When people perceive an event as resulting from their action they feel as authors and experience agency. Experiences of agency result primarily from the inference, rather than the direct observation, that there is a causal relation between one’s action and an event in the world (Wegner, 2002; Aarts, Custers, & Wegner, 2005). This inference typically occurs when people first imagine an outcome they intend to accomplish, then act and then observe a corresponding outcome in reality. For instance, when hitting a light switch, pressing buttons to call someone from a cell phone, or when telling a joke, a direct perception of the relation between action and effect is usually not possible. In such cases, the experience of agency over resulting effects needs to be based only on a timely match between the expectation and later observation of the intended outcome - the light turning on, the dialing tone, people’s laughter.

The inferential basis of the experience of agency is important for discerning effects in the environment that have occurred due to one’s action and those that have not, especially in ambiguous or unclear situations. Experiences of agency highly depend on the match between an anticipated and an observed action outcome (Wegner & Wheatley, 1999). Also experimentally, an experience of agency can be induced when in fact no self-causation has taken place. When people are primed with consistent prior outcome information in an ambiguous situation, people are more likely to claim causation for an ensuing event, than without an outcome prime (Aarts et al., 2005). This effect describes the illusion of agency. Based on previous research, it can be assumed that one moderating condition to the susceptibility to agency illusions is the degree to which people are prepared to process information about the outcomes of their actions. For example, when people are inclined to represent their behavior in terms of higher order outcomes, they have been found to be susceptible to outcome primes and illusions of agency. When, however, they represent their behavior in terms of low level actions instead of outcomes, illusions of agency are reduced (Van der Weiden, Aarts, & Ruys, 2010).

Furthermore, feeling as an agent is especially vital when people pursue goals. Literally, when trying to get something done, people are tuned to the perception of outcomes (Fishbach & Ferguson, 2007; Förster, Liberman, & Higgins, 2005). This overly preparedness to process information relating to the to-be attained goal subsides as soon as a goal has been successfully attained and goal pursuit has thus been completed (Förster et al., 2005; Förster, Liberman, & Friedman, 2007). Inasmuch as illusions of agency are facilitate when people are prepared to process information about action outcomes - but they are reduced when this preparedness subsides - and goal pursuit can substantially influence the information processing of higher level outcome information, it is reasona-
ble to assume that experiences and illusions of agency on the one hand and goal pursuit on other are inextricably linked. Based on this evidence, in this dissertation I investigated the susceptibility to illusions of agency from a goal perspective. This approach entails that people process information about the outcomes of their actions differently depending on their status or strategy of goal pursuit. Consequently, differences in goal pursuit should result in differences in the susceptibility to illusions of agency.

Specifically, the present dissertation examines whether otherwise robust illusions of agency after outcome priming may be diminished in situations where people are less concerned with action outcomes due to changes in their goal pursuit. As mentioned previously, when trying to reach a certain goal, it is crucial that one is overly tuned to the perception of outcomes in the environment in order to identify own effectiveness. When however, one knows how to be effective or one has the power to reach one’s goals, one may be less likely to focus on the outcomes of ones actions. Consequently, it is predicted that conditions, which typically reduce the focus on action outcomes, make it less likely to err on the illusory side of agency, compared to situations that facilitate a focus on outcomes. Specifically, it is proposed that conditions such as completed goal pursuit, counterfactual thinking and high power, which reduce a focus on outcomes, also reduce illusions of agency.

To measure the extent to which people endorse illusions of agency, two paradigms – the wheel-of-fortune paradigm and the temporal binding paradigm – were used. In the former paradigm participants perform a task that resembles a wheel-of-fortune game. In this task the participant rotates a square around a path of white tiles while at the same time the computer also rotates a second square around this path. At some point in time, the participant is instructed to stop the rotation of his square by pressing a stop-key. Then, the participant sees the stop location of one square that could represent his square, and thus the result of his action, or the computer’s square. The participant then reports his experience of agency over stopping this particular square on a 10-point scale. In order to induce illusions of agency, the stop location and thus the future outcome is primed subliminally. The subliminal outcome priming simulates the condition of a prior outcome representation in people’s minds during everyday experiences of agency and yields higher self-reports of agency over the stopping of the square than when no prime is present (Aarts et al., 2005). A similar procedure of outcome priming underlies the temporal binding paradigm, an implicit measure of illusions of agency. Temporal binding refers to the phenomenon that outcomes caused by oneself seem to occur faster than those not
brought about by oneself. Specifically, in the experimental task the participant hears a first high or low frequency tone upon which he is instructed to press a button at a time of his choosing. Following this action, a second tone occurs and it is the participant’s task to estimate the time interval between his pressing of the button and the occurrence of the ensuing tone. When the second tone corresponds with the first tone, and thus serves as a prior mental representation of the future outcome, people are more likely to underestimate the time interval between action and outcome (Moore, Wegner, & Haggard, 2009). Given that a reduced perception of time between action and outcome corresponds to an experience of agency (Ebert & Wegner, 2009), temporal binding is another, more unobtrusive measure of illusions of agency.

These two paradigms were employed within three empirical chapters to experimentally investigate under which conditions illusion of agency may be more or less likely to occur. Specifically, in Chapter 2 it was proposed that when goal pursuit has been completed, this engenders cognitive conditions where the focus on action outcomes is temporarily reduced and illusions of agency are expected to subside (Fishbach & Ferguson, 2007; Förster et al., 2005). These predictions were confirmed in Studies 2.1 and 2.2 where participants were given positive (vs. negative) feedback on their goal pursuit or participants recalled an instance of successful (vs. failed) goal pursuit. It was found that after goal completion (positive feedback or successful goal pursuit) illusions of agency in the wheel-of-fortune paradigm were reduced, whereas this was not the case after goal incompletion (negative feedback or failed goal pursuit).

A common spontaneous and effective reaction of most people to failed goal pursuit is the simulation of alternative positive realities by thinking “If only I had done X, then things would have been better”. In Chapter 3, I investigated such counterfactual thinking and its further influence on illusions of agency. In Study 3.1 all participants recalled a goal failure. Following this recall task, participants in one condition generated upward counterfactual thoughts that simulate an alternative positive reality in how the goal could have been reached. Previous research suggests that upward counterfactuals facilitate goal pursuit in the future, because they equip people with the necessary courses of action as to what needs to be done for goal completion. Thereby, focus is on effective action, which lets them dismiss concern with the overarching goal (Epstude & Roese, 2008, 2011; Smallman & Roese, 2009). In another condition, participants generated downward counterfactual thoughts that simulate a more negative alternative reality, in the form of “At least I did not do Y, or things would have been a lot worse”. This form of counterfactual thinking has no facilitating effect on future goal pursuit as it serves an affective function and was used as a
control condition. In line with the assumption that upward counterfactual thoughts let people dismiss concern with higher order outcomes, it was found that upward counterfactuals reduce illusions of agency in the wheel-of-fortune paradigm, in contrast to downward counterfactuals.

The findings of Study 3.1 were interpreted in the way that upward counterfactuals reduce concern with higher order outcomes and thereby also the influence of outcome primes on illusions of agency. Presumably, the focus on action and action planning at the expense of outcomes after upward counterfactual thinking assists effective goal pursuit in a future situation (Markman, Gavanski, Sherman, & McMullen, 1993). To examine whether the future relevance of upward counterfactuals also has a differential influence on the susceptibility to illusions of agency, Study 3.2 was conducted. In the study, again all participants were given negative feedback on a flanker task that rendered their goal to perform well incomplete. Before the generation of upward counterfactuals, it was manipulated whether these were future relevant or not. As a manipulation, one group of participants were informed that they could do the flanker task, in which they had failed, again at the end of the experiment, the other group was not given any such further information. The study’s results demonstrate that only when upward counterfactual thinking concerned a repeatable situation and thus a future-relevant goal failure, illusions of agency were eliminated. When the goal failure was not relevant to a future situation, illusions of agency occurred, even after upward counterfactual thinking.

Lastly, in Chapter 4 I investigated whether people’s degree of power, which suggests whether one does or does not have the means and possibilities to reach one’s goals, can influence the susceptibility to illusions of agency. People in high power are typically less concerned with the consequences and outcomes of their actions than people in low power. They literally have the power to enact their intentions quickly and without extensive contemplation (Galinsky, Gruenfeld, & Magee, 2003; Guinote, 2007a; Keltner, Gruenfeld, & Anderson, 2003). On the basis of the premise that people in high power are less focused on action outcomes, in contrast to people in low or equal power positions, they should be less susceptible to illusions of agency. In Studies 4.1-4.3 this prediction was confirmed. Specifically, participants were first primed with high power, low power or in a neutral control condition, by means of an idiosyncratic recall task or a scrambled sentence procedure. In Study 4.1 and 4.2 participants primed with high power showed less susceptibility to illusions of agency in the wheel-of-fortune paradigm than participants primed with low power or those in a neutral control condition. In Study 4.3 this finding could be replicated by using the more implicit temporal binding paradigm. Here, time estimates
were not influenced by outcome priming for participants who were primed with high power. In contrast, participants who were primed with low power or those in a neutral control conditions did show the effect of temporal binding, or illusions of agency, after outcome priming.

Together, these findings support a goal perspective of the conditional susceptibility to illusions of agency depending on goal pursuit. People’s state of goal pursuit could be identified as an important moderator to the occurrence of agency illusions. When people completed a goal, when they know what to do through counterfactual thinking or when they have the power to realize their goals, otherwise robust illusions of agency subside. Presumably, the aforementioned conditions reduce concern with action outcomes, which eliminate the impact of falsely presented outcome information on experiences of agency.

One important task for future research is to investigate the consequences of the susceptibility to agency illusions. The present research suggests that illusions of agency primarily occur when people are trying to reach a goal and have not planned actions accordingly. After the present work has demonstrated a connection between illusions of agency and goal pursuit, an interesting line of investigation could consider the functional role of agency illusions in the goal pursuit processes. Does the susceptibility to agency illusions enable people to reach their goals faster or more effectively? Does immunity to agency illusions let people dismiss impossible or unreachable goals? The goal perspective on illusions of agency presented in this dissertation provides a framework within which these and related questions may be investigated.