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**Reference points
at work: Framing
of performance,
money and time
in communication**

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Abstract

This thesis explores how framing of communication about project progress can influence beliefs about satisfaction, motivation to invest effort, and investment preferences. It further investigates the strength of feelings associated with over- and underperformances relative to reference points, and how contrasting performances with a reference point can influence motivation to overstate what has been achieved. It also compares how describing performances in terms of work, money and time can shape perceptions, feelings and motivations.

Study I explores how framing of project progress in terms of time and work can influence beliefs about whether performance is satisfactory and whether more effort needs to be invested. Work progress can be described in terms of how much is done versus how much remains to be completed. Temporal progress can be described in terms of time spent versus time left. Five experiments with responses from 503 participants (85% students, 15% managers) are reported showing that such frames have predictable implications. Statements by a team leader about *time spent* and *work left* are perceived as suggestions to "hurry up", whereas complementary statements about *work done* and *time left* indicate that the team can take it more easy. The first set of statements further implies that the team is behind schedule, whereas the last two statements suggest that the team is ahead of the plan. In line with this, speakers preferred *work done* and *time left* statements when they were ahead of schedule, but not when they were behind. "Hurry up" and "behind schedule" interpretations were also shown to be dependent upon stage, being more prominent in the final stages than during the initial stages of a project.

Study II explores how framing of project progress can reveal investment intentions in a sunk cost option. 193 participants (65% managers, 35% students) were asked to evaluate progress statements referring to a failing project. Past oriented statements about the amount work done, budget and time spent (75%), were perceived as a preference for the sunk costs option to a larger extent than future-oriented statements describing that 25% of the work, budget and time remained. But when progress was described relative to explicit reference points and qualitative modifiers were added to the numerical progress amounts, this strongly influenced the beliefs about investment intentions. Progress was described as *more than 70% done/spent* or *less than 80% done/spent*, *more than 20%* or *less than 30% remaining*, and *almost 50% done/spent* or *almost 50% remaining*. These different ways of framing performance were interpreted as even stronger arguments in support of the two different investment options, depending

on the perceived amounts of achievements compared with the perceived amounts of remaining resources.

Study III compares the strength of positive and negative feelings associated with over- and underperformances in terms of money, performance time and completion time. Results from a questionnaire answered by 284 top and middle managers in six experimental conditions show that doing better than expected can generate stronger satisfaction than performing below expectations generates dissatisfaction. Managers also feel satisfied about performances that match expectations, and are more surprised by over- than by underperformances. Performance time (in terms of hours, days, or weeks) was judged similarly as monetary performance. However, when temporal performance was described as completion time relative to a milestone or a deadline, deviations became more salient and were expected to produce stronger feelings of satisfaction and dissatisfaction.

Study IV investigates managers' beliefs about goals and misconduct in terms of performance overstatements. 772 top- and mid-level managers predicted if reference points such as performance goals, budgets and plans can make it more likely that individuals and firms will exaggerate what they have achieved. Managers believe that goals can influence individuals to overstate performances, particularly in terms of time spent on a task. When goals are achieved, this is expected to inhibit motivation for overstating performances, for firms as well as individuals. For firms, performance relative to goals is not expected to influence misconduct. Low and high performing firms are believed to be equally prone to misconduct when they underperform relative to goals. When managers judge the likelihood of misconduct, they are influenced by the likelihood of goal achievement as well as the magnitudes of performance overstatement.

The results from Study I and II are discussed in terms of how linguistic reference points and framing of communication can serve productive pragmatic purposes in communication at work. The results from Study III and IV are discussed in terms of how reference points, mental accounting, performance expectations, and performance dimensions (work, money, time) can influence feelings and motivations associated with performance deviations.

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Completing this research has taken place in parallel with my practice as organizational psychologist. Several of the ideas came from interventions and development programs for managers, teams and projects in organizations. The thesis has been financed through my consulting practice, which has produced mixed feelings. Too much consulting work made me feel dissatisfied about research progress, but too much research work made me worried about client relationships and funding.

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Knut Ivar Karevold

December 15, 2011

List of papers

This thesis is based on four Papers referred to in the text by their roman numerals as Study I, Study II, Study III, and Study IV.

The papers are:

- I. Teigen, K. H. & Karevold, K. I. (2005). Looking back versus looking ahead: Framing of time and work at different stages of a project. *Journal of Behavioral Decision Making*, 18, 229-246.
- II. Karevold, K. I. & Teigen, K.H. (2010). Progress framing and sunk costs: How managers' statements about project progress reveal their investment intentions. *Journal of Economic Psychology*, 31, 719-731.
- III. Karevold, K. I. & Teigen, K.H (submitted). More pleased than displeased: Managers' feelings about over- and underperformance. *Second revision, re-submitted to Journal of Economic Psychology*, December 15, 2011.
- IV. Karevold, K. I. (submitted). Misconduct at work: how reference points and framing can increase the likelihood of performance overstatements. *Second revision, re-submitted to Journal of Business Ethics*, April 22, 2012.

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Papers I-IV

1 Introduction

The title of this thesis "Reference Points at Work" highlights two central aspects of the present research: 1) how reference points "work" to influence beliefs, feelings and motivation; and 2) reference points in work contexts.

The subtitle "Framing of performance, money and time" reflects the original research question: *Is time really money?* The first idea was to investigate if time is framed similarly as money, particularly related to progress in projects. Soon work became equally interesting. The logic was simple: organizations invest money and time to get work done; people invest work and time in return for money; organizational performance can be measured in terms of work achievements, money and time. I was interested in exploring if the psychological significance of performances accounted as work, money or time would differ.

The four studies have come about over a period of several years. Throughout the research process, the studies were elaborated as separate ventures. This introduction therefore discusses the theoretical and conceptual aspects that are relevant to all the studies.

1.1 Research questions

In a broad sense the current thesis investigates two main questions:

1. How do reference points in managers' communication of project progress influence listeners' understanding of whether project performance is satisfactory and whether one should invest more resources in a project?
2. How does performance relative to a reference point influence feelings of satisfaction and motivation for overstating accomplishments?

Question 1 is addressed in Study I and II, while question 2 is the focus of Study III and IV. More specifically the research questions explored and discussed in each study are:

- I. How does framing of progress in terms of past-oriented versus future-oriented reference points influence beliefs about whether a project is developing as planned or should be accelerated?
- II. How does framing of progress in terms of past-oriented versus future-oriented reference points suggest whether a manager is promoting further

investments in an existing but failing project, or advocating to invest a new project instead?

- III. Do managers feel as satisfied with performances that exceed a reference point as they feel dissatisfied with underperformances?
- IV. Do managers believe that underperforming relative to a reference point can promote overstating of achievements?

Study I and II explore how reference points in managers' communication can enhance the meaning of a message, while Study III and IV illuminate emotional and motivational effects of contrasting performances with a reference point.

1.2 Illustrations of the research questions

To illustrate the research questions and to provide an overview of what the present studies focus on, the examples below correspond to the four research questions and the four studies of the present thesis.

Study I: Looking back versus looking ahead

What messages are these managers communicating to their teams?

- Manager 1: You have done 50% of the work...
- Manager 2: You have spent 50% of the time...

Will the team members think they are ahead of schedule and can take it easy, or will they assume that their leader is telling them to hurry up and that they are behind the plan?

Study II: Progress framing and sunk costs

- Manager 1: We have done 75% of the work on project A, so...
- Manager 2: We have more than 20% of the budget for project A left, so...

What investment intentions do these managers have in mind? Do they plan to finish project A that they already have spent substantial effort and resources on but that might fail, or would they prefer to invest the remaining resources on a new and more promising project?

Study III: Managers' feelings about over- and underperformance

- Employee 1: Has spent 20% less of the budget than expected
- Employee 2: Has spent 20% more of the budget than expected
- Employee 3: Delivers 2 hours before the deadline
- Employee 4: Delivers 2 hours after the deadline

How will managers feel about the performance of these employees? Will their feelings for over-performance be equally strong as their feelings for underperformance? Will they feel the same for good and poor performances accounted as time as for money?

Study IV: Managers' beliefs about misconduct

Which of these two consultants will feel most tempted to overstate their weekly reports?

- Consultant A: Had a budget of 40 hours per week, had worked 36 hours that week
- Consultant B: Had worked 36 hours that week (but no budget)

Which of these management teams will feel most tempted to overstate their performance?

- Firm A: Had completed 9 projects that year, but had a budget of 10 projects
- Firm B: Had planned to do their best, and completed 9 projects

1.3 Overview of the summary

This summary is further organized in four main sections.

Section 2) *Definitions and classifications* will provide an overview of how central concept such as reference points, framing, work, money and time have been defined and classified in the literature. This section will also discuss theoretical accounts of reference points and framing effects.

Section 3) *Reference points and framing of progress and performance* first presents the theoretical and conceptual foundations for Paper I and II. These papers explore the conversational and pragmatic aspects of reference points in

communication at work. Next, the central theoretical foundations for Study III and IV are presented. This includes a discussion of the value function and its relevance to predicting feelings of satisfaction and motivation for overstating performances.

Section 4) *Summary of the studies* opens with a presentation of methods, participants and data collection common for all of the four studies, followed by brief summaries of empirical findings from Study I-IV.

Section 5) *General discussion* first focuses on Study I and II. The findings from these two papers are compared, and the implications of framed messages in organizational communication are discussed in more depth. It is discussed how it can be productive to frame opinions depending on the pragmatic demands of the communication situation. Next, as is addressed in Paper III, managers' feelings about over- and underperformances are discussed. The last part provides a more in-depth discussion of the results from paper IV related to perspectives on behavioral ethics. The discussion section concludes with reflections on how the performance dimensions work, money and time are framed across the four studies.

2 Definitions and classifications

This section discusses the central concepts relevant for the four present studies: reference point and framing, and the performance dimensions work, money and time.

2.1 Definitions of reference points and framing

Reference points have a long history in psychology and date back to the early habituation and psychophysical studies. Put simply, a reference point is what one has become accustomed to perceiving or expecting. Reference points are adjustable and serve as contrasts that novel stimuli are compared with. Thus, perception and judgment are "reference dependent" (Brown, 1953; Helson, 1964; Kahneman, 2003): what we perceive depends on what we compare it with, and changes in stimulation capture our attention. Social judgments are comparative (Festinger, 1954; Mussweiler, 2003), and calculations of monetary value are influenced by changes in relative wealth rather than absolute wealth (Kahneman & Tversky, 1979; Markowitz, 1952).

Merriam-Webster on-line dictionary defines "reference point" as "an indicator that orients you generally", and suggest several synonyms such as "standards", "benchmarks", "norms", "milestones", "markers" and "anchors". The synonyms indicate that a wide range of variables can serve as explicit or implicit reference points in organizations, ranging from formal goals, plans, budgets and performance standards to subjective or personal expectations or aspirations.

Generally speaking, framing refers to viewing the same situation from different angles. As a visual metaphor, changing the frame adjusts the perspective we have on the stimuli in the situation. The concept of framing can further refer to what perspectives, ideas or beliefs a person has about a domain. A frame can be defined as "an underlying assumption or set of assumptions that supports an interpretation or a concept and that functions as an interpretative frame of reference for thinking about the concept" (Colman, 2011). These can refer to single or multiple dimensions of a domain or situation (Druckman, 2011). Such frames can direct peoples' attention to certain aspects of a situation, option or choice, and potentially influence how incoming stimuli are judged, evaluated and acted upon.

Reference points and framing are closely linked concepts. Reference points allow us to describe the same situation from two different angles, or to be framed in two different ways. The visual analog is the well-known reversible figures where the same figure can be interpreted in two different ways. When one of the figures (for example the light one) is seen as the figure, the other (e.g. dark one) is perceived as the ground. The dark part becomes the reference point that the light one is judged against. People are able to visually perceive only one figure at a time: when people attend to the dark one, it is impossible for them to see the light one at the same time. The same can apply for frames in judgment and decision-making. When people focus on one frame, this requires their full attention and processing capacity in a way that aspects of the opposite frame do not come to mind and are not part of the judgment or choice. Following the visual analogy, framing effects have also been called contrast effects. Framing occurs when one attribute is contrasted or compared with another based on where the reference point is placed or how it is formulated.

In judgment and decision-making, framing typically refers to describing the same amount or attribute in two different, but logically equivalent ways (Keren, 2011). Based on how the reference point is formulated, the same value, option or

attribute can be described from two different angles, making them appear gains/losses or positive/negative. Typical examples are that a cup can be half full or half empty, ham can be 90% fat free or contain 10% fat, an investment can have 50% chance of success or 50% chance of failure, and the same operation can have a 95% survival or a 5% mortality rate. Such statements are logically equivalent. However, when they are perceived as psychologically different, they are called framing effects.

Of central relevance to the present studies is the distinction between *frames of mind*, *framed messages* in communication, and *perceptions of framed messages*. This thesis focuses primarily on message framing and how such frames are interpreted (i.e. and not how frames of mind influence what message is communicated). A core feature of framing is that one aspect or dimension of an option or performance is highlighted, making others less salient or significant.

2.2 Classifications and explanations of reference points and framing effects

Framing effects in decision making were introduced through the famous "Asian disease problem" where risk preferences for a prospect formulated in terms of "lives lost" differed from the same outcome framed in terms of "lives saved" (Tversky and Kahneman, 1981). Framing effects have been observed in a number of other risky decisions as well as in more simple judgment tasks (for reviews, see Keren, 2011; Kühberger, 1998; Levin, Schneider & Gaeth, 1998; Soman, 2004).

A central distinction in framing research is between the bias-perspective and the conversational approach (Keren, 2011). In the bias-perspective, framing has typically been treated as an "irrational" judgment error that violates the axiom of descriptive invariance: preferences and evaluations should not affect how a quantity is described, as long it is referred to the same objective state of affairs (Snelbecker & Roszkowski 1990; Tversky & Kahneman, 1981; Van Buiten & Keren, 2009). Framing is an intuitive "System 1" process (Kahneman, 2003, 2011): automatic, fast and associative.

In contrast, the conversational approach is interested in how framing can enable effective communication and serve pragmatic functions between speakers and listeners. A broader definition of equivalence between framed messages is used; they should have "informational equivalence" and not just "logical equivalence" as

in the bias-approach (Keren, 2011, p. 5; Mandel, 2001; Sher & McKenzie, 2006, 2011). Informational equivalence is to transmit the same “core information”, making it more ambiguous what it means to frame a statement in equivalent ways. Both the bias- and conversational perspectives on framing influence the present studies. Study I and II build upon to the conversational perspective, while Study III and IV illustrate how reference points can skew managers’ feelings and motivations, thus locating these closer to the bias perspective.

In the literature inspired by the bias-perspective, several types of framing effects have been proposed. Levin, Schneider and Gaeth (1998) suggested that there are three types of “valence framing”: attribute framing, risky choice framing and goal framing. Attribute framing involves describing the same item or characteristic in two opposite ways, one clearly negative and the other positive. In risky choice framing people are confronted with two options, one uncertain or risky and the other sure or certain, such as in the Asian disease problem. In goal framing, the framing manipulation involves the positive consequences of attaining the goal versus the negative consequences of not attaining the goal. Soman (2004) differentiates between outcome, structure and task framing. Outcome framing refers to how the outcomes are formulated (gains vs. losses, aggregated vs. disaggregated quantities); structure framing refers to how the framing task is organized (integration or segregation of information, contingent or sequential tasks), while task framing is about the nature of the framing task (choosing or rejecting options, recommending or not recommending an alternative). Study I and II are examples of attribute framing where project progress is stated in opposite and complementary ways, while Study III and IV can be classified as outcome framing or task framing studies.

Several explanations for the effects of reference points on framing effects have been proposed. It is for example discussed if the processes underlying the different forms of framing actually are different, and how several different psychological processes can produce framing effects (Keren, 2011). Although several of the explanations seem to converge towards a similar set of processes, there are nuances and differences that go beyond the scope of the present thesis to discuss in depth.

The dominant and most common explanation is that a reference point splits the range of outcomes in two, and that gains and losses are judged based on the value function (Kahneman & Tversky, 1979). The value function will be further

discussed below in section 3.2. In his review Kühberger (1998) discusses five different theoretical accounts for how reference points can influence framing effects, that differ in terms of non-risk and risky choices (Kahneman & Tversky, 1979), reversal of risk seeking and risk averse preferences for small pay offs (Markowitz, 1952), predictions of risk preferences derived from the probability weighting function leading to increasing risk aversion for increasing gains/probability of payoffs and decreasing risk aversion for increasing absolute payoffs/probability of losses (Hogarth & Einhorn, 1990), and reversal of risk preferences (Shafir, Osherson & Smith, 1993). Kühberger (1998) also discusses four cognitive processing models that suggest how framing can depend on the content, importance and problem domain. This variety of perspectives on reference points and framing effects shows that this is not a unified field of scientific inquiry, and that there are different views on how reference points and the value function influences judgments, feelings and motivations.

Framing can also be influenced by "compatibility" (Brendl, 2001, Fitts & Seeger, 1953; Shafir, 1995), which is that certain stimuli attributes, or mental representations of stimuli, correspond more with certain responses. In the Asian disease problem, the "positive/sure" option is more compatible with the positive "lives saved" outcome, while the "negative/risky" option is more compatible with the negative "lives lost" outcome. Compatibility is assumed to take place early in the perceptual process, and to organize the incoming message and align it with possible interpretations.

Explanations in terms of attention and priming refer to that frames can direct our attention to certain attributes or cues, and stimulate people to be more "perceptually ready" (Bruner, 1957) for inferring the categorical identity of a stimuli. Frames can also influence how accessible positive and negatives associations are in memory (Levin, 1987; Levin, Schneider & Gaeth, 1998). Another explanation is that framing effects can be caused by valence-based encoding of information and cognitive search for confirming evidence (Levin, Schneider & Gaeth, 1998).

Studies have shown that positive and negative frames might be differently processed. Negative frames can induce a negative emotional state associated with a more controlled mode of cognitive processing (Dunegan, 1993). Negative frames have been associated with slower response times (Gonzales, Dana, Koshino & Just, 2005). De Martino, Kumaran, Seymour & Dolan (2006) observed

increased activity in amygdala when people chose the sure-option in a gain frame and gamble-option in loss frame, suggesting that these judgments are influenced by affective cognitive systems. These studies suggest that framing is associated with activation of affective cognitive systems and processes, and that further neuropsychological research can provide insight about the cognitive processes underlying framing effects.

To summarize, framing effects are assumed to take place early in the processing of incoming stimuli, where decision makers a) match characteristics of a frame with the expected response or choice, b) are influenced by what memory associations the frame evokes, and c) judge the valence of a frame based on whether the reference point and value function suggest it is a positive or negative outcome. The conceptual foundations for the performance dimensions work, money and time will be examined in the next section, before reference points and the value function are further discussed in the subsequent section.

2.3 Definitions and classifications of work, money and time

In the present studies progress and performance are described as amounts of work, money or time. In most organizations these are commonly used dimensions to account achievement and to evaluate whether they are satisfactory. The focus is on the psychological significance of how performances are accounted. In this section I will present the conceptual foundations for the three performance dimensions, and compare how they are similar and different to one another. It worth noting that work, money, and time not are included in the Oxford Dictionary of Psychology (Colman, 2011). The definitions below are therefore based on the general Merriam-Webster on-line Dictionary (if not otherwise referred to).

The concept of "work" means to perform an action to achieve an objective (and is defined as "...do or perform something" and "sustained physical or mental effort to overcome obstacles and achieve an objective or result". "Performance" is a closely related concept that is about "the execution of an action".

The concept of "time" is clearly associated with work, as several of the temporal definitions refer to what events or actions that take place relative to a temporal continuum or to a point in time: "the period during which an action, process, or condition exists or continues", "a non-spatial continuum that is measured in terms of events which succeed one another from past to through present to

future”, “the point or period when something occurs”, a “...moment...for something to happen, begin, or end”, a “period” or “duration”, “a rate of speed” and a “moment, hour, day, or “year as indicated by a clock or calendar”, but also “the hours or days required to be occupied by one’s work”.

On the conceptual level, money seems to be unrelated to work and time: it is just a “measure of value or wealth” or “a means for payment” or exchange. However, in organizations money is closely related to work and time. Models of organizational effectiveness suggest how to manage work effort, time and monetary outcomes (Eisenhardt, 1989): people want to spend less time and invest less work than what benefits the organization, so time and effort must be monitored, managed and controlled, and incentivized by money. Thus, money and time are resources that organizations invest or consume to get work done and achieve their goals, or are outcomes that define how well the organization performs. Money and time are scarce resources that organizations spend or invest. In some cases they can be exchanged; organizations pay more to save time or invest time to save money. Time is an equally distributed resource, but money is not equally available to all. Time is less liquid and fungible than money; it cannot be stored or inventoried for later use. However, organizational rhetorics about money and time are similar: investing, saving, spending, wasting, consuming, or losing. Individuals spend time at work and are rewarded with money, and some wealthy people choose not to spend time at work because they do not need the money. For some professions time at work is synonymous with monetary outcomes. In projects, money and time is invested to promote work progress, and work progress can be directly associated with monetary and time investments.

The way the definitions of time refer to the activities that take place as time passes, suggest how humans have attempted to objectify the abstract concept of “time” by linking it to what can be observed or done while it passes. Temporal classification models (see for example Anacona, Okhuysen & Perlow, 2001; Bluedorn, 2002; McGrath and Tschan, 2004) also focus on time in relation with organizational activity. In “subjective” time (Bluedorn, 2002; Slife, 1993) activity and psychological experience are intimately associated. Also called event time, epochal time (Bluedorn, 2002) or social time (Bluedorn & Denhardt, 1988), this kind of time is a social construction shared by organizational members; the event or behavior itself defines its temporal location and significance, such as “lunch

time" or "banana time" (Roy, 1960). In contrast, the conception of "objective" time (Bluedorn, 2002) defines time and work as two independent dimensions. This kind of time flows forward at a uniform rate at all times and in all places independent of events, objects and observers. Also called clock time, fungible time or Newtonian time, this kind of time can be divided into similar and objectively quantifiable and measurable units.

Most organizational research is influenced by the objective time paradigm. Performance, efficiency and effectiveness are concepts associated with this temporal perspective; effective organizations do not waste time and organizational effectiveness can be measured by how well time is spent and how quickly tasks are completed. Projects are organizational tasks where the objective aspects of time are salient; they are typically scheduled to last specific amounts of time, amounts or hours the project task will required are calculated and budgeted, and performance is measured as amounts of time spent relative to the amounts planned. Some organizations even account "work progress" as the number of hours spent. Thus, there are apparently quite a high number of different ways work and time can be associated (see e.g Anacona, Okhuysen & Perlow, 2001; McGrath & Tschan, 2004).

The progress formulations and performance statements in the present studies are clearly influenced by the objective time paradigm; project progress is formulated as amounts of work completed or time spent relative to the starting points and completion points; temporal performances are described as amounts of additional or less work completed relative to the reference point, or as amounts of time saved or lost in completion of tasks, or as task completion times relative to temporal milestones. These definitions progress and performance in the present studies correspond to three of the fourteen (14!) possible relations between time and action suggested by McGrath and Tschan (2004): frequency, duration and temporal location. Frequency refers to the number of times an event takes place within a unit of time; increasing frequency will logically lead to higher task progress. Duration refers to the amount of time (hours, days, weeks, months or years) between onset and completion of an event; reducing frequency of a task will logically increase duration as less work gets done per unit of time. When time working on a task is accounted for as duration (hours, days, etc), these amounts can translate to monetary values as each unit of time can be given a price or a

cost. Completion time is an example of the concept of temporal location, and refers to when a task is completed relative to milestones or deadlines.

Thus, to summarize, the performance dimensions work, money and time have several common features, but are also distinctly different from one another. All three are resources that organizations invest or spend, and can be accounted as outputs that indicate organizational efficiency. The purpose of the present research has been to investigate if the psychological significance of performances can vary dependent on which performance dimension they are accounted in. The purpose of the discussion above was to point to underlying similarities and differences in the concepts of work, money and time that might impact such judgments. This question will be further discussed in the last section of this summary (see 5.3 Conclusions). In the next sections the focus is on how framing of performance information can be of central importance to how achievements are judged.

3 Reference points and framing of progress and performance

3.1 Reference points and framing of project progress

Study I and II investigate how differently framed project progress statements can communicate different perspectives on project performance. This linguistic and pragmatic perspective on framing focuses on the interaction between speakers and listeners (Grice, 1975). Reference points and framed messages can be an effective way to communicate a perspective or belief (Clark & Schober, 1992; McCann & Higgins, 1992). In natural language reference points can be embedded in the way a message is formulated (Keren, 2011). When a speaker chooses a particular reference point or frame this can accentuate his perceptions or beliefs, which enables the listener to infer the intended meaning of the message. Information about a speaker's intentions can thus indirectly "leak" through how the reference point is stated or how the message is framed (McKenzie & Nelson, 2003; Sher & McKenzie, 2006).

Thus, reference points and frames can serve productive communicative and pragmatic functions, and enable effective exchanges between speakers and listeners. This perspective emphasizes informational equivalence in framed messages; they do not need to be stringently logically equivalent (Keren, 2011). Even logically equivalent frames can communicate implicit information about different reference points: a statement about a half full glass may point to that it

is far from empty; saying that it is half empty glass might suggest that it is far from full. Half full glasses can seem more attractive than half empty ones, perhaps because the first perspective indicates a positive trend towards complete fullness.

Attribute framing has typically been observed on clearly positive and negative dimensions: it is better to win than to lose, successful stocks are more attractive than unsuccessful ones and people prefer operations described as survival rates rather than death rates. Study I investigated how seemingly neutral progress statements can carry information about speakers' feelings and suggestions. The statements framed progress relative to the start of the project and accentuated the amounts of time spent or work done, or accentuated how much was left until the project was finished. Switching the reference point framed the amounts of project progress in two complementary ways: 40% of the time can be spent or 60% is left: work progress can be 60% complete or 40% remaining to be done. Such progress statements can influence listeners' assumptions by pointing to lower or higher reference points and linguistically suggesting that the amounts of progress are substantial or insignificant. Statements about how much work is done refer to a lower reference point, perhaps suggesting that amounts of progress are higher than expected. Statements about time spent also refer to a lower reference point, but perhaps suggest that more than expected has been spent, implying that progress is worse than anticipated. Thus, switching the reference point in project progress statements from work done to time spent might influence listeners to frame the meaning of a message differently.

Study I focuses on the implicit meanings of quantitative progress statements, and how opposite frames can communicate different satisfaction with project progress and expectations about future efforts. Study II investigates how qualitative modifiers can intensify the meaning embedded in quantitative progress statements, and what investment intentions the speakers can have in mind. This study addresses how people infer meaning from how quantities are formulated. Previous studies have shown that qualitative quantifiers can serve pragmatic functions and influence what aspects of a situation the listener attends to and how it is judged (Moxey, 2011), even if no quantities are explicitly mentioned. Verbal statements of probabilities can be framed by selecting a positive or a negative verbal phrase. "A few" can be interpreted positively, but "few" can be perceived negatively, even if both statements implicitly can refer to just about the

same amount (Moxey & Sanford, 1993). Moxey and Sanford distinguish between "the reference set" which is explicitly mentioned in a statement and the "complement set" which is not explicitly mentioned. Positive quantifiers point listeners' attention to what is satisfactory and can be interpreted as recommendations for a particular option or course of action (e.g. "a few have been pleased with this outcome..."), while negative ones can communicate the opposite meaning (e.g. "few have been pleased with this outcome..."). Moxey (2011) suggests that positive and negative quantifiers can have the same effect as positive and negative verbs - such as "save vs. die" in the Asian disease problem.

Study II further investigated how qualitative modifiers that refer to progress intervals can influence listeners' assumptions about the significance of the amounts spent or remaining. Teigen (2008) distinguishes between point estimates (about X%), range estimates (between X% and Y%), and one-sided uncertainty intervals (more than X" or "less than Y"). "More than" and "less than" are linguistic modifiers that leak information and suggest that the performance amount should be contrasted to the reference values. "More than 70%" is clearly positive, whereas "less than 80%" indicates a shortfall. "More than 20%" can sound more significant than "less than 30%" depending of the valence of the dimension the values refer to. This kind of progress statements are not logically equivalent, but can be considered to be similar information wise. The first phrase could in principle mean any percentage from 70 to 100, and the second any percentage from 0 to 80. However, people typically think that both these expressions refer to values in the 70-80% interval, so they could in practice be regarded as two ways of expressing the same range of magnitudes. Study II compares how point estimates of progress are interpreted relative to such range estimates.

In summary, the linguistic reference points that are explored in Study I and II refer to the amounts of project progress that has been achieved, or to the amounts that remain. The framing manipulation involves comparing the significance of the amounts that have been completed or consumed, versus the magnitudes that remain. The valence of the performance needs to be inferred based on the implicit value of the reference point. The performances are not clearly below or above an explicit reference point such as a goal or a plan. However, this is the focus of Study III and IV, where the affective and

motivational effects of contrasting a performance with an explicit reference point are explored, which I now turn to.

3.2 References points and framing of performance

Theoretically Study III and IV are inspired by the value function of prospect theory (Kahneman & Tversky, 1979) and the principles of mental accounting (to be further discussed in the next section)(Thaler, 1985). The original idea was that over- and underperformances can be accounted as gains and losses, and that the associated feelings and motivations would follow the logic of the value function.

As discussed above, the dominant explanation for framing effects is that reference points split the range of outcomes in two, and that gains and losses are evaluated based on the principles of the value function. The value function and mental accounting are closely associated concepts. Kahneman & Tversky (1979) suggested that in decision processes reference points first split the range of outcomes into gains and losses, which then based on mental accounting are integrated or segregated to maximize hedonic utility. After this primary editing, prospects are evaluated based on the value and weighting functions. Based on a similar logic, Thaler (1985) suggested that the valuation of a mental account follows the value function, and that gains and losses are processed differently to maximize hedonic value and experienced pleasure. People will tend to segregate multiple gains, but to integrate multiple losses. Smaller losses are integrated in greater gains, while smaller gains tend to be segregated from greater losses.

Prospect theory was originally a descriptive (Hardman, 2009; Hastie & Dawes, 2010) model for decision-making in certain situations. Kahneman & Tversky (1992) later developed cumulative prospect theory, a modified version to explain decision-making under uncertainty. It is further distinguished between three types of utilities (Kahneman & Snell, 1990; Kahneman, Wakker & Sarin, 1997): decision utilities (the value of outcomes), experienced utilities (the hedonic experience associated with an outcome), and predicted utilities (the predicted experience or valuation of an outcome).

The value function is S-shaped, steeper below the reference point than above it, concave for gains and convex for losses (see Figure 1).

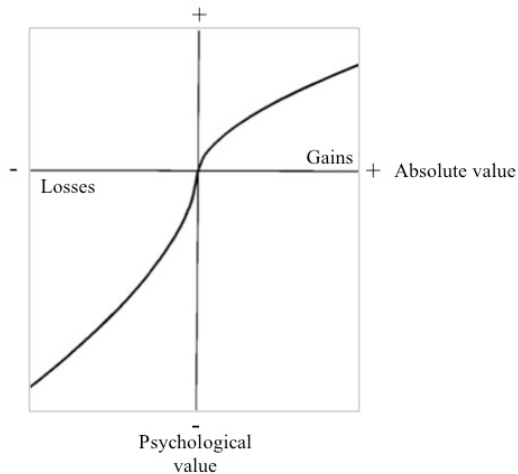


Figure 1. The value function of prospect theory (Kahneman, 2011)

If managers' feelings about over- and underperformance follow the principles of the value function in prospect theory (Kahneman & Tversky, 1979), one would expect managers to be more displeased by underperformances than they will be pleased by over-performances. Due to the s-shaped form of the value function, which makes it steeper just below the reference point than above, similar amounts of over- and underperformance will be asymmetrically evaluated, with losses having greater impacts than gains. It has been claimed that losses typically are weighted approximately twice as strongly as gains (Kahneman, Knetsch, & Thaler, 1990; Tversky & Kahneman, 1991, 1992). The feelings associated with gains and losses are supposed to follow the same pattern: "the aggravation that one experiences in losing a sum of money appears to be greater than the pleasure with gaining the same amount" (Kahneman & Tversky, 1979, p. 279).

Further, in terms of managers' beliefs about motivation for overstating performances, several predictions can be derived from the value function. Similar performances will be differently evaluated depending on what reference values they are compared with. Introducing a reference point can make a performance seem positive or negative depending the value of the reference point. Given the stronger weighting of losses versus gains, it should more tempting to exaggerate below the reference point than above. Due to loss aversion, those who underperform relative to their reference point will feel more motivated to invest

effort, but perhaps also more motivated to exaggerate what they have achieved. The S-shape of the value function implies diminishing sensitivity to changes in value further from the reference point, so that it will be more tempting to exaggerate performances close to the goal. In this section of the value function, one added performance amount is associated with relatively stronger increases in psychological value. Losses are associated with risk seeking, and performing below the reference point might thus increase the willingness to choose the risky option of cheating to enhance performance outputs.

Mental accounting shows that similar amounts or values can be psychologically different based on which account they are judged within. This means that performances will be judged not only relative to a reference point, but also based on how they turn out relative to the scope and magnitude of the mental account they belong to. In the next section the relevance of mental accounting of work, money and temporal performances will be further discussed.

3.3 Mental accounting of performance

Originally, mental accounting referred to how people "record, summarize and analyze their expenses and consumption with the objective of making a decision" (Thaler, 1999, p. 184). Recently, the principles of mental accounting have been extended to other dimensions as well (Soman & Ahn, 2011). People can be triggered to define mental accounts when they decide to pursue a particular consumption opportunity, or when they plan how to allocate their financial resources. Mental accounting has been seen as an irrational bias by some researchers, as people might make suboptimal decisions depending on how they account for incomes and expenditures (Heath & Soll, 1996; McGraw, Tetlock & Kristel, 2003; Soman & Ahn, 2011). Mental accounting can also be defined as a kind of framing, as similar amounts of money are perceived to be psychologically different based on which account they belong to.

The scope and temporal horizons of mental accounts refer to how broad the categories of incomes and expenses in an account are, and for how short or long time-horizons expenses are cut off. Some expenses are logically accounted for on a daily or weekly basis (e.g. coffee and snacks) while others are psychologically monitored on a monthly (e.g. rent, utility bills) or yearly basis (e.g. insurance, memberships), based on frequency of consumption as well as payment schedules (Gourville, 1999). How frequently people "cut off" their mental accounts can also influence how much time they choose to invest at work. Camerer, Babcock, and

Loewenstein (1997) suggest that inexperienced taxi drivers in New York mentally define a daily income target and stop working when this goal is achieved, rather than defining an extended temporal account and adapt their work investments based on what is most time-efficient and profitable over a longer period of time. In Study III and IV performance accounts with different scope (work, money, and time) and temporal horizons (short term: days and weeks versus longer term months and years) are compared. Two main categories of performance deviations are investigated in both studies: small and less significant ones that individuals typically are accountable for during the course of a day or week at work; and greater and more significant ones that management teams and firms are accountable for and that accumulate during the course of a year.

A central question is whether performance deviations are judged relative to the total value of an account or in absolute terms. If they are judged in proportional terms, smaller and greater accounts can be compared based on the relative amount of deviation. For example, spending 40,000 of a 50,000 budget will be judged just as positively as spending 8 million of a 10 million budget, as both cases involve saving about 20% of the total account. But if deviations are judged in absolute terms, the nominally greater saving of 2 million will seem more significant than saving 10,000. In one of the original mental accounting studies (Tversky & Kahneman, 1981) it was found that peoples' choices were most strongly influenced by the proportional amount they could save: more respondents (68%) found it attractive to drive 20 minutes to save \$5 off a calculator that cost \$15, while fewer respondents (29%) were willing to drive 20 minutes to save \$5 off a calculator that cost \$120. Related to the present studies, it is expected that the amounts of deviation will be judged like this in terms of their proportional value. The feelings associated with less significant amounts of over-and underperformance will be similar to more significant ones, as long as they are proportionally similar. The motivation to overstate smaller performances will be similar to greater ones, as long as the relative amount of deviation is similar. This reasoning also implies that managers' accounting of work, money, and time performance deviances will be similar as long as the deviations are proportionally comparable. Thus, spending 20% more or less time will probably be perceived as comparable with spending 20% more or less money, or doing 20% more or less work.

Thaler (1985) suggested that people intuitively integrate or segregate gains and losses to maximize their hedonic value. This implies that managers might segregate over-performances, but integrate underperformances in the total account to enhance the positive valence of over-achievements. But segregation of performance deviations might also be influenced by what dimension they are accounted in. For example, temporal performance can be measured as performance time or completion time (Halkjelsvik & Jørgensen, 2011). Completion time refers to when tasks are finished relative to temporal milestones or deadlines. Accounted this way, over-performance is to deliver before the temporal reference point, and underperformance is to be delayed. Subsequently, accounting for performance as completion time might make the amounts of over- and underperformance more salient: the amount of time after the temporal reference point is clearly an explicit loss, while the time saved before is clearly a gain. Thus, stating performances relative to a temporal milestone might promote segregation of the over- and underperformance relative to the total account. The emotional intensity of over-performances can therefore be stronger for completion time than performance time.

To summarize, the first part of the summary has discussed the conceptual foundation for how reference points, framing and mental accounting can influence beliefs, feelings and motivation. In the next section the results from the individual studies will be briefly presented, and issues related to the research methodology discussed in depth.

4 Summary of the studies

4.1 Methods, participants and data collection

Research design, participants and methods for data collection are thoroughly presented in each of the individual Papers. Thus, in this section the methods are just briefly presented, while emphasis is put on the discussion of issues related to the research methodology.

The present studies investigate beliefs based on responses to short vignettes about situations at work. The responses were in all studies expectations or predictions about how others will react, feel or act in hypothetical situations. According to Baron (2007), this is one of the most common and frequently used methods in decision research. This method allowed us to isolate the effects of framed communication, and the impact of different performance levels and

performance dimensions. The hypothetical vignettes allowed exploration of aspects of communication and judgments that are typically difficult to systematically observe in natural work situations. Based on knowledge about the firms and participants, the vignettes were designed to correspond to situations the participants would have experience with or situations that they intuitively could imagine.

In all conditions of Study I-IV the participants were randomly allocated to one of the experimental conditions, to prevent that characteristics of the participants would systematically skew the responses. Many of the experiments and sub-studies within each main Study were designed as between group comparisons.

The majority of participants in Study II, III and IV were experienced top-level and mid-level managers, recruited from a broad range of different organizations, and with personal experience and knowledge of the questions and domains of the studies. In Study I and II the student participants judged the vignettes similarly as the managers, suggesting that the studies explored ways of framing progress that might not only be relevant to business projects, but other tasks as well. A majority of the managers in the four studies were male and between 40-50 years old, and had several years of experience with being managers. They are therefore representative of the typical population of managers in many organizations, but the responses might not be typical for younger managers or female managers. The respondents were recruited from different industries, such as oil- and gas, telecom, energy, food, pharmaceuticals, public transportation and law, which reduces the probability that we observed effects are due to industry specific business cultures or beliefs. Most of the firms were Norwegian firms with international subsidiaries or the Norwegian subsidiaries of international firms with a Western business culture. Since most of the respondents were Norwegian managers and the surveys were designed by researchers based in Norway, we assume that the results are typical of this group of managers' beliefs, but perhaps not for how managers with a different cultural background might judge and communicate about performance. In Study I and II the majority managers were mid-level ones, while in Study III and IV most were top-level ones. Analysis of the responses from the different sub-groups of respondents indicate no systematic differences or interactions, indicating that the respondents' experience and role have not skewed the results in a particular direction.

In Study I and II and parts of Study IV the responses were collected during breaks in workshops and lectures, and in Study III and most of Study IV through a web based survey program. Survey completion during workshop or lecture breaks might reduce data quality due to time pressure, noise, being disturbed or influenced by other participants. However, the benefit of this approach is the high response rate; typically over 90%. Completing the questionnaire individually on a computer screen can increase focus and concentration, but in most conditions led to greater variations in response rates, from 40% to 90%. The response rates for the individual firms that participated were substantially higher than for the ones recruited through their industry organizations, suggesting that firm commitment and being invited by a manager whom you personally know can influence motivation to respond. We have no information about the beliefs of the managers who did not respond. However, the response rates were equally high across all conditions that were compared, indicating that the observed effects were not influenced by such differences.

When designing the conditions and vignettes substantial effort was put into ensuring that the different versions were logically and "information wise" comparable. In Study I "having spent 30%" of the time is clearly the same as "having 70% of the time left", and "having done 70% of the work" is the same as "having 30% left to do". In Study II the progress statements were logically comparable as "more than 70%" done or spent refers to the same range of amounts as "less than 30%" remaining. In Study III the focus was to make the amounts of money and performance time and completion time seem similar, as well as the amounts of over- and underperformance. Here a couple of minor inconsistencies are worth noting, even if they are not assumed to reduce the validity of the results of the study. In Vignette 1 where a total budget is not mentioned, it can be questioned if a NOK 3000 monetary deviation is comparable with a two-hour temporal deviation. In the other vignettes, the performance amounts were defined as absolute amounts relative to the total budget, as absolute amounts and percentages in combination and as percentages alone, to prevent that the presentation format influenced the results in a systematic way. In terms of making the amounts of over- and underperformance similar, the absolute values are similar in both sets of vignettes.

The present studies based on responses to hypothetical vignettes illuminate managers' beliefs about how people at work will interpret progress and

performance information. The manipulations of vignette design made it possible to isolate the effects of varying performance amounts and performance dimensions. However, the results do not tell us how much this influences managers' total evaluation of their subordinates (Study III), and how this information is weighted relative to other aspects of the subordinates role, behavior, the relationships at work and organizational climate and culture. The same applies to the predictions of unethical behavior (Study IV), where other aspects of the decision context can influence the motivational effects of underperforming relative to the reference point. Studies of performance evaluations and behavioral ethics show that several factors in addition to the actual performances influence how this information is judged.

A potential weakness in the data collection approach is that only one method (surveys) was used. It would have been an advantage to use additional methods to identify how messages and performances are framed. To gain a more differentiated understanding of the present research questions, experiments allowing observations of actual decision behaviors could have been beneficial. Adding information about actual evaluations based on observations, interviews or archival data could provide additional insight about how framed communications are judged and into the feelings and motivations associated with performance deviations.

Study I-IV have in common that the vignettes are designed so that the respondents imagine themselves in the role of observers that are asked to predict how others will react or feel. The studies therefore illuminate managers' beliefs about "others at work". This might reduce the social desirability effects motivated by promoting a positive self-image or a positive image of their own organization. Research on organizational behavior (see e.g. Argyris, 1999) has shown that people hold more optimistic or positive beliefs about themselves than others, but also that people more accurately can observe others' behaviors and the effects of others' than their own. Research on behavioral ethics has shown that people tend to overrate their own honesty, and that they can be poor at predicting whether they personally will cheat or act dishonestly (Tenbrunsel & Messick, 2004). The effects of social desirability and the motives for promoting a positive self image might therefore be different for the Study IV relative to the others, and perhaps also for Study III relative to Study I and II. In Study II we found that the respondents' personal preferences differed significantly from those

attributed to the communicators. Asking about judgments of others might have reduced the effects of self-justification or self-presentation needs of the respondents.

In the next four sections the results from Study I, II, III and IV are briefly presented.

4.2 Summary of Paper I. Looking back versus looking ahead: Framing of time and work at different stages of a project

Project progress can be framed in two complementary ways, by referring to the past and how much time has been spent or how much work is done, or by referring to the future and how much work and time that remains. Logically, when 90% is done, 10% remains; when 25% time is spent, 75% is left. "Looking back" refers to frames that highlight past expenditures or achievements, while "looking ahead" points to what remains to be spent or done. How will managers' statements of progress influence how team members interpret the implied meaning of the message? We defined five sets of oppositely framed progress statements in terms of percentages of time and work (10/90, 25/75, 50/50, 75/25, and 90/10), and asked what meanings were embedded in terms of satisfaction with project progress and motivation for intensifying work effort. The results showed that past oriented temporal statements about time spent implied that a project is behind schedule and that the team needs to hurry up, while future oriented statements suggested that the project is ahead of schedule and that the team can relax a bit. Work progress statements were interpreted to have the opposite meaning. Here past oriented statements about work done implied that the project is ahead of schedule and that the team can relax, while future oriented ones about remaining work suggested that the project is behind schedule and that the team needs to intensify their efforts. In line with this, speakers preferred work done and time left statements when they were ahead of schedule, but not when they were behind. The listeners' interpretations depended on project stage, and "hurry up" and "behind schedule" interpretations were also shown to be dependent upon project stage, and were more prominent in the final stages than the initial stages of a project.

4.3 Summary of Paper II. Progress framing and sunk costs: How managers' statements about project progress reveal their investment intentions

Can managers' framing of project progress communicate investment preferences? Perhaps past oriented managers want to continue with the sunk-cost option, while future oriented ones are interested in new projects instead?

Study II investigated how reference points in managers' communication during a decision process could influence the listeners' attributions about what options the managers preferred. The results showed that this depended on whether the amounts already invested seemed considerable relative to the amounts remaining. Past oriented statements about the amounts of work done and amounts of money and time spent as "about 75%" suggested continued investments, while future oriented ones stating that "about 25%" remained implied preferences for a new venture. Framing progress as "more than 70%" suggested that the sunk-cost option was most attractive, but performances that were "less than 80%" indicated preference for a new project. In terms of future oriented frames, stating that "less than 30%" remains suggest that one is close to finishing and should continue working on the project, but if "more than 20%" is left this can be a substantial amount that could be invested the new and more promising venture instead. If a project team has done or spent "almost 50%", this suggests that progress is substantial and that one should complete the project. But if "almost 50%" remains this implies a preference for switching to the new option instead, implying that this is quite a significant amount as well. Managers who talked about "work done" were assumed to feel more satisfied than those who talked about "work left". The respondents' personal preferences differed from the ones attributed to the managers, and a majority predicted they personally would not be tempted to continue investing in a failing project.

4.4 Summary of Paper III. More pleased than displeased: Managers' judgments of over- and underperformance

Imagine a manager who judges the performance of two employees: employee A has done 20% better than expected, employee B 20% worse. Will the manager feel as happy with employee A as he feels unhappy with employee B? Does it matter if the employees' performance is described as time or money; is spending 20% less time just as satisfactory as spending 20% less money?

This study showed that the strength of positive and negative feelings associated with over- and underperformances in appear to be different. Doing better than expected is believed to generate stronger satisfaction than performing below expectations generates dissatisfaction. This was the case for minor levels of over- and underperformance that can happen during a day or week at work involving relatively insignificant amounts of money and time, as well as for more substantial performance deviations conducted by management teams and firms, involving considerable monetary deviations and time differences in terms of thousands of hours or months. Temporal performance defined as time on task (in hours, days, or weeks) was judged similarly as monetary performance. However, when temporal performance was described as completion time relative to a milestone or a deadline, deviations became more salient and were expected to produce stronger feelings of satisfaction and dissatisfaction. Performances that meet expectations and match the reference point are predicted to generate positive feelings. Managers are more surprised by over- than by underperformances.

4.5 Summary of Paper IV. Managers' beliefs about misconduct: can goals motivate unethical behavior?

Can contrasting performances with goals increase temptation for overstating what is achieved? Do managers believe that low performers are more likely to exaggerate than high performers? Is it more tempting to exaggerate close to the goal than when further from achieving it?

On the individual level, Study IV showed that performance goals can enhance the temptation to exaggerate performances, particularly for amounts of time spent. When goals are achieved, motivation for overstatements was projected to diminish. On the organization level, firms with goals were expected to be more likely to overstate how many projects they had completed, how many consulting hours they had sold during a year, or to claim that projects were completed faster than what was the case. Firms that achieved their goals were supposedly less inclined to exaggerate. In the between-groups studies these results not clearly supported, and in two of the studies there were no differences between the firms with and without goals. The absolute level of firm performance (i.e. low versus high performing firms) was not predicted to influence likelihood of misconduct, as suggested by some theories of firm misconduct. This is consistent with the principles of the value functions, where gains and losses are judged relative to

subjective reference points and not by their absolute magnitudes. The managers' beliefs were also consistent with some firm level mechanisms that can enhance performance expectations and increase risks for misconduct, such as escalating ambitions, over-confidence and over-investing in goal achievement.

5 General discussion

The discussion of the present studies is organized in three main sections: 1) discussion of implications from Study I and II focused on how framing of communication can serve productive pragmatic functions in communication at work, 2) discussion of the affective and motivational implications of performance deviations based on Study III and IV, and 3) concluding comments about the implications of present studies for judgments of performances as work, money and time.

5.1 Reference points and framing of project progress

Study I and II were designed based on the assumption that reference points can be embedded in language and influence listeners' framing of a message. The studies suggest that framed communications effectively can inform listeners' of a speakers' views or intentions. Interpreting logically similar frames in different ways is therefore not a bias, but something that enables effective exchange of information and can serve productive pragmatic functions. Study I showed that speakers and listeners interpret the embedded meaning of framed progress similarly. This Study also showed that seemingly neutral progress statements can contain implicit frames about the speaker's satisfaction and views about how to precede with the task, whereas Study II showed that qualitative modifiers added to the quantitative progress amounts can influence the listeners' perceptions more than the quantities alone.

The pragmatic function of the reference points in the present studies is to serve as provisional reference points that accentuate the amounts of progress achieved or remaining. Linguistically the statements indicate a contrast between an explicit quantity and an implied reference point. Focus on the positive pole of the work dimension (work done) implies a downward comparison, whereas focus on the negative pole (work left) reflects an upward comparison. If a manager speaks about how much is done, the reference point highlights the amount between project initiation and present progress, making this seem substantial so there is reason to feel satisfied with what is achieved. In contrast, saying that "x of the

time is spent” can suggest that more time than expected is spent, making it natural to complete the sentence with a request to hurry up. If a manager talks about the time spent and work remaining, it is compatible to assume that he is concerned with about the project meeting its goals. Also, if a manager communicates that the significant amounts have been invested in a project, it is more compatible to assume he is concerned about the outcome of that investment, rather than showing interest in investing in a in a different project. There is therefore nothing unreasonable or irrational about responding differently to different frames. These framing effects are consistent with McKenzie and Nelson’s (2003) information leakage hypothesis, suggesting that logically equivalent frames may imply different reference values and convey different messages.

Study I suggests that work and time frames can have opposite valence when they refer to the past versus the future. Looking back, it is positive to have done work, but more negative to have spent time. Looking ahead, it is positive to have more time left, but more negative to have work remaining to be done.

This thesis investigates how framed messages referring to one single dimension (work, money or time) are interpreted. A central question that is not addressed is how messages that combine or frame two or more dimensions might be interpreted. This has been denoted “emphasis framing” (Druckman, 2011), and is presumably very important for understanding communication in situations that involve comparisons or trade-offs between several different perspectives. In projects it is for example common to discuss whether it worth spending more money to enhance quality and timely progress, or whether investing more work-effort can enable meet temporal milestones. Some research indicates that organizational goals and strategies influence what performance dimensions managers attend to (Kessler & Chakrabarti, 1996). Future research could investigate how managers’ frames of mind influence what performance dimensions (work, money or time) that are emphasized in communication, and if the message impact depends on what dimension the manager speaks about. Are for example monetary frames weighed more than temporal frames? Future research can investigate under what conditions framed messages actually will impact peoples’ beliefs or “frames in thought” (Druckman, 2011).

The conceptual and theoretical implications the results from Study I and II are discussed more in-depth in each of the papers. Here I will therefore discuss

potential implications of the results in terms of communication in organizations. Is framing of performance messages a productive and useful way to state ones' opinions? I will address this question by first referring to literature that argues that framing is a useful communication technique that managers should adopt to influence others effectively. I will then question whether framing actually can be learned and how it needs to be learned to be effective. Lastly, I will discuss if framed messages are equally effective in all organizational communication situations.

First of all, the present studies highlight a limited aspect of communication processes at work. According to some models of communication in organizations (see for example Edmondson & Smith, 2006; Schwartz, 2002), 1) speakers' perspectives of an issue or choice inform their 2) (framed) messages, which are 3) interpreted and judged relative to the listeners' perspective of the issue or choice, which 4) informs their reaction to the speakers' message. Study I and II thus investigates a limited set of aspects related to how listeners interpret framed messages, mainly focused on component 2) and 3) in this simplified model. Even if the present studies indicate that people pick up differences in framed messages and infer what the speaker means to tell them, such assumptions can produce poor communication if they are not explicitly tested. If peoples' assumptions match the speakers' opinions, framed messages are effective. But if inferred meaning does not match intended meaning, and listeners fail to test their assumptions, then the effectiveness of such communication can diminish.

A review of the popular literature on communication for managers (based on amazon.com, amazon.co.uk and haugenbok.no) shows that framing of messages has been included as a prescriptive recommendation by some authors. One of the most popular books Cialdini (2001b) suggests that "contrasts" can enhance what is positive or negative about an idea or solution. This idea seems similar to Druckman's (2011) concept of emphasis framing, where the communicator can choose to compare different domains, for example contrast economic frames with environmental ones to communicate a message effectively. It also has parallels with goal framing, and the recommendation is that speakers should accentuate positive consequences of following their recommendations or point to the negative consequences of not listening to them. This literature (see e.g. Cialdini, 2001b; Patterson, Grenny, Maxfield, McMillan & Switzler, 2008) seems mainly influenced a listener-based perspective on framing. It is focused on what aspects

of a message will sound most persuasive to a listener. If one follows the recommendations, they "can lead people to concede, comply or change...in predictable ways" (Cialdini, 2001a, p. 74). It is implicitly assumed that the speaker has an attractive idea or suggestion that he should convince the listener to accept or follow. Based on the present studies and the communication model discussed above, it can seem like this literature over-promises the effects of framing performance statements. It can be argued that framing accentuates one's perspectives, but it is difficult to argue that the listeners' perspectives will change.

It has also been questioned whether framing is a skill that can be learned. Kahneman (2003; 2011; Kahneman, Lovallo & Sibony, 2011) defines framing as an intuitive skill that is part of fast thinking System 1, and proposes that individuals cannot avoid being biased when making decisions at work. This implies that listeners can be unaware that they are influenced by framed messages. Fairhurst (2005) suggests that "framing" can be divided into several more specific skills that can be learned. If framing is an automatic and intuitive process, learning it requires managers to become aware of their default frames and replace them with more effective ones. Applied psychologists have devised such learning methods (see e.g. Argyris, 1995; Cialdini, 2001a; Edmondson & Smith, 2006; Schwarz, 2002; Schwarz, Davidson, Carlson, McKinney, 2005; Smith, 2011), and they involve deliberately planning when to use the new frames, micro-level planning of what to specifically say, producing the message and evaluating one's effectiveness afterwards. Whether framing can be learned is also related to the question of how frames are evoked in speakers, perhaps by context or perhaps by deliberate consideration. This is still an unanswered empirical question (Keren, 2011). To use framing as an effective communication skill speakers need to learn when it is appropriate to use it, be aware when such situations arise and remember how to use the communication recipes. The results from Study I and II suggest several communication strategies managers need to learn: to frame time and work oppositely to influence satisfaction and motivation; that the expected framing effects are greatest when a task is half way than for the beginning and end phases; to remember to use different linguistic modifiers, such as that "more than 70%" is a more positive message than "about 70%", but maybe just as positive as "almost 80%". This probably exceeds the number of self-instructions a manager can give himself in addition to thinking about the other aspects of a communication situation, which might limit the usefulness and

"actionability" of such advice (Argyris, 1999). For framing to be an effective skill, managers thus need to practice it a level where it becomes automatic.

The benefits of framing messages in organizational communication can depend on the purpose of communicating about an issue. The persuasion literature seems mainly influenced by a unilateral perspective on communication, where the speaker believes he has the "right" perspective, chooses the frame, and accordingly frames the message in a convincing manner. Some authors (e.g. Argyris, 1995, 1999; Edmondson & Smith, 2006) have argued that unilateral belief- and action patterns can undermine organizational effectiveness in situations that require compromises between different perspectives or development of new perspectives. How effective are framed messages in such situations? When people react emotionally under pressure, the quality of their reasoning and communication can suffer (Edmondson, Roberto & Watkins, 2003; Edmondson & Smith, 2006). It has been suggested that people in such situations should advocate their perspectives so that others clearly understand them, and listen to the others' perspectives. However, this literature has not explicitly defined criteria for what it means to clearly state one's opinion. The present studies suggest that framing messages about beliefs effectively can influence the listeners to infer the speakers' meaning. If the speaker is open to influence, framed messages can be a productive way of engaging in a mutual dialogue. Study I and II can thus be interpreted as a contribution to the literature on dialogue and organization learning (Argyris, 1995, 1999; Edmondson & Smith, 2006).

A last consideration is the ethical aspects of teaching only managers or one party in an organization to communicate in ways that intuitively will influence listeners' to just see one aspect on a situation, option or choice. This can be seen as an attempt to unilaterally influence others in a concealed way. It is assumed that based on limited processing capacity, access to one frame or perspective might block access to the complementary one, just like seeing one of the reversible figures blocks one from perceiving the other (Keren, 2011). LeBoef and Shafir (2003) argue that deliberation does not reduce peoples' protection from being framed, but that learning normative principles can enable people to use these if they can detect that they are relevant for the situation or choice at hand. Druckman (2004) reported that the effects of equivalence-framed messages disappeared if both frames were presented jointly, and that the impact of

framed messages could depend on the attitudes and motivation of the listeners. Some authors (e.g. Cialdini, 2001b) argue that learning about persuasion techniques can protect people from becoming victims of them. If frames effectively can carry information about a speaker's intentions, and they intuitively influence listeners, then the most ethical option seems to be to train all members of an organization to use them. Managers can then communicate their opinions effectively and listeners can protect themselves from being framed by deliberately considering complementary frames than the ones communicated.

To summarize the discussion of Study I and II, framed messages can effectively communicate opinions and perspectives. But if listeners act upon their assumptions about the inferred meaning and do not explicitly test if they have understood the speaker correctly, they risk being misled. There is further no guarantee that the listeners' beliefs actually will be sway in the intended direction, and that they will join in on the speakers' perspectives. It can be argued that framed messages are effective in situations where someone has the "right" perspective, as well as in situations where different perspectives need to be understood. Further research is needed to understand how framing can be learned as a communication skill.

5.2 Reference points and framing of performance

This section discusses how Study III and Study IV illuminate feelings and motivations associated with over- and performances relative to a reference point. Consistent with the predictions of the value function in prospect theory (Kahneman & Tversky, 1979), Study IV showed that goals were believed to increase the likelihood of misconduct. However, Study III showed that managers expect the feelings of satisfaction associated with over-performances to be stronger than the feelings of dissatisfaction associated with underperformances, which can seem contrary to the idea that "losses loom greater than gains".

It is suggested that the emotional valence of performances not only is determined by how they turn out relative to a reference point, but also based on 1) whether the reference point is a positively valenced goal or the neutral status-quo, 2) to what extent the outcome is anticipated or surprising, and 3) how the performance is mentally accounted for. It is further suggested that the motivational effects of goals on exaggerating achievements not only is determined by the perceived

performance gap, but also by 1) moral awareness and 2) the relationship between moral judgments and moral behavior.

5.2.1 Feelings about over- and underperformance

The results from Study III make good sense if we take into account the emotional valence of goals as aspirational reference points and how surprising outcomes can be judged differently than expected ones. Although goals can act as reference points and "inherit" the properties of the value function (Heath, Larrick, & Wu, 1999), Study III suggests that performance goals or predictions are not neutral reference points that split the range of performances into symmetrical sections of gains and losses. In the decision literature reference points are typically defined as the status quo with a neutral valence. Goals represent standards or expectations that are higher than the status-quo, and can therefore be perceived as positively valenced reference points. Achieving a goal is typically associated with positive feelings, and exceeding it might be mentally accounted as an additional gain. This can serve to enhance the positive feelings associated with over-performance that were observed in Study III. The managers evaluated performance according to budgets and plans as positive events, implying that their "neutral" reference point is "doing a bit less than the goal".

Managers' feelings about performances might not only be based on the gap between goals and achievements, but are also influenced by what outcome they believe will come. Performances that are unanticipated can be perceived as surprises, and surprise can intensify the feelings of (dis-)satisfaction associated with the under- or overachievements (Mellers, Schwartz, & Ritov, 1999; Mellers & Ritov, 2010). In Study III most of the vignettes described situations that where the performance levels that can be perceived as surprising. Supporting this argument, the managers in Study III stated that they based on personal experience would find underperformance less surprising than over-performances, particularly in the domain of completion time. Managers thus seem accustomed to expecting that performances will turn out somewhat below the original goal, budget, plan or claim, so that over-performance is subsequently more surprising than comparable underperformance.

However, in one vignette (Vignette 7) where the manager received more specific information about what outcome could be expected, the positive and negative deviations were predicted to feel equally strong. Based on information about what performance he could anticipate, this manager could then adjust his

reference point. Managers' reference points might thus be adjustable or labile, and adapted based on updated performance information. Personal expectations might be different than formal goals, and the surprise and valence of a performance might differ depending on whether is contrasted with goals or subjective expectations. Previous research (e.g, Arkes, Hirshleifer, Jiang, & Lim, 2008), suggests that shifts in reference point may occur in the direction of the realized outcome, and that reference points can change more quickly for gains than for losses. If our study reflects performance judgments at work, managers will adjust their reference points and expectations based on updated performance information from their subordinates.

The interpretations of the counterfactual (Epstude & Roese, 2011) performances in two of the vignettes in Study III (Vignette 6 and 7) are consistent with other research showing that unexpected gains tend to enhance positive affect (Gilovich & Medvec, 1995; Roese, 1994). When hypothetical goal-achievement was contrasted with 20% underperformance, it was predicted to feel more satisfactory than when it was contrasted with 20% over-performance. Thus, predicted feelings from counterfactual gains and losses seem to follow the same pattern as predicted satisfaction from unexpected over- and underperformances. When managers know what to expect the predicted emotional impact of counterfactual performances is attenuated.

Study III also illuminates how different kinds of aspirational reference points such as goals, budgets, plans, performance claims, predictions, and expectations might be defined, adjusted and judged. Reference points created by expectations and predictions differ from other reference points by their arbitrariness. They can be placed high or low, increased or reduced according to one's own discretion. Failures to attain an expected level of performance can thus be framed as performance errors or as prediction errors. It has previously been investigated how people can integrate multiple reference points into a combined comparison level, or segregate them as individual comparisons (see Ordonez, Connolly & Coughlan, 2000). Koop and Johnson (2010) suggest that people can judge gains and losses according to at least three reference points: the status quo, their goals and their minimal requirements. Our study suggests that subjective expectations can be a category of aspirational reference points that influence perceptions and feelings differently than formal goals.

Research on affective forecasting (for reviews, see Wilson & Gilbert, 2003, 2005) shows that people typically overestimate the intensity of feelings associated with future failures and successes. However, this so-called impact bias has been shown to be stronger for negative events than for positive. Previous research shows that people expect negative feelings from future losses to be stronger than positive feelings from future gains, which is the opposite effect to what was observed in Study III: positive outcomes are believed to make a stronger emotional impact than corresponding negative outcomes. This asymmetry subsequently cannot be explained as merely a result of impact bias. Moreover, predicted feelings might influence managerial decision-making, even if they should not match actual feelings. The feelings managers expect to have might contribute to the goals they set for their employees' performance, and how management teams expect to feel about future performances might influence their aspiration levels as well as their motivation to achieve the goal.

5.2.2 Mental accounting of performance

The principles of mental accounting suggest that over- and underperformances can be integrated and judged as part of a global account or segregated and evaluated as a separate account. Performance deviations can thus be judged as proportional amounts or absolute amounts. Study III and IV showed that small and less significant deviations that individuals are accountable for during the course of a day or week at work were judged similar as greater and more significant ones that management teams and firms are accountable for and that accumulate during the course of a year. The managers felt equally positive about less significant amounts of over-performance as about more significant ones, as long as they were proportionally similar.

Similarly, Study IV showed that it seemed equally tempting to exaggerate by a few hours as by thousands of hours or months, as long as the over- and underperformances were proportionally similar. However, Study IV also showed that the performance dimension deviations are accounted in might the likelihood of overstatements. In the two studies that focused on individual consultants' temptations to exaggerate, they were expected to be more likely to overstate their time-reports relative to their work reports and money claims, even if the proportional amounts of lying were similar. One explanation for this difference is that time is psychologically accounted as a more abstract dimension that is more difficult to verify than work and money.

Referring back to Study III, performance accounts with different scope and temporal horizons, monetary performances were judged similarly as temporal ones when time was described in terms of number of hours, days, weeks and months. Such similar ways of describing monetary and temporal achievements could make them appear as comparable amounts of over- and underperformance. The managers evaluated the temporal performance deviations in terms of performance time (hours, days, weeks, months) similarly as the monetary ones, as these amounts can be mentally accounted for in the same manner. However, accounting for performance as completion time made the amounts of over- and underperformance more salient. The more intense feelings associated with completion time can be attributed to the ability of deadlines and milestones to partition temporal performances into an expected component and an "error" component. This "local" account makes the magnitude of over- or underperformance more salient, and thus enhances the positive and negative feelings associated with the saving or delay. In the global monetary or performance time accounts discrepancies plans are integrated in the total budget, and deviations seem emotionally significant based on their percentage of the totality. From a local account perspective it is the absolute size of a delay that counts. It might also be that the affective intensity evoked by the everyday delays (i.e. delivering a presentation two hours late) versus the yearly ones (delivering projects two months late after a year) is influenced by different degrees of surprise associated with temporally proximate versus long-term deviations: delivering a presentation two hours after 13:00 when the boss asked for it at 09:00 in the morning, can be more surprising than learning that a company's projects are delayed. In the last case, the managers have probably been aware of the deviations for quite some time.

Study III originally included a section of three vignettes that investigated whether performance deviations are judged by their relative size to the total account, or by their absolute value. This section is not included in the present revised and re-submitted version of the paper¹, but will be shortly discussed here as it sheds light on how managers mentally account for performance deviations.

Respondents were the same group of managers that took part in Study III. They were asked to compare proportionally smaller and nominally larger errors (e.g. 10%: 100.000 vs. 110.000) with proportionally larger and nominally smaller

¹ The reviewers judged this as a relevant results to publish, but observed that including this additional element would make the paper too extensive and complex.

errors (e.g. 20%: 10.000 vs. 12.000). In the first case the absolute deviation was 10.000 and in the last case only 2000, but in the first case the relative error was only 10% and in the second 20%. They were asked (in different conditions) 1) to evaluate which was the greatest mistake (i.e. deviation between predicted and actual performance), or 2) to predict which performance deviation the manager would feel most (dis)pleased with. The performance deviations consisted of over- and underperformances in terms of work, money and time. The results showed that the magnitude of performance mistakes mainly were judged in terms of proportions of the total account, whereas managers' degree of satisfaction were determined more by the concrete amounts of gains and losses. The actual performance amounts were the same for the vignettes that asked about degrees of mistake as the ones who asked about strength of feelings, but the managers focused on proportions to determine the magnitudes of deviation, and on absolute amounts to determine how they would feel about the deviations. To judge a 20% deviation as a larger mistake, it has to be construed relative the total account. In contrast, judgment based on a local account will make the absolute deviation of 10,000 seem larger than a deviation of merely 2,000. In this study, focus on feelings promoted local accounting of absolute values, whereas focus on errors stimulated calculation of deviation relative to the total global account.

Thus, focus on feelings stimulated different mental accounting of the performances and subsequently different perspectives on the deviations, than attention of the degrees of error. In this additional study performance information was presented in pairs, promoting a joint evaluation of two sets of deviations. The results are somewhat different than the ones in the section of Study III, where emphasis was on predicted feelings and each deviation was presented separately. This set of results (for money and performance time) suggested that global performance accounts were most predominant, and judgments were based on proportions so that nominally small and large deviations appeared similar. Thus, when separately judging feelings about deviations, proportional mental accounting dominated; but in joint evaluations of feelings about two sets of deviations, the absolute values loomed greater. This is an interesting result that warrants further exploration, and the plan is to add additional data for a future publication.

5.2.3 Motivation for overstating performance

Study IV showed that managers believe that goals as reference points can motivate individuals and organizations to overstate performances. This idea is not new, but the present study seems to be the first one where managers' beliefs about this have been investigated. This is also the first study where the unethical side effects of goals have been theoretically interpreted based on reference points and the value function of prospect theory (Kahneman & Tversky, 1979). Mishina, Dykes, Block, and Pollock (2010) suggested this as a theoretical explanation of the results in their archival study of firm misconduct, but provided no data about the managers' actual decision making. Schweitzer, Ordóñez, and Duoma (2004) found that goals can motivate students to overstate achievements on a word-task in a laboratory setting, but interpreted this in light of goal setting theory. This is somewhat surprising as the value function is one of the most popular models for decision making for economists and psychologists (Koop & Johnson, 2010).

Several of the firm level theories of misconduct assume that discrepancies between goals and performance can motivate managers to overstate achievements, but these models do not explain the psychological mechanisms involved. The value function provides clear predictions about how such gaps are judged: reference points clearly define performances as sub-standard; adding performance increments below the reference point is associated with increasing gains in psychological value; diminishing sensitivity strongly motivate performance overstatements closer to the goal relative to distant ones; in a loss frame, it might be more tempting to choose risky cheating to enhance achievements; and goal achievement can be associated with feelings of satisfaction, even if one has cheated. Thus, Study IV suggests that individual and firm misconduct can be understood based on a common and well-established theory. As Greve, Palmer, and Pozner (2010) point out: it is always people who perform acts of misconduct, even if firm level theories focus on organizational and contextual conditions associated with this outcome.

Study IV suggests that goals as reference points can have at least two different influences on motivation for overstating achievements: they can undermine "moral awareness" or skew moral judgments. Models of behavioral ethics in organizations (Jones, 1991; Rest, 1986; Trevino, Weaver, and Reynolds, 2009) assume that the first stage of moral reasoning involves awareness that one is making a choice with moral aspects. When people judge a situation based on an

"ethical frame of mind" (Tenbrunsel & Smith-Crowe, 2008), this can elicit different judgments than if the same situation is judged from a "business frame" (March, 1995; Messick, 1999). If the managers in Study IV responded in a business frame of mind, the results suggest that goals can focus managers to only consider how to enhance business performances, and to overlook moral considerations associated with how they achieve this. This is consistent with Barsky's (2008) argument that goals based on their ability to focus attention can influence people to overlook moral aspects of a decision. Introducing business goals has been found to stimulate people to focus on these rather than ethical considerations (Tenbrunsel & Messick, 1999). Cognitive processing of goal and performance information can consume cognitive capacity that otherwise might have been used to detect and reflect upon ethical aspects of the situation. In this perspective, framing a performance relative to a goal can exclude evoking and processing of other frames of the situation, such as ethical ones.

Moral awareness has been widely defined as thoughts about how others are affected by a decision (Rest, 1986), and more narrowly to be explicitly aware that one is making a moral choice. Jones (1991) suggests that moral frames can be evoked by the "moral intensity" of an issue. Tenbrunsel and Smith-Crowe (2008) note that moral awareness is difficult to measure. In most studies people are directly asked whether a situation represents an ethical dilemma, a procedure that in itself can evoke moral frames of mind, frames that might not otherwise be directly activated by the situation. Several aspects of Study IV suggest that moral frames might not have been stimulated: the managers were asked if someone would exaggerate performance and not if this was an ethical action or not; the title of the study "Tempted to exaggerate?" suggested it was about motivations to overstate performances and not how immoral or unethical such action can seem. Only one question in one of the conditions used the term "unethical". The study did not include information that typically enhances moral intensity, such as negative consequences for the managers, their companies or social condemnation from the public. Interpreted this way, Study IV shows that defining goals and providing information suggesting there is a performance shortfall, can focus managers' attention on this aspect of a situation, and inhibit moral awareness and moral considerations.

However, if the managers were morally aware when responding to Study IV, another interpretation is possible: goals can motivate managers to weigh ethical

considerations as less important when evaluating a situation. This is consistent with Barsky's (2008) suggestion that goals can distort moral judgments by justifying deviations from moral standards (i.e. "because of the goal"), or by displacing responsibility for unethical behaviors (i.e. "to achieve the goal"). If the managers' beliefs in the present study are based on a moral frame of mind, then the results suggest that goals can influence managers to under-weigh ethical considerations.

What inferences can be drawn about how goals as reference points actually influence unethical behaviors? Historically ethical decision-making has been conceptualized as a rational process involving conscious deliberation of options and outcomes. The influential model of Rest (1986) is such an example, suggesting that moral behavior is an outcome of a sequence of stepwise deliberate judgments: 1) moral awareness, 2) moral judgment, and 3) moral motivation. However, empirical studies have failed to demonstrate a consistent relationship between moral awareness and moral judgment; people who are morally aware do not necessarily make moral judgments (Barsky, 2008). In terms moral behavior as an outcome of moral judgments and motivation, Trevino et al (2006) suggest that ethical behavior is a product of individual characteristics and organizational conditions. In organizations the association between goal setting and actual misconduct can thus be mediated by what kind of goals are set. Specific goals are assumed to increase the risk of unethical behavior by drawing attention to a limited set of aspects of the outcome, and perhaps leading people to overlook "goal irrelevant" moral considerations (Barsky, 2008). Difficult goals can have similar effect by motivating people to overlook or discount considerations that require attention or are in conflict with achieving the goal. Difficult goals can put people under pressure and enhance their tendency to reduce cognitive load by processing mainly goal-relevant information and not adding cognitive complexity through moral considerations (Barsky, 2008; Street, Douglas, Geiger, and Martinko, 2001). Outcome goals are assumed to increase the probability of choosing unethical approaches to achieving them (Barsky 2008; Ordóñez, Schweitzer, Galinsky, & Bazerman, 2009) relative to behavioral goals, which more specifically indicate how one should act. Employee involvement in goal setting can influence unethical behaviors. The assumption is that if employees are involved in discussing the goal(s), this will stimulate thoughts about strategies for goal attainment and also increase peoples' awareness about potential moral dilemmas associated with the work towards the goal. On the

other hand, non-involvement might foster that employees disengage from ethical considerations associated with achieving the goal, and only focus on goal achievement in itself (and not moral aspects of how it is attained).

To summarize, Study IV adds to our understanding of misconduct and unethical behavior in organizations by showing that managers believe goals to be associated with inflated performance statements. Whether goals actually will produce unethical actions, will depend on whether managers are morally aware and in an ethical frame of mind. The motivational effects of the goals will further be influenced by whether the managers have been involved in defining them, and how specific and difficult they are. The organizational systems, culture and climate will also be of importance for how the managers deal with performance pressures and deviations.

5.3 Conclusions

The present studies have addressed four research questions related to how reference points and framing of progress and performance in communication at work can influence perceptions, feelings, and motivations.

Question I) was *How can framing of progress in terms of past-oriented versus future-oriented reference points influence beliefs about whether a project is developing as planned or should be accelerated?* In this study work and time were conceptualized as linear and parallel progress dimensions, and performance formulated neutrally and factually as magnitudes relative to the start or the completion of the task. Even if the progress statements referred to the same "objective" amounts of work and time, framing the messages "looking back" on work done or time spent, communicated a different perspective than "looking ahead" on work and time remaining. Work frames about amounts done imply feelings of satisfaction with progress, but time frames about amounts spent suggest that progress is insufficient and work motivation needs to be intensified. Reversing the progress frames looking ahead towards completion of a task, stimulated switching the implications work and time frames. Work and time thus appear as oppositely valenced performance dimensions that stimulate contrasting perspectives of satisfaction and task motivation. However, time frames are similar to work frames in that they implicitly refer to activity levels and efficiency, and suggest what effort is needed to complete a task.

Question II) was *How does framing of progress in terms of past-oriented versus future-oriented reference points suggest whether a manager is promoting further investments in an existing but failing project, or advocating to invest a new project instead?* Study II showed having invested substantial work, money and time in a venture promotes beliefs about preferences for further investments, but the opposite frame communicates a switch of investment intentions. When qualitative modifiers were added to the numerical progress amounts to indicate how (in-)significant they were, this seemed to dominate the perceptions of the investment intentions. In this study the way in which progress was framed dominated the judgments, and seemed more important for the outcome than characteristics of the performance dimensions work, money and time.

Question III) was *Do managers feel as satisfied with performances that exceed a reference point as they feel dissatisfied with underperformances?* This study suggested that the feelings associated with performances are determined not only by how they turn out relative to a reference point, but also based on the valence of the reference point, to what extent the outcome is anticipated or surprising, and how the performance is mentally accounted. Goals are positive outcomes, surprise can intensify feelings and over-achievements can be perceived as psychological add-ons beyond the performance expectations. Subsequently, doing better than expected can be associated with stronger feelings of satisfaction, than under-performing generates feelings of dissatisfaction. Monetary and temporal performance amounts can be judged proportionally relative to a total budget, so that the amounts of time and money seem similar to one another. However, temporal reference points such as deadlines or milestones promote segregation of deviations into local accounts, stimulating people to judge them based on absolute values. Deviations in performance time suggest how efficiently work is completed; performance time frames not only communicate duration or time flow, but also indicate if the frequency of activity per time unit seems sufficient. Information about being delayed seems to stimulate frames about wasting time or working inefficiently as well.

Question IV) was *Do managers believe that underperforming relative to a reference point can promote overstating of achievements?* This study showed that goals are believed to influence individuals' motivation to overstate performances, particularly in terms of time spent on a task. When goals are achieved, this is assumed to inhibit motivation for further performance exaggerations. Beliefs

about motivation to cheat seem more influenced by relative performances than by absolute achievements; low and high performers are believed to be equally prone to misconduct, as long as achievements are contrasted with a higher reference point. The motivational effects of goals on misconduct are not only determined by perceived performance gaps, but also by moral awareness and moral judgments. Moral beliefs about time seem to differ from work and monetary ones; lying about a number of time units might seem less apprehensible than lying about amounts of money; time spent might be more vague and abstract than the concrete amounts of observable work outputs.

To conclude, the present research has shown that reference points very effectively “work” to influence beliefs, feelings and motivation in work contexts.

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Appendix

Insert appendix about here. See separate file

Table 1

Mean probability ratings (1-5) of exaggerated reports for consultants with or without a goal (Study 1.1)

	Goal		No goal	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Performance	2.93	(1.21)	2.92	(0.95)
Money	3.41	(1.10)	2.58	(0.90)
Time	3.90	(0.81)	2.50	(1.28)
Total	3.36	(1.14)	2.67	(1.07)

Table 2

Mean probability ratings (1-6) of exaggerated reports for consultants with or without a goal (Study 1.2)

	Goal		No goal	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Performance	3.38	(0.97)	2.93	(1.17)
Money	3.00	(1.38)	3.10	(1.52)
Time (hours)	3.53	(1.13)	2.64	(1.07)
Total	3.33	(1.18)	2.87	(1.24)

Table 3

Which consultant is more likely to hand in an exaggerated report? Number (percentages) of participants selecting consultant with or without goal in two conditions (Study 1.3)

	Performance as expected				Underperformance				χ^2	<i>p</i>
	Goal		No goal		Goal		No goal			
	n	%	n	%	n	%	n	%		
Performance	24	(30.7)	54	(69.3)	27	(69.3)	12	(30.7)	15.64	.000
Money	23	(40.3)	54	(59.3)	27	(71.1)	11	(28.9)	17.56	.000
Time	19	(24.7)	58	(75.3)	27	(71.1)	11	(28.9)	22.80	.000

Table 4

Which firm is more likely to hand in an exaggerated report? Number (percentages) of participants selecting firm with or without specific target in two conditions (Study 1.4)

	Performance on target				Performance below target				χ^2	<i>p</i>
	Goal		No goal		Goal		No goal			
	n	%	n	%	n	%	n	%		
Projects	13	(18.0)	59	(72.0)	49	(69.1)	22	(30.9)	37.80	.000
Consulting hours	15	(20.3)	57	(69.7)	62	(86.1)	10	(13.9)	61.66	.000
Completion time	9	(12.7)	62	(87.3)	57	(71.9)	13	(18.1)	66.92	.000

Table 5

Mean predictions of firms with high, medium and low performance (Study 2.1)

	Condition 1	Condition 2	Condition 3	F (2, 144)	p
	High	Medium	Low		
Likelihood of misconduct	2.87	2.91	3.16	0.65	n.s.
Expected effect of incentives	3.16	3.40	3.22	0.62	n.s.

Table 6

Mean ratings (1-6) of high and low performing firms that achieve or fail to achieve their goals (Study 2.2)

	High performance		Low performance
	External goal	Internal goal	Internal goal
Achieves goal.			
Likelihood of misconduct	2.95	2.95	3.53
10% under goal.			
Likelihood of misconduct	3.28	3.33	3.24

Table 7

Which firm is more tempted to report inflated performance? Number (percentages) of participants selecting Firm A or Firm B in three conditions (Study 3.1)

	Firm A	<i>n</i>	%	Firm B	<i>n</i>	%	binomial <i>p</i>
Condition 1: 95-100		27	(58.7)	60-70	19	(41.3)	n.s.
Condition 2: 90-100		23	(40.4)	60-70	34	(59.6)	n.s.
Condition 3: 85-100		11	(26.8)	60-75	30	(73.2)	.025

Table 8

Which firm is more tempted to report inflated performance? Number (percentages) of participants selecting Firm A or Firm B in three conditions (Study 3.2)

	Firm A	<i>n</i>	%	Firm B	<i>n</i>	%	binomial <i>p</i>
Condition 4: 95-100		24	(45.3)	40-50	29	(54.7)	n.s
Condition 5: 90-100		25	(53.2)	40-50	22	(46.8)	n.s
Condition 6: 85-95		9	(22.0)	40-50	32	(78.0)	0.00

Table 9

Which firm acts more unethically? Number (percentages) of participants selecting Firm A or Firm B in three conditions (Study 3.2)

	Firm A	<i>n</i>	%	Firm B	<i>n</i>	%	binomial <i>p</i>
Condition 1: 95-100		8	(14.8)	40-50	46	(85.2)	0.00
Condition 2: 90-100		25	(62.5)	40-50	15	(37.5)	n.s
Condition 3: 85-95		16	(36.5)	40-50	29	(64.4)	n.s

Table 10

Mean predictions (1-7) of firms with high, medium and low performance (Study 4.1)

	Condition 1	Condition 2	Condition 3	F (2, 144)	p
	High	Medium	Low		
Expected goal	40.27	35.98	4.12	492.5	.000
Self confidence	4.13	3.88	3.39	14.50	.000

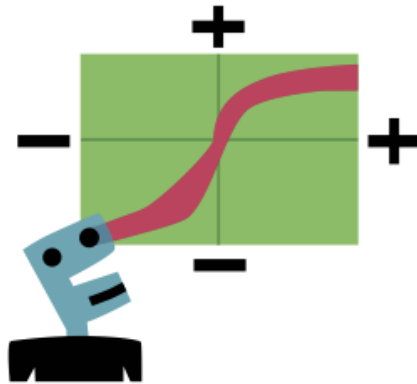
Table 11

Mean ratings (1-7) of high and low performing firms that achieve or fail to achieve their goals (Study 4.2)

	High performance		Low performance
	External goal	Internal goal	Internal goal
Achieves goal			
Future aspiration	5.29	5.82	5.84
10% under goal			
Future aspiration	4.64	4.85	5.45

Appendix. Overview of studies

	Proposition 1					Proposition 2			Proposition 3			Proposition 4	
	Study 1.1	Study 1.2	Study 1.3	Study 1.4	Study 2.1	Study 2.2	Study 3.1	Study 3.2	Study 3.3	Study 4.1	Study 4.2		
Participants	120 mid-level managers in energy and transportation firms	184 top- and mid level managers in energy and food industry firms	120 mid-level managers in energy and transportation firms	150 top level managers in pharmaceutical firms	150 top level managers in pharmaceutical firms	284 top- and mid level managers in energy, food, and oil- and gas industry firms	184 top- and mid level managers in energy and food industry firms	284 top- and mid level managers in energy, food, and oil- and gas industry firms	284 top- and mid level managers in energy, food, and oil- and gas industry firms	150 top level managers in pharmaceutical firms	284 top- and mid level managers in energy, food, and oil- and gas industry firms		
Date collection procedure	Break during management training program	Web based survey	Break during management training program	Web based survey	Web based survey	Web based survey	Web based survey	Web based survey	Web based survey	Web based survey	Web based survey		
Vignette	Individual consultant to complete weekly time report	Individual consultant to complete weekly time report	Pairs of individual consultant to complete weekly time report	Firms for report annual performance	Comparison of 3 firms with high, medium and low performance, all 10% below goal	Comparison of 3 firms high, medium and low performance	Comparison of firms with performance close to the goal (85-95%) and lower performance (60%)	Comparison of firms with performance close to the goal (85-95%) and lower performance (40%)	Comparison of firms with performance close to the goal (85-95%) and lower performance (40%)	Comparison of 3 firms high, medium and low performance	Comparison of 3 firms high, medium and low performance		
Design	2x3 conditions Performance goal/no goal for work, money and time	2x3 conditions Performance goal/no goal for work, money and time	2 conditions Performance according to goal/10% under-performance	2 conditions Performance according to goal/10% under-performance	3 conditions: high, medium and low performance	2x3 conditions: Goal achievement/10% under performance,	3 conditions, adding 5%, 10% or 15% to performance statement	3 conditions, adding 5%, 10% or 15% to performance statement	3 conditions, adding 5%, 10% or 15% to performance statement	3 conditions	2x3 conditions		
Scale	1-5, 1=very unlikely and 5=highly likely to overstate performances	1-6, 1=very unlikely and 6=highly likely to overstate performances	Select consultant most likely to overstate performance	Select firm most likely to overstate performance	1-5, 1=very unlikely and 5=highly likely to overstate performances	1-6, 1=very unlikely and 6=highly likely to overstate performances	Select firm most likely to overstate performance	Select firm that performed most unethical overstatement	Select firm that performed most unethical overstatement	Qualitative estimate of goal 1-5 rating of self confidence in achievement, 1=low 5=high	1-7 of motivation to achieve future aspirations, 1=very low motivation 7=very high motivation		



Reference Point at Work

Framing of performance, money and time
in communication

Knut Ivar Karevold

Karevold Organisasjonspsykologi

