to be win-lose (McClintock & McNeel, 1966; Pruitt, 1981). For example, more than two-thirds of research participants have a fixed-pie perception prior to entering the negotiation: They believe that their own preferences and priorities are diametrically opposed to those of their counterpart (Thompson & Hrebic, 1996). This often leads negotiators to behave competitively towards each other (Harinck, De Dreu, & Van Vianen, 2000), a tendency that may be fueled by widespread business practices such as "ranking on the curve", which drives employees to attempt to outperform others (Pfeffer & Sutton, 2006). For example, according to Chris Anderson, the editor-in-chief of Wired Magazine,: "Ranking on a curve is a good thing. We live in a competitive world and having to compete for the promotion, raise, bonus, review score, is all part of it" (Anderson, 2003, ¶ 3).

Given that competitive motivation is so widespread and relevant to negotiation and related situations, it is striking that research on negotiation has almost entirely ignored competitive motivation. For instance, in their meta-analytic review of studies on social motivation in negotiation, De Dreu, Weingart and Kwon (2000) concluded "because negotiation research tended to focus on egoistic (pro-self) but not competitive motives, we excluded the competitive motive from the current analysis" (p. 890). And in his review of the relevant literatures Van Lange (2000) noted that "... it should be clear that the pursuit of self-interest is too limited to fully explicate the ways in which we behave and interact ... It is, therefore, all the more surprising that many or most theories and models of interpersonal behavior do not [seek to include] ... competitive orientation" (p. 326).

The goal of this chapter was to redress this situation, and to gain insight into the psychological and behavioral processes resulting from competitive motivation in negotiation. Competitive motivation is defined as the desire to maximize the (positive) difference between one's own, and the other party's outcomes (e.g., Kuhlman & Marshello, 1975; Van Lange, 1999). It influences perceptions, behavior and feelings in a variety of interdependent situations (Deutsch, 1973). For example, compared to cooperative individuals, competitors emphasize differences rather than common ground (Deutsch, 1973), show higher distrust, use more contentious tactics...
(Pruitt & Carnevale, 1993) and are more likely to expect both the interaction and the other party to be competitive (Kelley & Stahelski, 1970).²

The present chapter builds on these notions, and expands past thinking about competition in negotiation and related situations by distinguishing between two different types of competitive motivation: Appetitive competition, in which negotiators are trying to do better than their counterpart, and aversive competition, in which negotiators are trying to make sure that their counterpart does not do better than themselves (Garner & Deutsch, 1974; Messick & Thorngate, 1967). This chapter begins with an analysis of the psychological processes that associate with aversive and appetitive orientations, and develops ideas about how these psychological processes might affect negotiation behavior and outcomes. Consistent with a motivated information processing analysis of negotiation (De Dreu & Carnevale, 2003), of critical importance is that appetitive and aversive competitors respond quite differently to information about the negotiation and their counterpart that becomes or is available during negotiation. Specific predictions were tested in four experiments that are reported consecutively.

The Psychology of Appetitive and Aversive Competition

As mentioned above, a critical difference between appetitive and aversive competitors is that the former are focused on getting ahead and trying to outdo the other party, whereas the latter are focused on avoiding getting behind and on preventing to lose (Messick & Thorngate, 1967; Van Lange, De Cremer, Van Dijk, & Van Vuurt, 2007). Seen this way, appetitive competition shares much with a so-called approach orientation, which entails a concern with attaining positive outcomes such as favorable judgments of competence. Aversive competition, in contrast, shares much with a so-called avoidance orientation, which entails a concern with avoiding negative outcomes such as unfavorable judgments of competence. Contrary to an approach goal, an avoidance goal undermines intrinsic motivation – people enjoy activities less and are less motivated to continue their tasks (Elliot & Harackiewicz, 1996). Also, avoidance orientations associate with fear of failure, whereas approach orientations associate with both fear of failure and achievement motivation (Elliot & Church, 1997). In other words, it is expected that appetitive rather than aversive competitors are more motivated to obtain a positive outcome vis-à-vis a counterpart, and less motivated to avoid falling behind. This should come together with greater task enjoyment, and more self-confidence.

The idea that appetitive competitors are primarily motivated to achieve positive outcomes and that aversive competitors are primarily motivated to avoid negative outcomes resonates with the idea that people have different self-regulatory foci either related to aspirations, growth, and accomplishment (promotion focus), or
to protection, safety and responsibility (prevention focus) (Higgins, 1998). These two regulatory foci elicit different strategic inclinations that are directed towards a desired end state: People with a promotion focus are sensitive to the presence or absence of positive outcomes, while people with a prevention focus are concerned with the presence or absence of negative outcomes (Higgins, Roney, Crowe, & Hymes, 1994). Thus, promotion focus motivates individuals to accomplish hits and avoid errors of omission (i.e., loss of accomplishment), while prevention focus motivates individuals to attain correct rejections and avoid errors of commission (i.e., making a mistake; Crowe & Higgins, 1997).

Based on Regulatory Focus Theory, one would expect appetitive competitors, who have a stronger promotion focus, to be concerned with achievements and avoiding errors of omission (e.g., failing to exploit opportunities). Aversive competitors, who have a stronger prevention focus, would be more concerned with duty and safety, and avoiding errors of commission (e.g., creating opportunities for one’s adversaries). Furthermore, promotion focus gives rise to greater risk-tolerance, and more cognitive flexibility (Friedman & Forster, 2001). For example, promotion focused negotiators made higher opening offers and achieved higher individual as well as collective outcomes than prevention-focused negotiators (Galinsky, Leonardelli, Okhuysen, & Mussweiler, 2005). In other words, one might expect appetitive competitors to be less risk-averse, and more creative than aversive competitors.

Taken together, the literatures on approach-avoidance goals and on regulatory focus together suggest appetitive and aversive competitors differ in a number of related psychological processes. Compared to aversive competitors, appetitive competitors may have greater intrinsic motivation and self-confidence, they may be more concerned with errors of omission than with errors of commission, they may be less risk-averse, and more creative in their thinking. In the next section these insights are used to develop ideas about whether, how, and why appetitive and aversive competitors differ in negotiation processes and outcomes.

**Negotiation Processes and Outcomes**

Although scholars and practitioners have emphasized the importance of creating value in negotiation, negotiators themselves are at least as concerned with the way value is distributed. From the mere definition of competition, it follows that both appetitive and aversive competitors value getting more than their counterpart better than getting less. Interestingly, however, from our definition is also follows that appetitive competitors would be relatively dissatisfied with an equal distribution of value between themselves and their counterpart, whereas aversive competitors
would be relatively satisfied with equality. The reason is that to appetitive competitors, equality means they did not achieve their goal of getting ahead; to aversive competitors, however, equality means they did achieve their goal of not falling behind.

This differential valuation of equality may have important implications for the way negotiators search and process information about the negotiation task, and their negotiation counterpart. First of all, impasse—not reaching an agreement—should be less acceptable to appetitive competitors than to aversive competitors. Appetitive competitors only achieve something if they come out ahead, and thus will mobilize energy to avoid impasse and to defeat their counterpart. Because appetitive competitors have nothing to lose, they may be relatively risk-tolerant and creative. They may fail to reciprocate concessions made by their counterpart and instead attempt to exploit any sign of cooperation. Aversive competitors, in contrast, have much to lose in settling on a particular deal—whereas an impasse guarantees them they are not ending up behind, settlement always entails the possibility they overlooked something and inadvertently they may still end up with less than their counterpart. Aversive competitors will thus be risk-averse and (hyper)vigilant. They try to learn as much about their counterpart as possible and will carefully track their counterpart's limits and aspirations. They may forego possibilities to exploit their counterpart simply because it is too risky and may backfire—instead, aversive competitors may carefully mimic their counterparts to learn and to encourage them to continue making concessions (Smith, Pruitt, & Carnevale, 1982).

In addition to lower valuation of equality, and greater tendency to exploit one's counterpart's concessions, appetitive competitors may also settle more easily than aversive negotiators. Appetitive competitors with their approach motivation and promotion focus are more self-confident and optimistic than aversive competitors with their avoidance motivation and prevention focus. Self-confidence and optimism leads negotiators to believe that victory is around the corner, and that their goals can be achieved relatively easily (Ross & Ward, 1995). In the absence of a possibility to truly assess the (relative) value of an agreement, appetitive competitors may be more likely to believe the agreement is favorable to them and settle. Aversive competitors, in contrast, may be more likely to fear the agreement is not favorable to them, and prefer (temporary) impasse to a potentially disadvantageous agreement.

The Present Chapter: Overview

In four experiments we tested the basic notions that compared to aversive competitors, appetitive competitors value equality less, are more likely to exploit their counterpart's concessions and yet are more inclined to settle. In Experiment 4.1
we tested the accuracy of our assumption that appetitive competitors care less for
equality than aversive competitors, and experience less anxiety and greater optimism.
In Experiment 4.2, negotiators' concession making in reaction to one's counterpart's
concession making was examined, and in Experiment 4.3 and 4.4 we tested our
notions about the likelihood of impasse. In these last two experiments we also tried
to better understand how information provided to aversive and appetitive
competitors may be used differently in the course of the negotiation. We return to
this when we have presented the first two experiments in full detail.

Introduction to Experiment 4.1

In Experiment 4.1 a methodology developed by Messick and Sentis (1985;
see also Loewenstein, Thompson, & Bazerman, 1989) was adapted to test whether,
and to what extent, aversive and appetitive competitors are satisfied with
advantageous inequality (receiving more than their counterpart), equality (receiving
the same as their counterpart), and disadvantageous inequality (receiving less than
their counterpart). We added an individualistic motivation to the experimental design
to enable comparisons with previous research that focused on (proxies for)
individualistic motivation (e.g., Loewenstein et al., 1989; Ordonez, Connolly, &
Coughlan, 2000).

Two sets of dependent measures were taken. First, our analysis implies that
compared to appetitive competitors, aversive competitors should experience greater
fear and anxiety (Hypothesis 1a) and less optimism (Hypothesis 1b). Second, and
more important, satisfaction with various distributions of outcomes between the
participant and his or her counterpart was measured. For individualistic motivation
we expected to replicate past research showing that outcome satisfaction declines
when personal outcomes decline (e.g., Loewenstein et al., 1989). However, different
patterns in the competitive motivation conditions were expected. Appetitive
competitors would be more satisfied with advantageous inequality than with equality
or disadvantageous inequality (Hypothesis 2a), whereas aversive competitors would
be more satisfied with advantageous inequality and with equality than with
disadvantageous inequality (Hypothesis 2b). Thus, it was expected that the critical
difference between appetitive and aversive competitors is their relative valuation of
equality – it is as dissatisfying as disadvantageous inequality to appetitive
competitors, and as satisfying as advantageous inequality to aversive competitors.

Method

Participants and design
Sixty-four students enrolled in an organizational behavior course at the University of Amsterdam participated in the study, for which they could win 10 Euro in a lottery. Participants were randomly assigned to the conditions of one-level between-participants design (appetitive vs. aversive vs. individualistic motivation). Anxiety, optimism, and satisfaction with outcome differentials were the dependent variables.

Procedure and manipulation of motivation

Participants were provided with an instruction leaflet. They were asked to imagine themselves as either a union or management representative who had to negotiate about an employment contract. The instructions stated that negotiators had to reach agreement on five issues (i.e., salary, starting date, length of contract, annual raise and medical coverage) and that on all these issues they could earn points, depending on the decisions they made. Participants were provided with their own profit schedule, but did not see the profit schedule of the other party. Participants read that they could reach a maximum of 1290 points, and that failure to reach agreement would lead to zero points (a similar task was used in Experiment 4.2, where we present more detail about the task and the issue charts that were used).

Motivation was manipulated through instructions, following a procedure used in research on pro-social versus individualistic motivation (e.g., Pruitt & Lewis, 1975; Ten Velden, Beersma, & De Dreu, 2007b). Participants in the appetitive competition condition read that it was important that they would receive more outcomes than the other party. Participants in the aversive competition condition read that it was important that they did not receive lower outcomes than the other party, and participants in the individualistic condition read that it was important that they received high outcomes.

After reading their instructions, participants completed a questionnaire, were debriefed and were thanked for their participation.

Dependent variables

Participants indicated their anxiety and optimism on 5-point scales ranging from not at all (1) to very (5). We measured satisfaction by asking participants to rate their satisfaction with 6 different outcome distributions on a 5-point scale, ranging from not satisfied (1) to very satisfied (5). Using the payoff charts shown to participants in the negotiation task instructions as reference material, we constructed two positive outcome differences (1290 vs. 0 points; 885 vs. 405 points; hereafter referred to as large and small advantageous inequality, respectively), two neutral outcome differences (645 vs. 645 points; 0 vs. 0 points, hereafter referred to as equality), and 2 negative outcome differences (405 vs. 885 points; 0 vs. 1290 points, hereafter referred to as small and large disadvantageous inequality, respectively).
To check the adequacy of the manipulation of motivation, participants were asked to complete two items measuring appetitive motivation (e.g., "To me, doing well in negotiation means receiving more points than the other party;" Cronbach’s α = .80), two items measuring aversive motivation (e.g., "To me, doing well in negotiation means trying not to receive fewer points than the other party;" Cronbach’s α = .84), and one item measuring individualistic motivation ("to me, doing well in negotiation means achieving as many points as possible;" all items 1 = strongly disagree, to 5 = strongly agree).

Results

Manipulation checks

Manipulation checks for appetitive, aversive, and individualistic motivation were analyzed in three one-way (motivation: appetitive vs. aversive vs. individualistic) Analysis of Variance (ANOVA) designs. Participants in the appetitive condition reported a stronger appetitive motivation ($M = 4.23$, $SD = 0.17$) than those in the aversive ($M = 3.66$, $SD = 0.16$) or individualistic conditions ($M = 3.25$, $SD = 0.20$; both $t > 2.09$, $p < .05$), $F(2, 61) = 7.16$, $p < .005$, $\eta^2 = .19$. Furthermore, participants in the aversive condition reported a stronger aversive motivation ($M = 4.29$, $SD = 0.16$) than those in the appetitive ($M = 3.18$, $SD = 0.18$) or individualistic condition ($M = 3.13$, $SD = 0.20$; both $t > 4.38$, $p < .01$), $F(2, 61) = 14.15$, $p < .001$, $\eta^2 = .32$. Finally, participants in the individualistic condition reported a stronger individualistic motivation ($M = 4.69$, $SD = 0.22$) than those in the appetitive ($M = 3.82$, $SD = 0.18$) or aversive conditions ($M = 3.42$, $SD = 0.17$; both $t > 3.54$, $p < .01$), $F(2, 61) = 10.79$, $p < .001$, $\eta^2 = .26$.

Anxiety and Optimism

Consistent with Hypothesis 1a, a one-way ANOVA showed that aversive competitors reported more anxiety ($M = 2.12$, $SD = 0.86$), than appetitive competitors ($M = 1.45$, $SD = 0.60$) and individualists ($M = 1.63$, $SD = 0.72$; both $t > 2.07$, $p < .05$), $F(2, 61) = 5.07$, $p < .01$, $\eta^2 = .14$. The difference between individualists and appetitive competitors was not significant, $t < 1$, ns. Furthermore, appetitive competitors reported more optimism ($M = 4.18$, $SD = 0.66$), than aversive competitors ($M = 2.31$, $SD = 1.09$) and individualists ($M = 2.88$, $SD = 0.72$; both $t > 4.55$, $p < .001$), $F(2, 61) = 28.09$, $p < .001$, $\eta^2 = .48$. The difference between individualists and aversive competitors was also significant, $t = 2.02$, $p < .05$. Thus, both Hypothesis 1a and Hypothesis 1b are supported.

Outcome Satisfaction

We expected different satisfaction slopes for individualistic, appetitive and aversive participants. Data were analyzed in a 3 x 5 mixed-model ANOVA with motivation as a three-level between-participants variable (appetitive vs. aversive vs.
individualistic) and outcome distribution as a five-level within-participants variable (large versus small advantageous inequality vs. equality (the average of 645-645 and 0-0) versus small versus large disadvantageous inequality).

A main effect for outcome difference, $F(4, 244) = 706.88, p < .001, \eta^2 = .92$, showed that satisfaction declined when outcome difference declined from large advantageous inequality ($M = 4.55, SD = 0.59$) to large disadvantageous inequality ($M = 1.05, SD = 0.28$). This main effect was qualified by a significant interaction between outcome distribution and motivation, $F(8, 244) = 36.10, p < .001, \eta^2 = .54$.

The interaction is displayed in Figure 4.1, and decomposed using simple effects analysis for outcome distribution within each motivation condition. This showed, first, that satisfaction in individualists decreased steadily and linearly when moving from large advantageous inequality to large disadvantageous inequality, $F(4, 244) = 173.08, p < .001, \eta^2 = .83$. All contrasts between distributions were significant at $p < .001$. Second, and as predicted in Hypothesis 2a, appetitive competitors' satisfaction was equally high for large and small advantageous inequality, $M = 4.71$ vs. $M = 4.41, F(1, 61) = 2.12, ns$, and significantly lower for equality, $M = 4.41, vs. M = 1.70, F(1, 61) = 333.16, p < .001, \eta^2 = .85$. Satisfaction with equality was higher than with disadvantageous inequality ($M = 1.18, SD = 0.39$), and with large disadvantageous inequality ($M = 1.29, SD = 0.27$), $F(1, 61) > 10, p < .01, .16 < \eta^2 < .18$. The difference between small and large disadvantageous inequality was not significant, $F(1, 61) < 1, ns$. Finally, and as predicted in Hypothesis 2b, for aversive competitors there were no significant differences in satisfaction with large advantageous inequality ($M = 4.38, SD = 0.64$), small advantageous inequality ($M = 4.23, SD = 0.51$), and equality, ($M = 4.08, SD = 0.68$), $F(1, 61) = 1.15, ns$, and $F(1, 61) = 1.27, ns$, respectively (the difference between large and small was marginally significant, $F(1, 61) = 3.44, p < .07, \eta^2 = .05$). However, aversive competitors' satisfaction declined significantly when outcome difference moved from equality to disadvantageous inequality ($M = 1.19, SD = 0.14$), $F(1, 61) = 474.20, p < .001, \eta^2 = .89$ (the difference between small and large disadvantageous inequality ($M = 1.00, SD = 0.00$) was marginally significant, $F(1, 61) = 3.10, p < .09, \eta^2 = .05$).
Figure 4.1. Satisfaction with outcome distribution as a function of appetitive, aversive and individualistic motivation (Experiment 4.1).

Discussion and Introduction to Experiment 4.2

Experiment 4.1 showed that aversive competitors experienced more anxiety and less optimism than appetitive competitors, and valued equality more. Put differently, aversive competitors did not discriminate between equality and advantageous inequality, in which they obtain more outcomes than their counterpart. They did, however, discriminate between advantageous inequality and equality on the one hand, and disadvantageous inequality on the other. Appetitive competitors, in contrast, did not discriminate between equality and disadvantageous inequality.

In Experiment 4.2 we focused on another key aspect of our analysis, namely that appetitive competitors are risk-seeking and willing to exploit their counterpart’s concession making. Aversive competitors, in contrast, have higher anxiety and prefer safety and error avoidance. Therefore, they are less likely to exploit their counterpart but, instead, more likely to closely monitor other’s behavior and mimic and reciprocate as much as possible. Doing so "rewards" the counterpart's behavior, motivating him or her to continue making large concessions or, alternatively, motivating him or her to give up the tough stance that leads nowhere. In addition, by carefully matching the counterpart's concessions, negotiators move towards an agreement that not necessarily creates great value personally or collectively, but does
create equality of outcome-distribution. Achieving this is what would satisfy aversive
competitors, who wish not to fall behind.

Participants in Experiment 4.2 had an appetitive or aversive goal and
interacted with a preprogrammed counterpart (simulated by a computer) who either
followed a tough strategy with small concessions, or a soft strategy with large
concessions. We tested the prediction that negotiators make larger concessions when
their counterpart is soft rather than tough, but especially when the negotiators have
an aversive rather than appetitive orientation (Hypothesis 3).

Method

Participants and Design

Participants were 105 students from the University of Amsterdam (36 men,
$M = 20.59$ years), who participated for course credit, or were paid 7 Euro
(approximately 10 USD). The design included the participant's motivation (aversive
versus appetitive) and the counterpart's concession size (large versus small) as
between-participants factors. Dependent variables were participants' perceptions of
their counterpart, participants' anxiety and optimism and concession making.

Procedure

Upon arrival in the laboratory, participants were seated behind computers in
separate cubicles, which prevented them from talking to each other. The
experimenter told participants that they were about to participate in a two-person
negotiation, but that they had to wait for the arrival of their counterpart. After a few
minutes, the experiment started. All instructions were presented to the participants
on their computer screen. Participants read that the purpose of the experiment was
to investigate how negotiations unfold when negotiators communicate via the
computer. They were told that they were about to be matched to another participant,
and that they would engage in a computer-mediated negotiation. In reality, a
computer program simulated this other person.

Negotiation Task and Manipulation of Counterpart’s Concession Size

The negotiation task was a computerized version of the one used in past
studies on multi-issue negotiation (see, e.g., Van Kleef, Manstead, & De Dreu, 2004).
It captures the main characteristics of real-life negotiations in that it involves
multiple issues, provides negotiators with information about their own pay-offs only,
and meets the provisional offer-counteroffer characteristic of many negotiation
situations (cf. Pruitt, 1981). In the current experiment, participants took on the role
of representative of a student board who had to negotiate with a representative of
the government and were instructed that their profits depended on three issues:
College tuition, monthly funding and travel card duration. Participants were shown a
pay-off chart that listed 15 possible agreements per issue, and their corresponding
profit. For college tuition, an agreement on Level 15 ($3350) gave participants 0 payoff and an agreement on Level 1 ($1600) gave participants 280 payoff (i.e., increments of 20 per level). For monthly funding, Level 15 ($300) gave participants 0 payoff, and level 1 ($650) gave participants 280 payoff (i.e., increments of 20 per level). Finally, for travel card duration, Level 15 (32 months) yielded a 0 payoff, and Level 1 (60 months) yielded a 280 payoff (i.e., increments of 20 per level). Participants were informed that the government's representative would make the first offer, that they could respond with a counteroffer, and that the negotiation would end on agreement or when time would run out. In the latter case, no points would be obtained. It should be noted that throughout the instructions no indication was given as to (a) the counterpart's profits or (b) the maximum number of rounds.

Once the negotiation started the government representative (i.e., the computer) made a first offer. Over the six negotiation rounds the government proposed different levels of agreement for the three issues, depending on the manipulation of concession size (small vs. large). The counterpart's concession size was manipulated by using a preprogrammed concession strategy used in previous research (Van Kleef et al., 2004). In the small-concessions condition, the counterpart conceded 1 unit in each round. Thus, in this condition the counterpart's opening offer was 15–15–14 (representing a 1-unit concession from the maximum payoff of 15–15–15), and the offer in the sixth and last round was 13–14–12 (i.e., 6 units below 15–15–15). In the large-concessions condition the counterpart conceded 3 units per round, starting with 14–15–13 (minus 3 units), and finishing with 9–10–8 (minus 18 units).

A demand by the participant was accepted if it equalled or exceeded the offer the computer was about to make in the next round. Thus, for example, if a participant in the large concession condition demanded 10-11-9 in Round 4, this demand was accepted by the computer since its next offer (in Round 5) would have been 10-11-9. After the sixth round, the negotiation was interrupted regardless of whether participants had reached an agreement (cf. Van Kleef et al., 2004). Following procedures established in previous research, participants who reached an agreement before Round 6 (n = 6) were excluded from the sample (cf. Tripp & Sondak, 1992).

**Manipulation of Own Motivation**

To manipulate motivation, we used instructions combined with incentives, following a procedure used to manipulate social motivation in prior research (e.g., Beersma & De Dreu, 2002; Carnevale & Lawler, 1986; Ten Velden et al., 2007b). Participants in the *appetitive* condition read that it was important that they would receive higher outcomes than their counterpart. This was accompanied by an incentive; participants were informed that those negotiators who succeeded in
receiving higher outcomes than the other party would enter a lottery contest in which they could win 20 Euro. Participants in the *aversive* condition read that it was important that they did not receive lower outcomes than their counterpart. This was accompanied by an incentive; participants were informed that those negotiators that succeeded in not receiving lower outcomes than the other party would enter a lottery contest in which they could win 20 Euro.

**Dependent Measures**

**Perception of the counterpart.** Participants were asked to indicate their perception of their counterpart on 9 items (friendly, selfish, polite, trustworthy, amiable, social, respectful, honest, rude). Answers could be given on 7-point scales (1 = *completely false* to 7 = *completely true*). Negatively framed items were reverse scored, and ratings were averaged into a single index of the perception of the counterpart (Cronbach's *a* = .91).

**Anxiety and Optimism.** As in Experiment 4.1, participants were asked to indicate the anxiety and optimism they experienced during the negotiation on a 7-point scale ranging from *not at all* (1) to *very much* (7).

**Concession making.** We used distance traveled as a reflection of participants' concession making (cf., Smith et al., 1981; Van Kleef et al., 2004). It was the difference between the demands participants made for the three issues during Round 1 and the demands during the last round they negotiated (Round 6). The higher the distance travelled, the larger the overall concessions made by the participant.

**Manipulation checks.** The check for the manipulation of own motivation was the same as in Experiment 4.1 (Cronbach's *a* > .70). To check the adequacy of the manipulation of concession size, a four-item questionnaire was used (e.g., "During the negotiation, the government's representative made large concessions" and "The government's representative was a tough negotiator"); 1 = *completely disagree* to 7 = *completely agree*. Cronbach's *a* = .87, and the items were averaged into a single index.

**Results**

**Manipulation Checks**

A 2 (own motivation: appetitive vs. aversive) x 2 (concession size: small vs. large) ANOVA on the manipulation check for own motivation revealed that participants in the appetitive condition reported a higher appetitive motivation (*M* = 5.59, *SD* = 1.04) than participants in the aversive condition (*M* = 4.60, *SD* = 1.15), *F* (1, 101) = 21.27, *p* < .001, *η* = .17. No other effects were significant. Furthermore, participants in the aversive condition reported a higher aversive motivation (*M* = 5.65, *SD* = 1.04) than participants in the appetitive condition (*M* = 4.70, *SD* = 1.21), *F* (1, 101) = 17.56, *p* < .001, *η* = .15. Again, no other effects were significant. Fourth, participants in the large concessions condition reported larger concessions (*M* =
5.35, SD = 1.44) than participants in the small concessions condition (M = 3.76, SD = 1.25), F (1, 101) = 33.73, p < .001, η² = .25. No other effects were significant.

Finally, a significant main effect for concession size on perception of the counterpart showed that participants in the large concession condition perceived their counterpart more positively (M = 4.20, SD = 0.93) than participants in the small concessions condition (M = 3.54, SD = 1.20); F (1, 101) = 11.05, p < .01, η² = .10.

Anxiety and Optimism

A 2 (appetitive vs. aversive motivation) x 2 (other’s small vs. large concessions) ANOVA on anxiety and optimism revealed that aversive participants felt more anxious (M = 2.26, SD = 1.17) than appetitive participants (M = 1.83, SD = 0.90), F (1, 101) = 4.56, p < .05, η² = .04. No other effects for anxiety were significant, and it is concluded that Hypothesis 1a received new support. For optimism, results showed that negotiators in the large concessions condition indicated more optimism (M = 6.02, SD = 1.17) than negotiators in the small concessions condition (M = 5.28, SD = 1.66), F (1, 101) = 6.95, p < .05, η² = .06. Because no other effects for optimism were significant, Hypothesis 1b was not supported. Thus, aversive negotiators felt more anxious, but not less optimistic, than appetitive negotiators.

Concession Making

A 2 x 2 ANOVA on distance travelled revealed the expected interaction between own motivation and concession size, F (1, 101) = 4.02, p < .05, η² = .04. Figure 4.2 shows that in the aversive condition, participants conceded more in the large concession condition (M = 149.17, SD = 57.78) than in the small concession condition (M = 94.78, SD = 62.15); F (1, 101) = 5.22, p < .05, η² = .05. For appetitive competitors, the difference between the large concession condition (M = 108.15, SD = 106.59) and the small concession condition (M = 118.06, SD = 84.75) was not significant, F (1, 101) < 1, ns. No other effects were significant. Because the mean in the aversive motivation/large concessions condition differs from all others, who do not differ from each other, it is justified to conclude that appetitive competitors were more inclined to exploit their counterpart especially when this counterpart appeared soft. In other words, Hypothesis 3 received support.
Figure 4.2. Distance Traveled as a function of the interaction between motivation and the counterpart's concession size (Experiment 4.2).

Discussion and Introduction to Experiment 4.3

Results of the first experiment showed that compared to appetitive competitors, aversive competitors were relatively satisfied with equality, and experienced more anxiety and less optimism than appetitive negotiators. Experiment 4.2 corroborated these findings (except for optimism) and also showed that aversive competitors made larger concessions when their counterpart made large rather than small concession; appetitive competitors were relatively insensitive to their counterpart's concession behavior. Even though both appetitive and aversive saw their counterpart as more friendly and trustworthy when the counterpart made large rather than small concessions, only aversive competitors reciprocated. This may be because aversive competitors value equality and through reciprocation achieve this acceptable goal. In addition, aversive competitors are risk-averse and through reciprocation play safe—they prevent being exploited by a tough counterpart, and they do not scare away a soft counterpart.

In Experiment 4.3 and 4.4 we examined implications of our analysis for the actual outcomes negotiators receive—the extent to which they settle and, if they do, the quality of the agreement they reach. Participants conducted, in pairs and mediated through computers, a multi-issue negotiation with integrative potential (i.e., issue priorities differed across negotiators and by making small concessions on
important issues and large concessions on unimportant ones high joint outcomes could be reached. This task is representative of many real-life negotiations (Pruitt, 1981; Raiffa, 1982), and allowed us to assess impasse rate as well as the outcomes achieved by the two negotiators (i.e., joint outcomes).

Our analysis thus far implied that appetitive competitors are more risk seeking, optimistic, and exploitative, but also more likely to settle. First, they may be more (over-) confident that the agreement is favorable to them and serves their goal of coming out ahead. Second, they may dislike impasse more than aversive competitors simply because impasse means they did not achieve their goal of coming out ahead. To investigate these two explanations, half of the aversive negotiation pairs were informed that their counterpart shared their goal of either not falling behind (i.e. an aversive competitive motivation), and half of the appetitive negotiation pairs were informed that their counterpart shared their goal of winning (i.e., an appetitive competitive motivation). The other half of the dyads did not receive this information. Knowing the other party shares one's goal in the negotiation creates an opportunity for aversive competitors, and it creates a problem for appetitive competitors. Because of their anxiety and relative valuation of equality, aversive competitors may actually benefit from knowing their counterpart shares a relative valuation of equality. Put differently, compared to situations in which aversive competitors do not know their counterpart's goals, having such information may reduce anxiety, increase optimism, and help parties to negotiate deals in which outcomes are distributed equally among participants.

For appetitive competitors, the situation will be different. Their relatively high level of optimism may be undermined once they know their counterpart also seeks relative gain and will not settle for anything less. Once appetitive competitors know each other's goal, their only way out is a fierce battle that results in victory to one or, alternatively, an impasse with no outcome for both parties. Only when appetitive negotiators do not know their counterpart's goals can they operate relatively optimistically and try to creatively design strategies that defeat their counterpart. In short, whereas knowing one's counterpart also is an aversive competitor may help in reaching agreement, knowing one's counterpart also is an appetitive competitor undermines the likelihood of agreement. This is Hypothesis 4.

**Method**

*Design and participants*

The design was a $2 \times 2$ factorial, with motivation (appetitive vs. aversive) and information about the counterpart's motivation (information vs. no information) as independent variables. Participants were 82 students at the University of Amsterdam (27 men, $M = 20.63$ years, who were randomly assigned to dyads. Participants either
received course credit, or were paid (10 Euro). Dyads differed in gender composition and average age, but this did not affect results and is not discussed further.

**Negotiation task**

The task was an adaptation of a task used in previous research (e.g., Pruitt & Lewis, 1975). Pairs of participants took on the role of buyer or seller representatives who had to reach agreement on a company take-over. They had to reach agreement on five issues: Price, transfer date, rent of the building, client take-over, and employee take-over. For price, rent of the building and employee take-over there were seven alternatives on which negotiators could agree. For transfer date and client take-over there were 5 alternatives on which negotiators could agree. Each negotiator received a schedule that gave information about his or her outcomes.

As can be seen in Table 4.1, the task consisted of four integrative issues (transfer date, rent of the building, client take-over, and employee take-over), and one distributive issue (price). By logrolling (giving up on less valuable issues to maximize outcomes on the most valuable issue) negotiators were able to integrate their interests. The maximum individual outcome per negotiator was 1290 points. An integrative agreement (that is, an agreement that maximizes joint outcomes, e.g., €1.6 million for price, 2 months transfer date, rent of the building 1 year, 40% client take-over and 175 personnel take-over) yielded a total of 1620 points, and a simple compromise (the center option for every issue) yielded 1290 points.

**Procedure**

Upon arrival in the laboratory, participants were randomly assigned to roles and were seated in separate cubicles in front of a computer. All instructions were presented to them on the computer screen, with the exception of their profit schedule, which they received on paper so they could consult it during the negotiation. Participants read that they were about to participate in a computer-mediated negotiation, and they could negotiate for maximally 35 minutes. Participants were further instructed that failure to reach agreement would result in zero points. To make sure that participants understood their profit schedule, we gave them a short quiz. After reading their instructions, participants negotiated using a chat program. When they reached an agreement, or when their 35 minutes ran out, they had to write down their score and complete a short post-negotiation questionnaire.

**Manipulation of motivation and information**

We manipulated participants’ motivation as we did in Experiment 4.2. We manipulated the information participants received about their counterpart by informing dyads in the information condition what their counterpart's goal in the negotiation was, following a procedure established in previous research (e.g., Garner & Deutsch, 1974). Participants read that the other party had received the same
instructions as they had, and that their goal was to make sure he or she did not lose, or to make sure he or she won (depending on the condition). Participants in the no information condition did not receive this information.

Table 4.1

*Profit Schedules for the Buyer and Seller (Experiment 4.3)*

<table>
<thead>
<tr>
<th>Buyer</th>
<th>Price</th>
<th>Transfer Date</th>
<th>Rent of Building</th>
<th>Client Take-over</th>
<th>Personnel Take-over</th>
</tr>
</thead>
<tbody>
<tr>
<td>€ 1 million (540)</td>
<td>10 months (120)</td>
<td>1 year (360)</td>
<td>40% (180)</td>
<td>25 (90)</td>
<td></td>
</tr>
<tr>
<td>€ 1.2 million (450)</td>
<td>8 months (90)</td>
<td>2 year (300)</td>
<td>30% (135)</td>
<td>50 (75)</td>
<td></td>
</tr>
<tr>
<td>€ 1.4 million (360)</td>
<td>6 months (60)</td>
<td>3 year (240)</td>
<td>20% (90)</td>
<td>75 (60)</td>
<td></td>
</tr>
<tr>
<td>€ 1.6 million (270)</td>
<td>4 months (30)</td>
<td>4 year (180)</td>
<td>10% (45)</td>
<td>100 (45)</td>
<td></td>
</tr>
<tr>
<td>€ 1.8 million (180)</td>
<td>2 months (00)</td>
<td>5 year (120)</td>
<td>0% (00)</td>
<td>125 (30)</td>
<td></td>
</tr>
<tr>
<td>€ 2 million (90)</td>
<td>6 year (60)</td>
<td>150 (15)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>€ 2.2 million (00)</td>
<td>7 year (00)</td>
<td>175 (00)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Seller</th>
<th>Price</th>
<th>Transfer Date</th>
<th>Rent of Building</th>
<th>Client Take-over</th>
<th>Personnel Take-over</th>
</tr>
</thead>
<tbody>
<tr>
<td>€ 2.2 million (540)</td>
<td>2 months (180)</td>
<td>7 year (90)</td>
<td>0% (120)</td>
<td>175 (360)</td>
<td></td>
</tr>
<tr>
<td>€ 2 million (450)</td>
<td>4 months (135)</td>
<td>6 year (75)</td>
<td>10% (90)</td>
<td>150 (300)</td>
<td></td>
</tr>
<tr>
<td>€ 1.8 million (360)</td>
<td>6 months (90)</td>
<td>5 year (60)</td>
<td>20% (60)</td>
<td>125 (240)</td>
<td></td>
</tr>
<tr>
<td>€ 1.6 million (270)</td>
<td>8 months (45)</td>
<td>4 year (45)</td>
<td>30% (30)</td>
<td>100 (180)</td>
<td></td>
</tr>
<tr>
<td>€ 1.4 million (180)</td>
<td>10 months (00)</td>
<td>3 year (30)</td>
<td>40% (00)</td>
<td>75 (120)</td>
<td></td>
</tr>
<tr>
<td>€ 1.2 million (90)</td>
<td>2 year (15)</td>
<td>50 (60)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>€ 1 million (00)</td>
<td>1 year (00)</td>
<td>25 (00)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Numbers in brackets refer to points earned by the participant.

*Dependent variables*

*Anxiety* and *Optimism* and the manipulation check of motivation were measured as before. The adequacy of the manipulation of information was checked with two items (e.g., "Before the negotiation started, I knew the goal of the other party," 1 = disagree, to 5 = agree; Cronbach's α = .73). *Impasse rate* was assessed as whether or not an agreement was reached and *joint outcomes* was calculated as the sum of the individual outcomes of the two dyad members (range between 0 when a dyad failed to reach agreement and 1620 when the dyad fully exploited integrative potential). We also analyzed the absolute difference between the outcomes of both dyad members (cf.
Thompson, Mannix, & Bazerman, 1988) but because this did not produce any effects, we further ignore this dependent measure.

**Results**

*Manipulation checks*

2 (information vs. no information) x 2 (appetitive vs. aversive motivation) ANOVAs revealed that appetitive dyads reported higher appetitive motivation ($M = 4.00, SD = 0.52$) than aversive dyads ($M = 3.33, SD = 0.72$), $F (1, 37) = 11.66, p < .01, \eta^2 = .24$. In addition, aversive dyads reported a stronger aversive motivation ($M = 3.99, SD = 0.52$) than appetitive dyads ($M = 3.50, SD = 0.58$), $F (1, 37) = 7.67, p < .01, \eta^2 = .17$. No other effects were significant.

A 2 x 2 ANOVA on the manipulation check for information revealed that dyads who received information about the other party’s motivation scored higher on the manipulation check ($M = 3.63, SD = 0.64$) than dyads who did not have this information ($M = 2.01, SD = 0.64$); $F (1, 37) = 67.63, p < .001, \eta^2 = .65$. No other effects were significant.

*Anxiety and Optimism*

A 2 x 2 ANOVA on anxiety revealed that aversive dyads reported more anxiety ($M = 1.71, SD = 0.70$) than appetitive dyads ($M = 1.30, SD = 0.55$; $F (1, 37) = 4.16, p < .05, \eta^2 = .10$). Appetitive dyads reported more optimism ($M = 3.81, SD = 0.68$) than aversive dyads ($M = 3.20, SD = 0.95$; $F (1, 37) = 5.34, p < .05, \eta^2 = .13$). These results are in line with those obtained in Experiment 4.1 and 4.2 and provide new support for Hypothesis 1a –1b.

**Impasse rate**

To test Hypothesis 4 –aversive rather than appetitive dyads impasse more when negotiators are unaware of their counterpart’s motivation, but impasse less when dyad members know their counterpart shares their (aversive) orientation – we conducted a 2 (information vs. no information) x 2 (appetitive vs. aversive motivation) x 2 (impasse vs. agreement) Hierarchical Loglinear Analysis. This revealed the expected interaction, $\chi^2 (1, N = 63) = 11.38, p < .01$. Supporting Hypothesis 4, Table 4.2 shows that when dyad members knew their counterpart shared their motivation, impasse rates were higher for appetitive dyads (60%, $n = 6$), than for aversive dyads (0%, $n = 0$), $\chi^2 (n = 20) = 8.57, p < .05$. When dyad members did not know their counterpart’s motivation, impasse rates were higher for aversive dyads (27%, $n = 3$) than for appetitive dyads (0%), $\chi^2 (n = 21) = 3.18, p < .071.5$

*Joint outcomes*

The above showed differential settlement rates as a function of motivation and information. To examine the quality of these settlements, we conducted a 2 x 2 ANOVA on joint outcomes. This revealed an interaction between information and
motivation, \( F (1, 37) = 19.48, p < .001, \eta^2 = .35 \). Table 4.2 shows that aversive dyads reached lower joint outcomes than appetitive dyads when they did not know the other party's motivation, \( F (1, 37) = 5.12, p < .05, \eta^2 = .12 \). When they knew their counterpart's motivation, aversive dyads reached higher joint outcomes than appetitive dyads, \( F (1, 37) = 15.68, p < .001, \eta^2 = .30 \).

Table 4.2

<table>
<thead>
<tr>
<th>Counterpart Information</th>
<th>Present</th>
<th>Absent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Appetive ( (n = 10) )</td>
<td>Appetive ( (n = 11) )</td>
</tr>
<tr>
<td>1. Impasse Rate</td>
<td>0%</td>
<td>27%</td>
</tr>
<tr>
<td>(89.76)</td>
<td>(189.91)</td>
<td>(226.08)</td>
</tr>
<tr>
<td>2. Joint Outcomes</td>
<td>1392.00</td>
<td>1228.64</td>
</tr>
<tr>
<td>(89.76)</td>
<td>(189.91)</td>
<td>(226.08)</td>
</tr>
</tbody>
</table>

Note. Standard deviations are given in brackets.
Means not sharing the same subscript per row differ at \( p < .05 \).

**Discussion and Introduction to Experiment 4.4**

Experiment 4.3 showed that compared to appetitive competitors, aversive negotiators settled more often when they knew their counterpart shared their aversive orientation, and less often when they were unaware of their counterpart's orientation. Clearly, knowing one's counterpart orientation is an asset to aversive competitors, and a liability to appetitive competitors: Aversive competitors created agreements of high joint value when they knew, rather than not, their counterpart shared their orientation, \( t (37) = 3.15, p < .01 \) and appetitive competitors created agreements of lower joint value when they knew, rather than not, their counterpart shared their orientation, \( t (37) = 2.72, p < .01 \).

That appetitive dyads accepted an agreement more often when they were ignorant about their counterpart's motivation suggests that they were confident and optimistic about "outdoing" their counterpart—otherwise, settling on anything would be unwise. This interpretation is consistent with the finding that appetitive negotiators are more optimistic than aversive negotiators. Unfortunately, however, this idea that information about the counterpart shatters (over-) confidence among
appetitive competitors and reduces distrust among aversive competitors cannot be tested because in Experiment 4.3 relevant measures were not taken. In Experiment 4.4 we measured confidence in achieving high outcomes and trust in the counterpart.

In Experiment 4.4 we also wanted to obtain a new test of the general idea that aversive competitors use information to safeguard their interest whereas appetitive competitors use information to benefit and further their interests. We did so by providing (or not) participants within each dyad with full information about their counterpart's payoff schedule. When full information about payoffs is provided, negotiators can deduce what agreements satisfy or not their goal concerns. Aversive competitors no longer fear falling behind and can even search for high joint gain. Appetitive competitors no longer can be optimistic about outperforming their counterpart, and most likely get stuck in an unsolvable dilemma. In other words, it was expected that compared to appetitive competitors, aversive competitors would have lower trust and confidence, impasse more often, and reach lower joint outcomes when they have incomplete information (i.e., no information about their counterpart's payoff schedule). Under full information, however, the reverse pattern was expected: Compared to appetitive competitors, aversive competitors have higher trust and confidence, impasse less often, and reach higher joint outcomes.7

**Method**

*Design and participants*

We used a 2 x 2 factorial design, with motivation (appetitive competition vs. aversive competition) and preference information (incomplete vs. complete) as independent variables. Participants were 86 students at the University of Amsterdam (35 men, M = 21.45 years), who were randomly assigned to dyads. Participants either received course credit, or were paid (10 Euro). Dyads differed in gender composition and average age, but this had no effects and is not discussed further.

*Task and procedure*

The procedures were identical to those in Experiment 4.3. We used a different task that had otherwise the same structure as the one used in Experiment 4.3—only the issue labels and roles changed: Participants took on the role of union or management representatives who had to reach agreement on five issues: Salary, start date, length of the contract, annual raise, and medical coverage. Also, the manipulation of appetitive and aversive competition was done in the same way as before. Preference information (complete vs. incomplete) was manipulated by giving negotiators in the incomplete information condition their own profit schedule, which they could keep with them during the negotiation. They were not given any information about the other party's preferences, but were told that they could talk about anything they wanted, including their profit schedules. Negotiators in the
complete information condition were provided with the profit schedule of the other party, in addition to their own profit schedule. They were allowed to keep both profit schedules with them during the negotiation, so that they could see the other party's as well as their own payoffs.

Dependent variables

We assessed joint outcomes, the number of impasses, and the manipulation checks for motivation as was done in Experiment 4.3. To check the adequacy of the manipulation of information, we asked two questions ("Before we started negotiating ... I received the other party's profit schedule" and "... I knew the other party's payoffs,") 1 = disagree and 5 = agree, Cronbach's α = .96).

Unrealistic confidence in a favorable agreement was measured before the negotiation started by asking participants to indicate what they believed the agreement would be. For example, we asked the participants to indicate their expected agreement on salary. Participants could choose one out of seven alternatives (1 = 14,000, 2 = 15,000, 3 = 16,000, 4 = 17,000, 5 = 18,000, 6 = 19,000 and 7 = 20,000 Euro). For the management representative, a lower score meant more unrealistic confidence, while for the union representative it was the other way around. Therefore, the management's scores were reverse coded, so that a higher score on this measure meant more unrealistic confidence that the agreement would be in the participant's desired direction. We used this procedure for all issues (salary, start date, duration of contract, annual raise and medical coverage), converted the choices participants made into payoffs, similar to the procedure we used to calculate joint outcomes, and used this as our measure of over-confidence.

Trust was measured using a four-item questionnaire (e.g., "During the decision making task... I trusted the other person;" all 1 = fully disagree and 5 = fully agree). Scores were averaged over the four items (Cronbach’s α = .85).

Results

Manipulation checks

2 x 2 ANOVAs revealed that appetitive dyads reported higher appetitive motivation (M = 3.90, SD = 0.61) than aversive dyads (M = 3.20, SD = 0.92), F (1, 39) = 8.37, p < .01, η² = .18, and that aversive dyads reported a stronger aversive motivation (M = 3.94, SD = 0.53) than appetitive dyads (M = 3.30, SD = 0.55), F (1, 39) = 15.31, p < .001, η² = .28. No other effects were significant. Furthermore, dyads in which the members had complete information scored higher on the manipulation check for information (M = 4.29, SD = 0.37) than dyads in which the members had incomplete information (M = 1.54, SD = 0.33), F (1, 39) = 673.05, p < .001, η² = .95. Again, no other effects were significant.

Impasse rate
We predicted that aversive dyads would less often impasse than appetitive dyads, but only when they had complete information. A 2 (information: incomplete vs. complete) x 2 (motivation: appetitive vs. aversive) x 2 (impasse vs. settlement) Hierarchical Loglinear Analysis revealed the expected significant interaction between information and motivation, \( \chi^2 (1, N = 43) = 6.84, p < .01 \). Table 4.3 shows that when dyads had complete information, impasse rates were higher for appetitive dyads (55\%, n = 6), than for aversive dyads (0\%), \( \chi^2 (n = 23) = 8.86, p < .01 \). When dyads had incomplete information, the difference between appetitive (20\%, n = 2) and aversive dyads (30\%, n = 3) reversed but was not significant, \( \chi^2 (n = 20) < 1, ns \).

Joint outcomes

To explore the quality of the agreements reached, a 2 x 2 ANOVA on the joint outcomes dyads reached was conducted. Because of the impasse rates reported above, we had different numbers of agreements per experimental condition. One way to deal with this is to assign a score of zero to dyads that fail to reach agreement but this produces severe heterogeneity of variance (Pruitt & Lewis, 1975). We therefore decided to assign impasse dyads with the outcome of agreement that yielded the lowest number of points (960 points), following a procedure established in prior research (e.g., Kimmel, Pruitt, Magenau, Konar-Goldband & Carnevale, 1980; Lewis & Fry, 1977).^8

Results revealed the expected interaction between information and motivation, \( F (1, 39) = 15.65, p < .001, \eta^2 = .29 \). Table 4.3 shows that when dyads had complete information, appetitive dyads reached lower joint outcomes than aversive dyads, \( F (1, 39) = 15.63, p < .001, \eta^2 = .29 \). In contrast, when dyads had incomplete information, aversive dyads reached lower joint outcomes than appetitive dyads, \( F (1, 39) = 2.96, p < .05, \eta^2 = .07 \).

Distrust

A 2 x 2 ANOVA on distrust revealed, first of all, that appetitive dyads reported more distrust (\( M = 3.27, SD = 0.24 \)) than aversive dyads (\( M = 3.57, SD = 0.79 \)), \( F (1, 39) = 2.93, p < .05, \eta^2 = .07 \). Second, a main effect of information further showed that when dyads had full information, they reported less distrust (\( M = 3.60, SD = 0.66 \)) than when they had incomplete information (\( M = 3.25, SD = 0.48 \)), \( F (1, 39) = 4.02, p = .05, \eta^2 = .09 \). Both main effects were qualified by the expected interaction between information and motivation, \( F (1, 39) = 4.67, p < .05, \eta^2 = .11 \). Table 4.3 shows that when dyads had complete information, aversive dyads reported less distrust than appetitive dyads, \( F (1, 39) = 8.06, p < .01, \eta^2 = .17 \). However, when dyads had incomplete information, this difference was not significant, \( F (1, 39) < 1, ns \).

Unrealistic confidence in a favorable agreement
A 2 x 2 ANOVA on the sum of the choices participants made showed a significant main effect for information, $F(1, 39) = 10.80, p < .01, \eta^2 = .22$, indicating that dyads in the incomplete information condition were more confident in the amount of points they would receive ($M = 1521.75, SD = 164.78$) than dyads in the complete information condition ($M = 1386.52, SD = 118.64$). Furthermore, a significant interaction effect between motivation and information, $F(1, 39) = 4.35, p < .05, \eta^2 = .10$. Table 4.3 shows that appetitive dyads reported more confidence than aversive dyads, but only in the incomplete information condition, $F(1, 39) = 6.56, p < .05, \eta^2 = .14$. For dyads in the complete information condition, this difference was not significant, $F < 1, ns$.

Test for mediation

We conducted two mediation analyses to analyze whether the effects we found on impasse rate were mediated by trust and unrealistic confidence. The first mediation analysis was concerned with trust. According to Baron and Kenny (1986), mediation is established when four conditions are met. First, the independent variable should influence the dependent variable. This condition was met when the results revealed a significant interaction of motivation and information on impasse rate (see Table 4.3). Second, the independent variable should influence the mediator variable (trust), which it did (see Table 4.3). Third, the mediator variable should have an effect on the dependent variable. This condition was met as well – logistic regression analysis revealed a significant effect of trust on impasse rate, $B = -2.37, p < .05$. Fourth, the effect of the independent variable on the dependent variable should become non-significant when the mediator variable is controlled for. A logistic regression analysis showed this to be the case, $B = 1.09, ns$, and a directional Sobel-test (Kenny, Kashy, & Bolger, 1998) showed that the reduction in regression weight was significant, $z = 1.76, p < .05$. Thus, the interaction between motivation and information on impasse rate was mediated by distrust.

Our second mediation analysis was concerned with unrealistic confidence, which was expected to mediate the interaction between motivation and information on impasse rate. Step 1 of the mediation model showed a significant interaction between motivation and information on impasse rate (see Table 4.3). Step 2 of the mediation model showed that the same interaction influenced unrealistic confidence (see Table 4.3). Step 3 of the mediation model requires that unrealistic confidence influences impasse rate. A logistic regression analysis showed this to be the case, $B = -1.47, p < .05$. Finally, the interaction between motivation and information on impasse rate should become non-significant when unrealistic confidence is controlled for. A logistic regression analysis showed that this was the case indeed, $B = 1.43, ns$, and a directional Sobel-test showed that the reduction in regression weight was significant, $z = 1.82, p < .05$. 


Table 4.3
*Impasse Rate, Joint Outcomes, Trust, and Unrealistic Confidence as a Function of Type of Motivation and Preference Information (Experiment 4.4).*

<table>
<thead>
<tr>
<th>Preference Information</th>
<th>Incomplete</th>
<th>Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Motivation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(n = 10)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Impasse Rate</td>
<td>20%</td>
<td>0%</td>
</tr>
<tr>
<td>2. Joint Outcomes</td>
<td>1389.00,</td>
<td>1146.82,</td>
</tr>
<tr>
<td>(234.86)</td>
<td>1233.00,</td>
<td>1481.25,</td>
</tr>
<tr>
<td>3. Trust</td>
<td>3.29,</td>
<td>3.91,</td>
</tr>
<tr>
<td>(0.29)</td>
<td>0.63</td>
<td>0.79</td>
</tr>
<tr>
<td>4. Unrealistic Confidence</td>
<td>1599.00,</td>
<td>1395.00,</td>
</tr>
<tr>
<td>(164.78)</td>
<td>1444.00,</td>
<td>(99.29)</td>
</tr>
</tbody>
</table>

Note. Standard deviations are given in brackets.
Means not sharing the same subscript per row differ at p < .05.

Taken together, the results show support the idea that under incomplete information, aversive dyads reach more impasses than appetitive dyads whereas they impasse less often under complete information conditions because of lowered distrust and over-confidence under complete rather than incomplete information.

**Discussion**

Our results support the predictions: Negotiators more often reached an agreement and reached higher joint outcomes when they had an aversive rather than appetitive motivation, but only when they had complete payoff information and could derive whether equality was achieved or not. When negotiators had incomplete information, and could not tell their position vis-à-vis their counterpart, aversive competitors more often failed to reach an agreement and reached lower joint outcomes than appetitive competitors. The results revealed this was due to enhanced distrust among aversive competitors and overconfidence among appetitive competitors.
General Discussion and Conclusion

Notwithstanding the prevalence of competitive motivation in day-to-day life, competitive motivation received scant attention in both negotiation and social decision making research, and in theories on interdependent relations, conflict resolution, and the like. The experiments reported in this chapter addressed this void, and additionally highlighted the important distinction between appetitive and aversive competition. Building on work around achievement motivation (e.g., Elliot & Church, 1997) and regulatory focus theory (Higgins, 1998) we argued that compared to aversive competitors, appetitive competitors are less risk-averse, more focused on errors of omission, more optimistic and (over) confident, more likely to blatantly exploit their counterpart, more aversive of impasse and more likely to settle.

The results of four experiments indeed revealed that appetitive competitors were less anxious, more optimistic and were more confident that agreements would satisfy their goals, and they settled more easily. However, it was also revealed that these processes and outcomes were limited to settings in which negotiators were unaware of the fact that their counterpart shared their goals, or when they had incomplete information on payoffs. Whereas aversive competitors were able to use this information about their counterpart's motivation or preferences to build-in safety, to develop trust, and to settle on high quality deals that provided both parties with high and equally distributed outcomes, this information shattered appetitive competitors' confidence and pushed them into an escalatory spiral with an almost guaranteed loose-loose end result. Not only shows this how identical bits of information may have substantially different effects on negotiation depending on negotiator's motivational goals (cf., De Dreu & Carnevale, 2003), it also calls into question the often implicit tendency to value approach motivation and promotion focus over avoidance motivation and prevention focus. That is, the results show that aversive competitors with their avoidance orientation and prevention focus are able to carefully craft high quality agreements that creates and fosters equality more than appetitive competitors with their approach motivation and promotion focus. In the remainder of this section we elaborate upon these results, and their implications. We also discuss some limitations to our conclusions, and highlight possible avenues for future research.

Implications for Theory and Avenues for Future Research

Perhaps the most central contribution of the current research lies in the distinction between aversive and appetitive competition. Not only has competitive motivation been rarely studied in negotiation and other conflict-prone situations, past work has largely ignored the critical distinction between "seeking more than
one's counterpart" (appetitive competition) and "avoiding ending up with less than one's counterpart" (aversive competition). The results reported in this chapter demonstrated the importance of this distinction, in that it influences individual level affect (anxiety, optimism), cognitions (over-confidence) and behavior (tendencies to exploit other's cooperativeness), and group level outcomes such as impasse and high quality, integrative agreements. Apart from the fact that future research needs to more systematically explore the role of competitive motivation, it should do so with a keen eye towards the critical distinction between appetitive and aversive competition.

Much of our theorizing on appetitive versus aversive competition relied on work on achievement motivation (e.g., Elliot & Church, 1997) and regulatory focus theory (e.g., Higgins, 1998). We drew parallels between aversive competition, avoidance motivation and prevention focus on the one hand, and between appetitive competition, approach motivation, and promotion focus on the other. Our findings supported these parallels and as such our findings illuminate whether and how achievement motivation and regulatory foci impact interpersonal processes and outcomes. Our work suggests that prevention focus may reduce risk-tolerance and optimism in negotiators, which may undermine trust, slow down information sharing and ultimately hamper agreement. This is indeed what Galinsky and colleagues (2005) found. Our work adds to this the idea that once prevention focused negotiators feel safe and need not to worry (any longer) about their goal attainment, they may overcome their rather dysfunctional tendencies and even create agreements of high quality and solid collective outcomes.

Our analysis of aversive versus appetitive competition also fit nicely with recent results reported by Darnon, Harackiewicz, Butera, Mugny, and Quiamzade (2007). These authors gave participants performance-avoidance goals – try to avoid performing worse than others do – or performance-approach goals – try to perform better than others do – and then had them discuss a text with a (simulated) partner. The partner either agreed or disagreed with the participant's assessment on a number of occasions. The critical measure was how well participants performed a multiple-choice test on the text. Results showed that performance-approach goals led to better performance than performance-avoidance goals, but only when the partner agreed. When the partner disagreed, performance-approach goals led to the same low level of performance as the performance-avoidance goals. Similar results were obtained in a second experiment, where partner (dis)agreement was replaced by a manipulation of negative vs. no feedback. Darnon et al. (2007) conclude that performance-approach goals facilitate performance but only under conditions of low uncertainty. This maps on nicely with our finding that appetitive competitors perform well (in terms of reaching agreement) but only when they lack information
about their counterpart and thus maintain a high level of optimism and confidence. Once critical information was provided, confidence was reduced and this caused lower performance.

Taken together, our analysis of achievement motivation and regulatory focus theory proved useful to understand aversive versus appetitive competition in negotiation. In addition, our findings share important parallels with work directly invoking regulatory focus theory (Galinsky et al., 2005), and achievement motivation theory (Darnon et al., 2007). Together, these different studies all show the potential of these theoretical perspectives to understand how people negotiate and manage conflict. Systematic research is needed, in part because in the current context regulatory focus and approach/avoidance goals were intimately linked with a competitive outcome-orientation and this needs not to be the case. For example, negotiators may have the pro-social goal of preventing inequality, thereby not exploiting full integrative potential (a pro-social, prevention focused orientation) or, alternatively, they may have the pro-social goal of doing better collectively than an otherwise fair fifty-fifty compromise (a pro-social, promotion focused orientation).

Social motivation has been widely studied in negotiation and related social settings, and it is an important aspect of classic and contemporary models of social decision making such as Interdependence theory (e.g., Kelley & Thibaut, 1979; Rusbult & Van Lange, 1996), Dual Concern Theory (Rubin, Pruitt, & Kim, 1994), and the Motivated Information Processing model of negotiation (De Dreu & Carnevale, 2003). Without exception, however, these models either ignore competitive motivation, or combine it with purely individualistic goals under the broader header of "pro-self" motivation. Recent conceptual analyses have already called into question this practice and the current research indeed showed that competitive motivation can be meaningfully distinguished from individualistic motivation. Furthermore, we argued and showed that a further distinction between appetitive and aversive competition is useful in understanding when and why competitive motivation in negotiation results in negative spirals and impasse or, quite ironically, in fair agreements of high joint value.

One important finding in our research was that aversive and appetitive competitors respond to otherwise identical information quite differently, and as such, our findings resonate with recent work on motivated information processing in negotiation (De Dreu & Carnevale, 2003). According to this model, social motivation drives the kind of information that negotiators search for, and epistemic motivation – the motivation to process information deeply and thoroughly – drives the amount of information processing that takes place. Based on our results, one could argue that aversive competitors more actively search for information, that is, they value strategic information more than appetitive negotiators. However, we do
not know whether and how aversive competitors evaluate the information that comes to the table. In the current set of studies, participants were provided with useful information, that is, with information that is of strategic value. It would be an interesting avenue for future research to investigate whether or not aversive competitors act on all information that comes to the table, whether it is relevant or not. Research has shown that directional motivation – i.e. a desire for confirmatory information can be distinguished from nondirectional information – i.e. a desire for accurate information (Kruglanski & Thompson, 1999). It may be that aversive competitors have a desire for directional information, rather than a desire for a deep and thorough understanding, but future research is needed to conclude this issue.

In the current studies competitive motivation was manipulated through incentives and instructions. This corresponds to widespread practices in, for example, businesses and educational systems (e.g., "grading on the curve;" Pfeffer & Sutton, 2006). However, competitive motivation may be dispositional and rooted in individual differences (Van Lange, 2000). Usually, researchers rely on decomposed-game measures in which participants choose between hypothetical distributions of value between themselves and some unidentified other person. Those individuals who prefer distributions that create relative gain to distributions that create large individual, or joint gain, are classified as competitors (usually around 15% of the research population; Van Lange, 1999). This measure thus capitalizes on appetitive competitors, and has no room for purely aversive competitors. Therefore, it cannot be excluded that the proportion of competitors in society is much larger. More importantly, findings for competitors may become much more informative when measures detecting dispositional tendencies towards competition clearly distinguish between aversive and appetitive competitors.

**Conclusion**

All in all, the current chapter highlighted the important distinction between appetitive and aversive competition in negotiation. Building on achievement motivation and regulatory focus theory, findings revealed that appetitive competitors negotiate with less anxiety and more optimism, have greater confidence in getting a favourable agreement, and are more likely to settle. However, when aversive competitors are provided with a safety net that allows them to reduce uncertainty, they outperform appetitive competitors, and create high quality agreements that create equality among them.
Notes

1This chapter is based on Ten Velden, Beersma, and De Dreu (2007c).

2Competitive motivation is different from individualistic motivation. Competitive individuals try to reach their goals at the expense of other parties; they believe that their goal achievement is negatively related to that of others (Tjosvold, 1998; Van Lange, 1999). In contrast, individualists have no regard for others’ goals, and are merely focused on maximizing their own outcomes. Thus, the important difference between these strategies lies in the emphasis they place on the other party’s outcomes (Van Lange, 1999). Indeed, one of the few studies on competition in negotiation showed individuals with a competitive predisposition to make higher demands and to be less sensitive to the negotiation context (such as cues from their counterpart) than individuals with an individualistic or pro-social predisposition (Olekalns, Smith, & Kibby, 1996).

3 Interestingly, some studies showed that equality is usually more satisfying than both disadvantageous and advantageous inequality (e.g., Messick & Sensit, 1985). However, this is particularly the case in non-businesslike settings, among friends. When an individualistic motivation is induced, as in the present experiment, or when the setting either demands or justifies a selfish approach, past studies found a similar utility function as we observed here (see e.g., Loewenstein et al., 1989; Ordonez et al., 2000).

4 One might expect that aversive participants tend to be satisfied with 0 outcome distributions, where both parties receive equal outcomes, regardless of their own outcome. This was not the case. Aversive participants, as did appetitive participants, indicated that they were less satisfied with a 0-0 distribution (M = 1.23, SD = 0.59), than with a 645-645 distribution, F (1, 61) = 372.72, p < .001, η² = .86. Thus, although theoretically a 0-0 distribution fulfilled aversive participants’ goal (i.e. to make sure they did not gain less outcomes than the other party), results indicate that they tended to be relatively dissatisfied with this outcome distribution.

5 According to Field (2005) and Howell (2002), in Chi-square and Loglinear Analysis, several assumptions have to be met. First of all, there should be no expected counts less than 1. As all our expected frequencies were larger than 1, this assumption was met. Second, to avoid a loss of statistical power, no more than 20% of expected frequencies should be below 5. Unfortunately, in our sample, 50% of the expected frequencies were below 5. Therefore, our marginal significant main effect can be possibly attributed to a loss in statistical power. Furthermore, Field (2005) recommends using the Likelihood ratio in
small samples, which is based on maximum-likelihood theory. Results of this analysis revealed a significant main effect of motivation, Likelihood Ratio = 4.33, $p < .05$, indicating that when dyads did not know each other’s motivation, they impassed more often when they had an aversive (27%, $n = 3$) rather than an appetitive motivation (0%, $n = 0$).

Assigning an outcome of 0 points to dyads that failed to reach an agreement produced similar results and identical conclusions. ANOVA revealed the same interaction between motivation and information, $F (1, 37) = 18.07, p < .001$, $\eta^2 = .33$. A third way to handle impasse data is to exclude dyads that fail to reach an agreement from the analysis altogether. This caused the same interaction to drop to non-significance, $F (1, 28) = 1.70, p = .20$, $\eta^2 = .06$, which can be attributed to a loss in $N$ (for example, only 4 appetitive dyads in the complete information condition could be included in the analysis).

One could argue that the payoff structure used created a situation in which both aversive competitors in a dyad were able to reach their goal of not falling behind, whereas appetitive competitors were unable to both reach their goal of winning from the other. As such, results in the complete information condition in and by themselves are not that interesting. What is interesting and important is the reversal in the incomplete information conditions, showing that lack of information has quite different effects among aversive competitors (i.e., it raises fear and distrust) than among appetitive competitors (i.e., it raises optimism and [over-] confidence). It is these psychological mechanisms that we uncovered by comparing full and incomplete information.

As in Experiment 4.3, assigning an outcome of 0 points to dyads that failed to reach agreement produced similar results and identical conclusions. ANOVA revealed a trend for motivation, $F (1, 39) = 2.97, p < .10$, $\eta^2 = .07$. In addition, ANOVA revealed the same interaction, $F (1, 39) = 9.96, p < .01$, $\eta^2 = .20$. A third way to handle impasse data is to exclude dyads that fail to reach an agreement from the analysis altogether. Although this caused a large loss in $N$ (for example, as 6 out of 11 appetitive dyads in the complete information were excluded from the analysis, only 5 dyads remained in the analysis and likewise, only 7 aversive dyads remained in the analysis in the incomplete information condition), the motivation by preference information interaction remained significant, $F (1, 28) = 9.26, p < .01$, $\eta^2 = .25$. 