

*Max Albert Edler von der Planitz*

*Upper Echelons Theory:*

*How Managerial Characteristics Affect Corporate Strategic Change*

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## **List of Abbreviations**

CEO	Chief executive officer
OLS	Ordinary least squares
ROA	Return on assets
ROE	Return on equity
ROS	Return on sales
R&D	Research and development
S&P	Standard & Poor's
S.D.	Standard deviation
SIC	Standard industrial classification
TMT	Top management team





# **I Introduction**

## **1 Research Motivation**

For decades, researchers have investigated the antecedents of strategic organizational outcome, such as specific strategies, specific strategic changes or the amount of strategic flexibility. Different theories, such as contingency theory (e.g., Chandler, 1962; P. R. Lawrence & Lorsch, 1967), resource dependency theory (Pfeffer & Salancik, 1978), or upper echelons theory (Hambrick & Mason, 1984) emerged explaining organizational strategic behaviors. According to contingency theory, organizations' strategy is a function of the environmental structure (Chandler, 1962; Hannan & Freeman, 1977; P. R. Lawrence & Lorsch, 1967). Hence, organizations' strategic moves are seen as contingencies from external factors. In contrast, resource dependency theorists argue that organizational strategic behavior aims at reducing resource scarcity and can thus be explained by the resources a company requires to operate successfully, their scarcity, and the type of actor who competes for or controls the resource (Pfeffer & Salancik, 1978). Here, organizations are viewed as acting entities that not only react to the environment but strive to shape external conditions such that resource dependencies decline. Building on the understanding of the acting organizations Hambrick and Mason (1984) put the individual actors in the focus and suggest that organizational strategic behavior also depend on the top executives. They base their propositions on two suggestions put forward by other researchers in earlier publications. Child (1972) proposed that economic constraints do not necessarily entail specific strategic actions, as it has been proposed by contingency theorists (e.g., P. R. Lawrence & Lorsch, 1967), but that political processes between executives lead to strategic choices that shall address economic constraints. Hence, Child argues that organizational strategic behavior is the result of executives' decisions. Already roughly 10 years earlier, March and Simon (1958)

proposed that managers are bounded rational, meaning that due to cognitive constraints managers are not able to process all information objectively and that therefore, managers always interpret situations subjectively. Hambrick and Mason (1984) build on the premise that corporate strategies are the result of managers' decisions and propose that due to bounded rationality these decisions are biased on a subjective interpretation of the situation. Further they propose that managers unconsciously filter the information they get through their frames of reference, consisting of values, beliefs and preferences that might be approximated by observable characteristics such as age, tenure, functional experience, and education. Because these filtered and thus biased information build the basis for strategic decisions, according to upper echelons theory, frames of references become reflected in strategic decisions and thus in organizational strategic behavior (Hambrick & Mason, 1984). By proposing this theory, Hambrick and Mason (1984: 193f) envisioned to provide the basis for inquiries generating three benefits, namely to offer scholars "greater power to predict organizational outcomes", to provide valuable insights to those responsible for "selecting and developing upper level executives", and to strategists who are "trying to predict a competitor's moves and countermoves". Based on upper echelons theory a large body of research emerged uncovering many associations between managerial characteristics and organizational strategies or strategic change (see Carpenter, 2011; Carpenter, Geletkanycz, & Sanders, 2004; Finkelstein, Hambrick, & Cannella, 2009).

However, existing research has been persistently criticized for not being conclusive on the causal effects that might yield associations between observed managerial characteristics and strategic organizational outcome (Finkelstein et al., 2009; Hambrick, 2007; Pettigrew, 1992). While upper echelons theorists argue that characteristics indicate how information and in consequence decisions are biased and that therefore, associations between characteristics and strategic outcomes indicate a causal effect of frames of reference on strategies (e.g., Barker &

Mueller, 2002; Carpenter & Fredrickson, 2001; Wiersema & Bantel, 1992), alternative perspectives suggest that firms' strategies are predictive of the selection of executives (e.g., Gupta, 1984; Guthrie & Datta, 1997; Zhang & Rajagopalan, 2003), the self-selection of executives (Beckman & Burton, 2011; Finkelstein et al., 2009; Larsen, 2004) and the development of executives (e.g., Sonnenfeld, 1986; Vancil, 1987). Unfortunately, in the light of these reverse effects it seems to be critical to being able to draw conclusions on causality in order to generate the benefits Hambrick and Mason (1984) envisioned to trigger. Accordingly, upper echelons researchers call for solving this issue (e.g., Carpenter et al., 2004; Finkelstein et al., 2009; Hambrick, 2007) and highlight two main reasons for this limitation. Theory-wise, the upper echelons framework does not include the reverse causal effects explicitly and does not model how the characteristics affect strategic change over time (e.g., Beckman & Burton, 2011; Finkelstein et al., 2009). As a result, methodologically-wise the upper echelons framework has triggered almost only cross-sectional studies that do not allow for conclusions on causality (Beckman & Burton, 2011; Finkelstein et al., 2009; Hambrick, 2007).

Consequently, Finkelstein et al. (2009) call for developing a theory that can cope with the reverse effects that might exist between executives' characteristics and firms' strategies and to design empirical studies such that they allow for drawing conclusions on causality.

In consequence, of this causality-related limitation, one of the most central propositions of the upper echelons theory has not been underpinned. Hambrick and Mason (1984) suggest that frames of reference that are defined as a set of values, preferences, and beliefs become reflected in strategic decisions of top managers and thus in strategic actions of organization. Further, they suggest that similar frames of references yield similar strategic decisions and encourage researchers to conduct quantitative empirical inquiries on the relation between strategic actions and frames of reference, which may be approximated by observable characteristics (Hambrick & Mason, 1984). In other words, they propose that similar

characteristics indicate similar frames of reference that yield similar strategic actions. However, apart from not being able to establish causality, so far characteristics have not even been found being associated with specific strategic actions. Instead, researchers on the one hand found that characteristics like tenure, age and educational level are associated with the amount of strategic actions, but not with the type of strategic actions (e.g., Datta, Rajagopalan, & Zhang, 2003; Wiersema & Bantel, 1992). On the other hand, researchers found that characteristics like international experience or R&D experience are associated with the level of strategic indicators like international exposure (e.g., Carpenter & Fredrickson, 2001; Sambharya, 1996; Tihanyi, Ellstrand, Daily, & Dalton, 2000) or R&D expenditures (e.g., Barker & Mueller, 2002; Boeker, 1997a) respectively, but not with strategic actions or the development of strategic indicators. Hence, no association that could underpin the idea that similar characteristics yield similar strategic actions has been found, not to mention a causal effect. The abovementioned distinction of findings researchers generated so far points to another criticism scholars frequently make. Although upper echelons theory suggests that characteristics approximate the filter through which information get processed, little is known upon differences between the effects different characteristics might have on strategic decisions (Carpenter et al., 2004; Hambrick, 2007; Pettigrew, 1992). Instead, upper echelons research so far focuses very much on the question which characteristics influence strategic choices, while ignoring the question how they do it or through which effects they do it (Carpenter et al., 2004; Hambrick, 2007; Pettigrew, 1992). As outlined above, when deriving hypotheses scholars either argue that characteristics like certain experiences indicate preferences for certain strategies (e.g., Barker & Mueller, 2002; Boeker, 1997a; Strandholm, Kumar, & Subramanian, 2004) or that characteristics like tenure in the organization indicate the amount of strategic change executives' are willing to initiate (e.g., Datta et al., 2003; Finkelstein & Hambrick, 1990; Wiersema & Bantel, 1992). Hence, there might exist characteristics that determine which type of strategic actions are made and others that

determine how many strategic actions are made. Nevertheless, I am not aware of a systematic differentiation between such effects. Notably, any differentiation between characteristics' effects on strategies only makes sense as soon as conclusions on causality can be drawn.

## 2 Research Contributions

This dissertation aims to contribute to upper echelons research by addressing the abovementioned limitations and research gaps, namely not being able to draw conclusions on causality, not underpinning the proposition that similar characteristics yield similar strategic actions and not differentiating between different effects different characteristics might have. To address these limitations, first, I conceptually refine the upper echelons framework and derive research design criteria that allow drawing conclusions on causal effects. Second, to demonstrate the feasibility and the importance of the suggested research design I apply this research design to apparently well-explored relations. Third, I propose a theoretical differentiation between different effects different characteristics might have, derive implications for hypothesis development and empirical testing and apply this to the majority of characteristics that so far have been analyzed with an upper echelons perspective. Thereby I underpin that characteristics that are deemed to indicate a preference for specific strategies at least yield strategic actions. According to the three steps outlined afore, this dissertation follows three research objectives.

***First research objective:*** *Taking into account reverse causality in upper echelons theory.*

I follow the proposition of Finkelstein et al. (2009) and conceptually refine the upper echelons framework that has been proposed by Hambrick and Mason (1984) such that it includes both reverse causal effects, namely effects of executives' characteristics on firms' strategies and effects of firms' strategies on executives' characteristics, and that it differentiates between

both through the inclusion of time. In addition, in order to pave the way towards empirical findings that allow for causal conclusions, I develop a research design that allows to comply with the refined framework and to draw better conclusions on causality than upper echelons researchers so far have been able to provide. Thereby, this dissertation strives to conceptually contribute to upper echelons theory and to the methodology of future research on that matter.

***Second research objective: Reassessment of how tenure and age affect strategic change.***

To underpin the relevance of the suggested research design and to provide evidence for the importance of designing studies such that conclusions on causality can be drawn I apply this research design to apparently well-explored relations, namely to the associations between executives' organizational and industrial tenure and age on the one and the amount of strategic change on the other hand. Upper echelons researchers for example argued and found that organizational tenure is negatively associated with strategic change (Datta et al., 2003; Finkelstein & Hambrick, 1990; Wiersema & Bantel, 1992), because actors increasingly commit to the values (Schmidt & Posner, 1983; Wiersema & Bantel, 1992) and status quo of their companies (Hambrick, Geletkanycz, & Fredrickson, 1993; Staw & Ross, 1980). Nevertheless, upper echelons researchers and others also argued that strategically agile firms might more often replace their executives and more often hire executives from outside the company (Finkelstein & Hambrick, 1990; Pettigrew, 1992; Zhang & Rajagopalan, 2003). Because upper echelons researchers were not able to establish causality on this relation (Finkelstein & Hambrick, 1990; Finkelstein et al., 2009; Pettigrew, 1992) no conclusions which explanation or whether both possible explanations hold true can be drawn. Moreover, researchers more interested in succession consequences argue that organizational tenure has in addition to the abovementioned aspects also aspects that positively affect strategic change like internal knowledge, network and acceptance (Cao, Maruping, & Takeuchi, 2006; Karaevli, 2007; Zhang & Rajagopalan, 2010). Thereby, these authors explain why they find ambiguous

performance consequences of hiring inside or outside executives. Because, upper echelons researchers consistently find negative associations between organizational tenure and strategic change (see Finkelstein et al., 2009), although succession consequence researchers suggest ambiguous effects of organizational tenure on successful strategic change (Karaevli, 2007; Shen & Cannella, 2002; Zhang & Rajagopalan, 2010), and because an alternative explanation for the negative associations between organizational tenure and strategic change exists (Finkelstein & Hambrick, 1990; Pettigrew, 1992; Zhang & Rajagopalan, 2003), I use this relation as example to apply the suggested study design. In addition, I also tested the effects industrial tenure and age have on strategic change, because researchers suggest that these characteristics have similar effects on strategic change (Datta et al., 2003; Finkelstein & Hambrick, 1990; Wiersema & Bantel, 1992) and because they are related to organizational tenure. Building on various arguments researchers provided on the effects organizational- and industrial tenure and age might have on strategic change, I propose and empirically find that relative organizational and industrial tenure and age of new CEOs compared to their predecessors positively affect post-succession strategic change. Being more conclusive on causal effects, these findings, which are counterintuitive to existing upper echelons research but not contradictory, not only contribute to the understanding of these characteristics' effects on strategic change, but also highlight the importance of designing studies such that they allow for conclusions on causality and the relevance of the applied and previously developed study design.

***Third research objective:*** *Differentiation between different effects characteristics might have on strategic change.*

Upper echelons researchers propose that some characteristics have effects on types of strategic actions (e.g., Barker & Mueller, 2002; Carpenter & Fredrickson, 2001; Strandholm et al., 2004) and that others affect the amount of strategic actions (e.g., Datta et al., 2003;

Finkelstein & Hambrick, 1990; Wiersema & Bantel, 1992). I explicitly differentiate between such effects, develop implications for hypothesis development and empirical testing, and test characteristics that are deemed to have different effects within the same study. I propose that characteristics that indicate preferences for certain strategies yield a high amount of strategic change when new CEOs characteristics' are different from those of their predecessors in absolute terms. Thus, for example CEOs who have much more or much less experience in market oriented functions than their predecessors will change (increase or decrease) marketing or R&D expenditures and therefore generate strategic change. In turn, characteristics that are deemed to have effects on the amount of strategic change should yield an increase in strategic change when the new CEO possesses these characteristics to a larger extend in absolute or in relative terms. Accordingly, I develop hypotheses for functional- and educational background characteristics and test these hypotheses empirically, while complying with the research design I develop under the first research objective. My findings underpin that different characteristics have different types of effects. Moreover, for the first time linking characteristics that are deemed to indicate strategic preferences to strategic change and not only to a static strategy observation, supports the idea that such characteristics have causal effects on strategic actions.

### **3 Research Approach**

This dissertation consists of a conceptual part and two empirical parts. For the conceptual part in particular but also for hypotheses development in the empirical parts, I rely on basic assumptions that underlie and constitute upper echelons theory. First, managers matter and significantly influence the strategies organizations have and implement (Child, 1972; Hambrick & Mason, 1984). Second, managers are bounded rationale and do not act on the



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basis of objective situations but on the basis of their subjective interpretations of the situations (Cyert & March, 1963; Hambrick & Mason, 1984; March & Simon, 1958). Third, differences of the objective situation and the subjective interpretation are a function of an executives' values, preferences, and beliefs (Hambrick & Mason, 1984). Finally, values, preferences, and beliefs are indicated by observable characteristics (Hambrick & Mason, 1984). However, alternative views that strategies, contextual forces as well as internal challenges affect the selection of executives (e.g., Gupta, 1984; Guthrie & Datta, 1997; Rajagopalan & Datta, 1996) are neither negated nor ignored. Following upper echelons researchers who acknowledge such reverse causal effects (Carpenter et al., 2004; Finkelstein et al., 2009; Hambrick, 2007) I comprehend these views as coexisting rather than as alternative explanations of organizational behaviors. Therefore, I include the reverse causal effects explicitly in the upper echelons framework in order to provide the theoretical basis for taking account of these effects in empirical research. Nevertheless, being particularly interested in contributing to upper echelons research and to understanding the effects managerial characteristics have on strategic actions, I argue from an upper echelons theory perspective, both for refining the upper echelons framework, as well as for deriving hypotheses in the empirical parts of this dissertation.

In order to generate comparable empirical results with prior research, while adopting a new research design, I use data and measures largely consistent with prior upper echelons research (e.g., Datta et al., 2003; Finkelstein & Hambrick, 1990; Wiersema & Bantel, 1992). I use US archival data and focus on S&P 500 companies. The final sample consists of 100 companies that fulfilled two criteria. First, in early 2010 they had CEOs that were in position for at least three years and that had predecessors. Second, company data were available for the six years surrounding the succession event. I collected company data from the following sources. All data that were available in Datastream and required for the analyses were downloaded

automatically. Other information like turnovers in the top management team or industry information were gathered manually from 10K- and Proxy Statements and from Hoover's database.

While the sample and the dependent variable remains the same for research objectives two and three, the managerial characteristics analyzed for the two objectives differ. I analyzed organizational- and industrial tenure and age for research objective two and focused on characteristics like functional background, type and level of education for the third research objective. I collected biographical data from Marquis Who's Who, company Web sites, and press articles archived in LexisNexis. The specific measures applied are described in detail in the respective sections.

#### **4 Outline of Dissertation**

This dissertation is structured in 5 chapters beginning with this overview comprising the research motivation, the research objectives and approaches, as well as this outline. Chapters II, III and IV represent three studies that although being largely self-contained build theory- and methodology-wise on one-another. The studies address the three research objectives as outlined above. In Chapter II, I develop a refined upper echelons framework and derive research design criteria that would allow upper echelons researchers to comply with this refined framework and to largely diminish biases from reverse causal effects. In Chapter III this research design is applied to apparently well-explored relations, namely to the associations between executives' tenure and age and strategic change. In Chapter IV, I enlarge the perspective to other characteristics particularly theorizing upon different types of effects different characteristics might have on strategic actions. Finally, I recap the motivation of the

dissertation, discuss its overall contributions and limitations, suggest paths for future research, and summarize implications for practitioners in Chapter V.



## **II. One-way Road or Roundabout: Taking into Account**

### **Reverse Causality in Upper Echelons Theory**

In the following chapter I discuss the most prevalent criticism upper echelons research faces, namely not being conclusive on causality. The upper echelons framework describes the mechanism how executives' characteristics influence strategic decisions and ultimately strategic organizational outcomes. Thereby the framework ignores reverse effects between strategies and characteristics as well as the factor of time. In consequence, the upper echelons framework has triggered predominantly cross-sectional research designs that provide findings on associations between characteristics and strategic outcomes but that do not allow to draw conclusions on causality.

In this chapter, I conceptually refine the framework, particularly taking into account time and reverse causal effects. From this refined framework I derive six research design criteria that better allow for drawing conclusions on causality from quantitative studies than prior research provided.

With this chapter I attempt to contribute to upper echelons theory and methodology. The refined framework shall integrate the reverse dynamism between executives' characteristics and firms' strategies and thereby provide a more holistic picture than upper echelons theory provided so far. Providing research design criteria shall illustrate how quantitative research might comply with the refined framework and thereby generate findings that are better interpretable with regards to causality than it has been the case so far. I presented the essence of this chapter at the second workshop of the European Institute for Advanced Studies in Management on top management teams and business strategy research in Istanbul, Turkey on April 1<sup>st</sup> 2011.

## 1 Introduction

Researchers in recent decades have shown a great deal of interest in top managers and their impact on corporate strategy and performance (Carpenter et al., 2004; Finkelstein et al., 2009; Hambrick, 2007). Hambrick and Mason's (1984) upper echelons theory is a central contribution to this research. They explain "how upper echelons' characteristics may become reflected in organizational outcomes" (Hambrick & Mason, 1984: 194) and propose various characteristics that might effect strategic choices. Building on the concept that strategies are the result of managerial decisions (Child, 1972); strategic choices, in the sense of upper echelons theory, are the decisions managers make as well as strategic organizational outcomes. Accordingly, a lot of studies contain empirical evidence of the association between managers' characteristics and firms' strategic outcomes, such as specific strategies or the amount of general strategic flexibility (Carpenter et al., 2004; Finkelstein et al., 2009; Hambrick, 2007). However, upper echelons researchers criticize that the link between managers' characteristics and firms' strategic outcomes has not been disentangled from the opposite causality (e.g., Carpenter et al., 2004; Finkelstein et al., 2009; Hambrick, 2007). Their criticism builds on the alternative perspective that firms' strategies influence the selections of certain types of managers (e.g., Gupta, 1984; Guthrie & Datta, 1997; Zhang & Rajagopalan, 2003). Acknowledging the two reverse causalities, Finkelstein et al. (2009:115) call "for an integrative theory that can model the dynamic nature of the covariation between executive and organizational characteristics" to overcome limitations to drawing conclusions on causal effects.

Two examples—organizational tenure and international experience—illustrate the difficulty in drawing such conclusions. As for organizational tenure, some researchers find that CEO tenure or average top management team tenure is positively associated with strategic

persistence and negatively with strategic change (e.g., Datta et al., 2003; Finkelstein & Hambrick, 1990; Wiersema & Bantel, 1992). Based on upper echelons theory, they conclude that organizations led by managers with short tenures show more strategic flexibility. However, due to cross-sectional research designs, these researchers cannot conclude whether shorter tenured managers really lead to more strategic changes or whether strategically flexible companies select more managers from outside of the organization (Finkelstein & Hambrick, 1990; Pettigrew, 1992). Accordingly, the empirical findings of Zhang & Rajagopalan (2003) show that prior strategic persistence is negatively associated with the selection of an outsider CEO.

The relation between firms' international exposure and the international experience of their top management teams or their CEOs serves as second example. Several researchers provide evidence that an association exists and interpret this as evidence for the impact of the international experience of the executives on firm internationalization (e.g., Carpenter & Fredrickson, 2001; Sambharya, 1996; Tihanyi et al., 2000). However, as most authors acknowledge, they were not able to establish causality in these studies (Carpenter & Fredrickson, 2001; Sambharya, 1996; Tihanyi et al., 2000). Hence, the measured association might also (partly) reflect the reverse effect, namely that firms' international exposure positively influences the selection of internationally experienced managers. Not surprisingly, other authors report similar results but argue from the reverse causal perspective that firms that focus on internationalization select more nationally diverse top management teams (Greve, Nielsen, & Ruigrok, 2009).

Both examples show that the researchers' inability to disentangle the two causalities limits their ability to be conclusive on the effects that managerial characteristics have on strategies, which is the point behind the theory (see Finkelstein et al., 2009; Hambrick, 2007; Hambrick

& Mason, 1984). Moreover, this problem might be severe because three theoretical arguments suggest that matching new managers to already pursued strategies might be the rule rather than the exception.

First, the executive selection literature and related empirical evidence suggests that matching occurs widely. Executive selection researchers propose that companies should match managers to strategies (Gupta, 1986; Judge & Ferris, 1992; Wright & Snell, 1998), because they deem that a fit between managerial characteristics and strategies yields superior performance (Gupta, 1984, 1992; Miles & Snow, 1978). Upper echelons researchers empirically underpin this performance implication (e.g., Carpenter, Sanders, & Gregersen, 2001; Geletkanycz & Hambrick, 1997; Roth, 1995). Moreover, supporting the proposition that matching managers to strategies occurs, Guthrie & Datta (1997) show that advertising intensive firms tend to select CEOs with prior functional experience in output-oriented activities such as marketing, sales, or product R&D. Accordingly, companies with more efficiency focused strategies seem to have managers with prior experiences in internal operation functions (Strandholm et al., 2004).

Second, incumbent managers tend to develop successors with similar characteristics. Zajac and Westphal (1996) consolidate arguments from different research streams on why incumbent managers might have the tendency to select, suggest, or even develop successors with similar characteristics or cognitive profiles. Researchers interested in performance evaluation and interpersonal attraction suggest that demographic similarities between superiors and subordinates or between colleagues enhance interpersonal attraction and lead to higher evaluation ratings (e.g., Byrne, Clore, & Worchel, 1966; Judge & Ferris, 1993; Tsui & O'Reilly, 1989). Similarly, scholars in the field of CEO successions argue that incumbent CEOs seek to preserve their legacy and their lifework by developing successors with similar preferences, values, and beliefs because they expect such successors to continue their



strategies (Sonnenfeld, 1986; Vancil, 1987). Empirical findings underpin that such a development of heirs apparent occurs (Bigley & Wiersema, 2002; Zajac & Westphal, 1996) and that CEOs often prefer successors who resemble themselves (Hambrick et al., 1993). However, according to upper echelons theory, incumbent managers influence strategies according to their values, preferences, and beliefs such that their characteristics become reflected in strategic choices (Hambrick & Mason, 1984). Consequently, successors' characteristics should not only resemble those of their predecessors but also fit with the strategies the predecessors have implemented.

Third, managers might self-select themselves to companies that have managers with similar characteristics (Beckman & Burton, 2011) or that have strategies that fit with their characteristics (Finkelstein et al., 2009). For example, a manager who has pursued an international career might actively seek to work for an international company, while someone who has never worked abroad might not consider the international exposure of an organization as a source of attractiveness (Larsen, 2004).

All three arguments on why firms' strategies might be predictive of managerial characteristics put forward rather conscious and objective matching processes of observable background characteristics and strategies. In contrast, according to upper echelons theory the reverse effects that characteristics might have on strategies are rather unconscious and indirect. Managers' characteristics only vaguely indicate their frames of reference (Hambrick & Mason, 1984; B. S. Lawrence, 1997; Markóczy, 1997) that upper echelons theorists deem to serve as unconscious filters for information that then might lead to biased decisions (Hambrick & Mason, 1984). Moreover, the information filtering might be moderated by executive job demands that are defined "as the degree to which a given executive experiences his or her job as difficult or challenging" (Hambrick, Finkelstein, & Mooney, 2005: 474). In

addition, intervening processes between filtering information and implementing decisions might be moderated by power (Child, 1972; Finkelstein, 1992), and by managerial discretion (Hambrick & Finkelstein, 1987). Thus, if reverse causality exists, then the uncertainty of the construct validity with regards to frames of reference and the number and nature of processes through which characteristics might become reflected in strategic outcomes further limit the ability to draw valid conclusions on the effects that characteristics have on strategies. Because the upper echelons theory is an explanation for these effects (Hambrick & Mason, 1984), the aforementioned arguments have major implications for its research. Failing to disentangle whether firms' strategies are the results or the antecedents of managers' characteristics might lead not only to an over- or underestimation of the relations, but even to completely misleading conclusions. Hence, being able to take into account reverse causal effects in upper echelons research is necessary to provide the insights that Hambrick and Mason (1984) envisioned would be uncovered. As these authors already suspected in their seminal paper, upper echelons researchers so far have not been able to cope with this issue (see Carpenter et al., 2004; Finkelstein et al., 2009; Hambrick, 2007). The omission in the current framework of the timely separated reverse causal effects between characteristics and strategies (Finkelstein et al., 2009) and the ensuing dominance of cross-sectional study designs (Beckman & Burton, 2011; Hambrick, 2007) are the major reasons for this shortcoming. Consequently, Finkelstein et al. (2009) suggest to create an integrative framework that can deal with the reverse effects between matching managers to strategies and changing strategies to managers' preferences. Similarly, suggestions exist that researchers should integrate time and change into their research models (Beckman & Burton, 2011) and that "a high priority going forward" should be designing upper echelons research in a way that it can draw conclusions on causality (Finkelstein et al., 2009: 115).

In this study, I attempt to contribute to both needs. I suggest a conceptual refinement of the original framework that explicitly includes both the aforementioned reverse effects, particularly modeling the effects of change in characteristics and strategies over time. Subsequently, I derive criteria from the refined framework on how researchers should design future quantitative upper echelons studies to take into account reverse causality and to better understand the effect of managers' characteristics on strategic outcomes. Even though researchers applying quantitative and archival data-based research designs will unlikely to become able to confirm causality, I believe that many limitations can be avoided or reduced by applying the research design I outline in this study. Formulating explicit study design criteria contributes to the methodology of upper echelons research and thereby hopefully to future findings from it.

## **2 Development of an Extended Upper Echelons Framework**

The basis for upper echelons theory is two fundamental concepts: bounded rationality that implies managers encounter more information than they are able to process objectively (see also Cyert & March, 1963; March & Simon, 1958), and the view that strategic outcomes are the result of managers' decisions (Child, 1972; Hambrick & Mason, 1984). The definition of strategic choices comprises "choices made formally and informally, indecisions as well as decisions, major administrative choices (e.g., reward, systems and structure) as well as the domain and competitive choices more generally associated with the term 'strategy'" (Hambrick & Mason, 1984: 195). Upper echelons theory bridges these concepts by proposing that managers, due to their limited ability to process all information objectively, unconsciously filter information through their frames of reference. Frames of reference are

sets of cognitive abilities, values, beliefs, experiences and demographic properties (Hambrick & Mason, 1984). These frames of reference direct the managers' attention towards certain information, influence the selective perception even of information within their attention areas, and affect the interpretation of such information (Hambrick & Mason, 1984). Hambrick and Mason (1984) encourage researchers to approximate frames of reference with observable demographic characteristics such as age, tenure, and functional and educational backgrounds. Nevertheless, these remain muddled indicators for the concept of frames of reference (Hambrick & Mason, 1984; B. S. Lawrence, 1997; Markóczy, 1997). The authors further suggest that the filtered information provides the basis for strategic decision making (Hambrick & Mason, 1984). Consequently, the managers' frames of reference, indicated by managers' characteristics, become reflected in their strategic choices and ultimately in firms' strategic outcomes (Hambrick & Mason, 1984).

Over time, several moderator variables that influence the impact from managerial characteristics on strategic choices have been introduced to the theory, namely executive job demands (Hambrick et al., 2005), managerial discretion (Hambrick & Finkelstein, 1987), and power (Finkelstein, 1992). Moreover, new demographic characteristics, such as international experience (e.g., Reuber & Fischer, 1997; Sambharya, 1996; Tihanyi et al., 2000), and more psychological characteristics (e.g., Chatterjee & Hambrick, 2007; Peterson, Smith, Martorana, & Owens, 2003; Sosik, Gentry, & Chun, 2011) have been added to the discourse. Even though the framework has been successfully applied in management research for over 25 years (Furrer, Thomas, & Goussevskaia, 2008), its shortcoming is that it lacks the ability to model "the dynamic nature of the covariation between executive and organizational characteristics" (Finkelstein et al., 2009: 115). This covariation refers to reverse causal effects that, as outlined earlier, limit the researchers' ability to draw conclusions on causality. Moreover, Finkelstein et al. (2009) suggest that this covariation is not static but dynamic over

time. In consequence, disentangling both effects should be methodologically feasible if I consider the time component (see also Beckman & Burton, 2011). However, the existing framework ignores the time component and—in consequence—triggers predominantly cross-sectional study designs (Beckman & Burton, 2011; Hambrick, 2007). Both, the theoretical shortcoming as well as its consequence on study designs are the major reasons why upper echelons research still has difficulties in coping with reverse causality (Finkelstein et al., 2009; Hambrick, 2007). Therefore, in the following I modify the upper echelons framework and describe how characteristics might affect strategies over time. Subsequently, I extend this framework and include reverse causal effects, as well as other effects that affect the dynamism between characteristics and strategies.

## **2.1 Introducing Time to the Upper Echelons Framework**

As mentioned earlier, building on the idea that strategic choices form firm strategies (Child, 1972; Hambrick & Mason, 1984), the concepts of strategic choices and strategic organizational outcomes have been treated as interchangeable in upper echelons research. Accordingly, in an overview of the literature, Carpenter et al. (2004) modify the framework and replace “strategic choices“ with “strategic organizational outcomes“ (Carpenter et al., 2004: 760). However, from my perspective, this modification neglects the importance of time in this process and I believe that both steps should be taken into account explicitly: upper echelons’ characteristics influence strategic decisions, and these decisions lead through their implementation to lagged strategic organizational outcomes. Because all strategic decisions imply either the change in or the maintenance of an existing strategy, researchers need to observe strategic development over time to be able to draw conclusions on the types of decisions made. In turn, a snapshot of a strategy does not allow for such conclusions and thus

does not allow for an interpretation of the impact of upper echelons' characteristics on strategic decisions. For example, a certain level of international activity at one point in time does not indicate whether this level has been persistent for some time or whether it is the result of a prior internationalization, or a prior de-internationalization process. Hence, without being aware of the change in internationalization, no conclusions on what kind of decisions preceded this point in time can be drawn. Thus, without being able to approximate the decisions, no conclusions on how managers' characteristics influenced these decisions can be drawn either. Because upper echelons theory has been developed to enhance the understanding of the effect characteristics have on strategic decisions and ultimately on strategic outcomes (Hambrick & Mason, 1984), I suggest modifying the framework so that it models the effect from frames of reference on strategic decisions between the decision time and a point in the future.

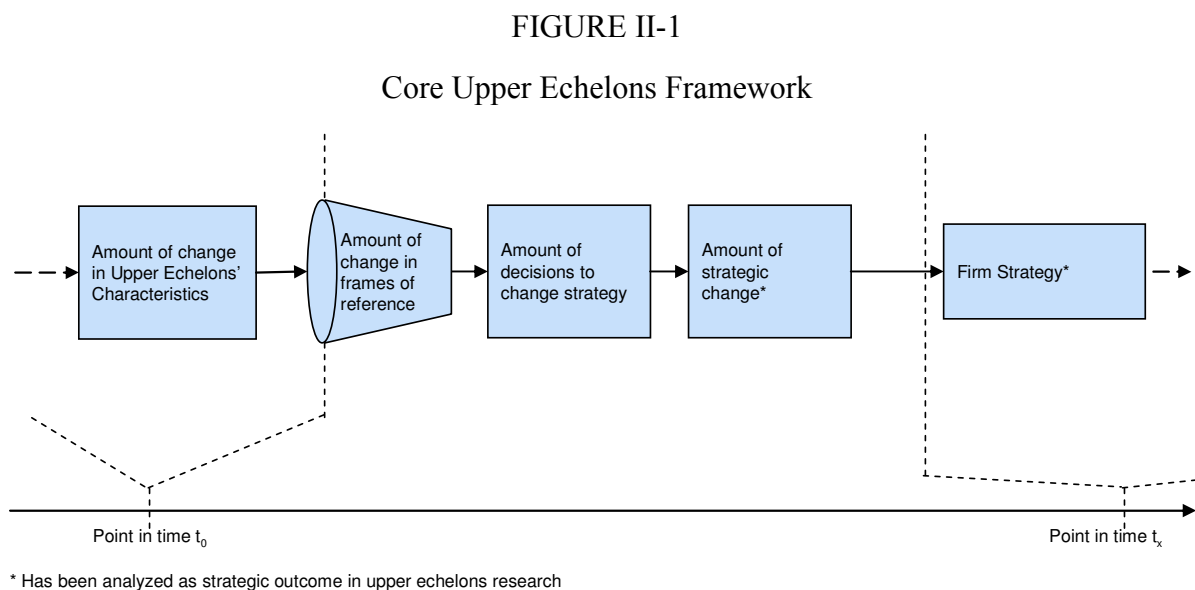
A further modification that I propose is also grounded in the suggestion that characteristics become reflected in strategic outcomes (Finkelstein et al., 2009; Hambrick & Mason, 1984). As a consequence of this suggestion, over the course of an executive's tenure in office, the pursued strategy and the characteristically preferred strategy should converge (Hambrick & Fukutomi, 1991). Accordingly, researchers interested in the seasons of CEOs' tenures suggest that, typically during their first years in office, CEOs initiate change according to their individual frames of reference. In a later phase, after a short period of experimentation, only some change happens that still reflects their frames of reference. In the following last phase only few and rather externally motivated change happens (Finkelstein et al., 2009; Hambrick & Fukutomi, 1991). Correspondingly, researchers empirically find that tenure in office has a negative association with strategic change (Abebe, 2009; Boeker, 1997b). Two conclusions can be drawn from these considerations: the longer a manager is in office the less change happens and the less change has an association with his or her characteristics, because the

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existing strategy already reflects his or her characteristics to a certain extent (Hambrick & Fukutomi, 1991). This time line implies that, depending on the tenure in office, characteristics have an association with the strategy but cannot be predictive of strategic change. The theory further suggests that similar characteristics indicate similar frames of reference and thereby yield similar strategic choices (Hambrick, 2005; Markóczy, 1997). Actually, only this assumption allows for the use of characteristics—no matter whether they are demographic or psychological—as indicators of frames of reference and to draw conclusions from quantitatively measured associations between characteristics and strategic outcomes. Hence, this assumption is fundamental to pursuing any quantitative investigation of upper echelons theory. However, if the premise that similar characteristics indicate similar preferences, values, and beliefs holds true, and if pursued strategies and preferred strategies converge over time, then only changing characteristics might indicate changing frames of reference that might precede strategic change. In turn, a snapshot of characteristics cannot explain strategic change, but might only be associated to a snapshot of strategy as well. International experience can again serve as an illustration. If a CEO or a top management team for a certain period of time has a certain level of international experience, then why should an internationalization process starting at one point in time be the result of this stable level of international experience. If the level of international experience among the top management team was unchanged for a long time or was even higher in earlier times, according to upper echelons theory, the level of the firm's international exposure should already reflect this characteristic. Only if the international experience in a relevant executive position or in the top management team increases, it can be expected that the frames of reference will change such that internationalization becomes a preferred strategy. Then, it can also be expected that the international exposure of the firm will increase over time. Only in this case one could argue that the internationalization process might be the result of the (new) level of international experience among the executives. As a consequence of these considerations, I

suggest that the upper echelons theory should make explicit that changing characteristics can be predictive of lagged strategic change.

In summary, I suggest that the core of the upper echelons framework should formulate that change in upper echelons' characteristics indicate the amount of change in managers' frames of reference, which might be a predictor of the extent to which the managers decide to change current strategies. This decision leads to lagged measurable strategic change and thus to a new observable strategy. Figure II-1 illustrates this core framework. This framework conceptually disentangles the focal causal relation from the reverse effect that prior strategy might have on the selection of managers by explicitly including change in characteristics and lagged strategic change.



As the strategy in one point in time might lead to characteristics change, over time both causalities seem to be sequentially related. Therefore, even though it is not the focus of the upper echelons theory (Hambrick & Mason, 1984), I suggest the framework should include the reverse effects explicitly to avoid drawing misleading conclusions.



## 2.2 Enhancing the Upper Echelons Framework with the Reinforcing Spiral

Finkelstein et al. (2009: 115) suggest a sequential interrelation between characteristics and strategies and propose that “over time a reinforcing spiral probably occurs: managers select strategies that mirror their beliefs and preferences; successors are selected according to how much their qualities suit the strategy“. Therefore, the upper echelons framework should model that strategies affect the selection of managers.

However, this framework of reinforcing effects might not describe reality well, because it implies that managers are always matched to strategies, which they continue to pursue.

Hence, established companies should have stable strategies and managerial characteristics, and any increase in strategic flexibility or mismatch in managers contradicts the theory.

Because I do not have an empirical indication that organizations develop towards permanent strategic stability, the concept of the reinforcing spiral might not be sufficient. Therefore, a framework that describes the reverse causal effects between managerial characteristics and firm strategies should also describe how it might be compatible with increasing strategic flexibility, with mismatching of managers to strategies, and thus with constant instability.

Several factors, might occasionally lead to mismatching managers to strategies or to strategic change that does not reflect the managers' characteristics. Two factors can be regarded as antecedents of mismatching managers to current strategies: First, external factors like changes in regulation, competition, and resource scarcity or internal challenges threatening current performance might induce boards to replace existing managers with managers they deem to be more knowledgeable about the internal or external challenges (Beckman & Burton, 2011). According to upper echelons theory, these new managers then alter the strategy according to their characteristics. Second, job market constraints, which could be influenced by internal or external challenges but could also occur independently, might require boards to select

different managers that do not (fully) match current strategies even if they are willing to select the same types of managers (Beckman & Burton, 2011).

Furthermore, four effects might exist that lead managers to alter strategies into directions not reflecting their characteristics. Such effects might moderate the importance of the frame of reference for information processing or the implementation of strategic decisions. First, executive job demands influence the degree to which information processing is biased.

Hambrick et al. (2005) suggest that the higher the job demands, the more managers are forced to filter information and thus the more biased their perceptions of reality are (Hambrick, 2007; Hambrick et al., 2005). Hence, they suggest that, the higher the perceived complexity the more managers' actions are reflected by their frames of reference; and, thus, the higher is the degree to which they are forced to take mental shortcuts that result in biased decisions (Hambrick et al., 2005).

Second, managers might perceive or explicitly receive mandates to pursue certain actions that might not reflect their personal preferences. Hambrick and Mason (1984) argue that, when managers receive mandates to change these drive the managers to initiate strategic change rather than their characteristics. Hence, the stronger the boards or other stakeholders insist on certain strategic actions, the less relevant are the frames of reference of the managers.

Therefore, mandates to pursue certain actions—regardless of whether they are explicit or perceived by newly selected or incumbent managers—might moderate the importance of frames of reference.

Third, Hambrick and Finkelstein (1987) introduce the concept of managerial discretion and suggest that, only if managers have managerial discretion, their characteristics can impact the strategy. In other words, internal or external challenges might force incumbent managers to take new strategic paths that do not reflect their characteristics. For example, if a government

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forces power production companies to shut down all nuclear power plants, the managers of such companies—even though they might have spent their whole life with nuclear power production—are forced to explore new energy sources and thus new strategies for their companies. Accordingly, I suggest that the upper echelons framework should model that managerial discretion moderates the degree to which frames of reference bias information and strategic decisions. In contrast to the original framework, which suggests a direct link between the objective situation and strategic choices (Hambrick & Mason, 1984) this moderating link is compatible with the idea that firms' strategic outcomes are the result of strategic decisions (Child, 1972; Hambrick & Mason, 1984) that are based on biased information and thus on subjective situations (Hambrick & Mason, 1984). The fact that some of these decisions might be made with little or no freedom is not contradictory to this view. Furthermore, only if managers have “some freedom of manoeuvre“ (Child, 1972: 14), they can implement their decisions and create strategic changes. Hence, even if contextual factors do not force managers to make certain decisions, contextual factors might still impede the implementation of their decisions.

The fourth effect for why strategies might change into directions not reflecting a manager's characteristics might be their individual power. Whereas the degree of managerial discretion is routed outside the top management team in contextual factors or the structural design (Child, 1972; Hambrick, 2007; Hambrick & Finkelstein, 1987), the concept of power is routed inside the top management team. However, its effects are similar. Characteristics of managers that do not possess the required power to implement their decisions will not impact the strategies (Child, 1972; Finkelstein, 1992). Because managers who know that they lack power might for the sake of uselessness not make decisions to change strategies into their preferred direction beforehand, I propose that, like managerial discretion, power also

influences either the importance of the frames of reference for decision making or the implementation of strategic decisions.

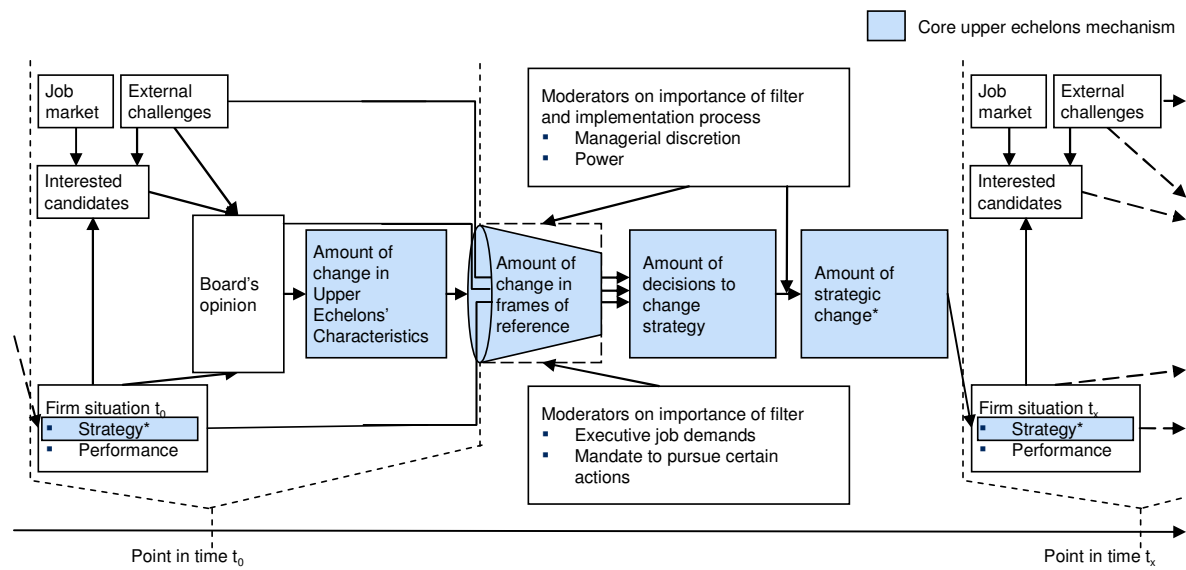
Therefore, to reflect the reinforcing spiral and the aforementioned effects, I suggest that the upper echelons framework should make explicit that upper echelons characteristics might change without being triggered by a prior change in strategies, because internal and external challenges might influence boards to select new types of managers or because job market constraints might restrain boards to select the same types of managers. In addition, strategies might change without being triggered by a prior change in characteristics, because internal as well as external challenges might force managers—although they fit to the current strategies—to change the strategies because the situations do not leave them any choice or because boards or other stakeholders force them to do so. Internal and external challenges can be defined as all factors that either force managers to take strategic actions that do not fit their characteristics or that force boards to select managers that do not fit the current strategies. Moreover, the degree to which managers' actions reflect their assumed preferences always depends on the executive job demands and on power.

Figure II-2 illustrates the framework as just outlined. The shaded parts describe the core of the upper echelons framework that suggests that changes in managers' characteristics indicate changes in frames of reference that lead to decisions to change strategies. These in turn lead to lagged strategic changes and ultimately to new strategies. Factors that influence the importance of frames of reference for decision making and factors that affect the implementation of decisions moderate these processes and thus might explain strategic change that does not reflect the characteristics. The links between the board's opinion, external challenges, and the internal situation and the moderators have been omitted for simplicity reasons. The reinforcing spiral, as suggested by Finkelstein et al. (2009), is then that the new strategy that should reflect the managers' characteristics should not yield any further change

in upper echelons characteristics, given that the performance is satisfying. Moreover, the links between firm situations, interested candidates, and external challenges and board's opinions illustrate mechanisms that explain when boards decide not to match new managers to current strategies. Hence, this framework can explain permanent strategic stability as well as strategic change that can happen without being triggered by a change in characteristics, and change in upper echelons' characteristics that can happen without being triggered by strategic change. Both however, if not triggered by the other, are then deemed to entail the change in the other. Being more precise on the focal causal links and on time and adding the reverse causality to the framework, I believe this framework provides a more adequate theoretical lens that allows me to derive a study design that is better suited to draw conclusions on causality.

FIGURE II-1

## Conceptually Refined Upper Echelons Framework



\* Has been analyzed as strategic outcome in upper echelons research

### **3 Derivation of Research Design Criteria**

The major criticism about upper echelons research apart from the missing “integrative theory” (Finkelstein et al., 2009: 115) is the widespread use of strict cross-sectional research designs (Beckman & Burton, 2011; Hambrick, 2007) that hinder researchers from disentangling the reverse causal relations embedded in the theory (see also Bono & McNamara, 2011). As a result, researchers have not been able to provide the insights into the causal effects that characteristics have on strategies scholars on upper echelons theory aim to uncover (Hambrick & Mason, 1984). Based on my framework, I derive six research design criteria that quantitative research should fulfill to better understand the effect that managers’ frames of reference have on strategic outcomes. Next, I briefly discuss which biases occur if researchers ignore the individual design criteria, followed by an overview to what extent the criteria has been applied in prior research.

#### **3.1 Criteria for Designing Quantitative Archival Data-Based Studies**

According to Hambrick and Mason (1984), managerial characteristics indicate frames of reference that might influence strategic decisions and that, in turn, should lead to measurable strategic changes (or continuity). Because it takes time for a decision to become recognizable as strategic change, (1) a time lag between the observation of the managers’ characteristics and firms’ strategies is an essential design criterion to draw any conclusions on causality (Hambrick, 2007).

In order to link lagged strategic change to characteristics, measured at the beginning of the observation period, the characteristics should remain (2) stable during the time lag. Otherwise,

the observed strategic change might also be due to a change in the characteristics during the observation period.

Furthermore, as argued in the prior section, snapshots of strategies do not allow for conclusions on strategic decisions made during prior periods. Therefore, a single lagged strategy observation cannot serve as a dependent variable for background characteristics either. Hence, to draw a conclusion on a preceding decision, (3) researchers should either include the prior strategic situation as a control variable (Hambrick, 2007) or use the difference between the two observations as the dependent variable. Thus, instead of analyzing the level of certain expenses like R&D or advertising or of other strategic measures like international exposure or leverage, researchers should use the increases of such strategic indicators as objects of their analyses.

As argued earlier, according to upper echelons theory similar characteristics indicate similar frames of reference (Hambrick, 2005). Moreover, strategies and characteristically preferred strategies converge over time (Finkelstein et al., 2009; Hambrick & Fukutomi, 1991; Hambrick & Mason, 1984), unless they already fit to each other due to matching managers to pursued strategies. Hence, no matter whether managers are matched to pursued strategies or whether they alter the strategies towards their preferences, in the long run strategies fit to characteristics. Therefore, characteristics cannot be predictive of strategic changes but are only reflected in strategies. In turn, changes in characteristics might entail strategic changes. In consequence, I suggest (4) the analysis of change in characteristics as antecedent of strategic change.

Similarly, researchers interested in the seasons of CEOs' tenures suggest that in the first years of CEOs' executive tenures, actions are strongly consistent with their preferences, values, and beliefs followed by a short period of experimentation. After these periods, only incremental

strategic change tends to happen, increasingly motivated by outside interests (Finkelstein et al., 2009; Hambrick & Fukutomi, 1991). Accordingly, researchers empirically find that tenure in office has a negative association with strategic change (Abebe, 2009; Boeker, 1997b; Gabarro, 1987). This association implies that, in order to capture a large amount of the effect that changes in characteristics have on strategic changes, (5) the measurement period of strategic change should start with the change in characteristics and thus when the new executive takes office for all cases in the sample.

Finally, scholars that focus on the reverse causal effect suggest that strategies are predictive of the selection of managers (e.g., Gupta, 1984; Guthrie & Datta, 1997; Zhang & Rajagopalan, 2003). In consequence, strategic change might impact the selection of managers. In addition, prior strategic change might influence the following strategic change. For example, if a company increases its level of R&D expenses due to external challenges, this might lead to a selection of a more R&D savvy manager in the future. If such an executive does not lead to any further increase in R&D expenses, then this observation does not contradict the general hypothesis that augmenting the R&D aptitude of the managerial team leads to higher R&D intensity. Rather this observation indicates that the predecessor, although not being particularly R&D savvy, augmented R&D expenses and that the new manager was matched to the new strategy and consequently does not resemble his or her predecessor. Therefore, in addition to measuring (3) the lagged strategic change—either operationalized as the difference in strategic situations between two observations, or as the lagged strategic situation while controlling for the situation at the point in time the characteristics change—studies should (6) control for prior strategic change to avoid an omitted variable bias (see Iyengar & Zampelli, 2009).

In conclusion, in order to better evaluate the impact of frames of reference on strategic outcomes, researchers should measure (3) strategic change (the amount of general strategic



change or the change of specific strategic indicators) in a period with (2) stable managerial characteristics starting (5) directly (1) after a measured (4) change in managerial characteristics. Moreover, researchers should (6) control for strategic change prior to the change in managerial characteristics. Having derived these six research design criteria from the previously developed framework, in the following I highlight the various biases their application can help to avoid and to what extent they have been applied in prior research.

### **3.2 Potential Biases from Ignoring the Research Design Criteria**

Ignoring the six research design criteria limits the ability to draw conclusions on causality, leads to underestimated relations, and entails omitted variable biases. Studies in which researchers do not observe the (1) lagged (3) strategic change are cross-sectional by nature and thus do not allow for conclusions on causality (Bono & McNamara, 2011; Finkelstein et al., 2009; Hambrick, 2007).

In addition, researchers (2) that do not ensure the stability of characteristics during the measurement period cannot establish a link between the characteristics at the beginning of an observation period to the strategic change observed at the end.

Similarly, scholars that (4) link absolute characteristics to strategic change cannot be conclusive on whether the respective change really fits the hypothesized direction or not, because they do not observe whether the strategic change happened after an increase, decrease or after a period of stability in the characteristics. Moreover, researchers analyzing absolute characteristics implicitly compare the managers across the firms in the sample. However, differences among individuals might not be symmetric across different environments but

could depend on their specific environment (Belliveau, O'Reilly, & Wade, 1996; Fiss, 2006). For example, managers might have vast R&D experience compared to a sample but low compared to their predecessors and their colleagues in their R&D focused companies. This bias could be substantial due to reverse causality. Strategies are deemed to influence the selection of managers. Hence, differences in the characteristics of managers in a sample could be a systematic result of the sampled firms and would therefore not allow researchers to draw conclusions on causality. By comparing each manager to his or her predecessor, this bias can be reduced.

Furthermore, a (5) measurement of strategic change that does not start at the beginning of an executive's tenure in office can lead to underestimated relations between managerial characteristics and strategic changes for two reasons. The importance of characteristics on strategic choices declines during a manager's tenure in office (Finkelstein et al., 2009; Hambrick & Fukutomi, 1991) and the overall amount of change declines as well (Abebe, 2009; Boeker, 1997b). Therefore, the longer the average office tenure is in the sample at the beginning of the observation periods, the more any link between characteristics and lagged strategic change will be underestimated.

Finally, studies that do not (6) control for prior strategic change ignore the effect such change might have on posterior strategic change as well as on a change in characteristics and therefore might have an omitted variable bias (see Iyengar & Zampelli, 2009).

All biases limit the ability to interpret any observed associations between managerial characteristics and strategic outcomes. Therefore, upper echelons research should strive to overcome those limitations to better understand the causal effects managerial characteristics have on strategic outcomes.

### 3.3 Application of Research Design Criteria in Prior Studies

To my knowledge, upper echelons researchers so far do not satisfy all of the aforementioned criteria at the same time. Most studies, regardless of whether they analyze top management teams or individual managers, are strictly cross-sectional (Beckman & Burton, 2011; Hambrick, 2007) and therefore do not meet criteria 1 and 3. In addition, I am not aware of an upper echelons study on the amount of lagged strategic change in which (6) prior strategic change has been controlled for. Therefore, scholars are not able to draw conclusions on how the level of strategic change developed following the observation of the characteristics.

Concerning criteria 2, 4, and 5, one has to distinguish between studies that analyze individual managers and the majority of studies that focus on the entire top management team (Carpenter et al., 2004; Hambrick, 2007). Even though analyzing entire teams might be a good idea because it could reveal a stronger association with the firms' strategies than analyzing single managers in isolation (Hambrick, 2007); by definition, research on top management teams cannot fulfill most of the aforementioned criteria. Even if a lagged strategic change is measured, scholars that analyze top management teams can hardly guarantee—and to my knowledge, usually do not—that, during the observation period of strategic parameters (2), no change in the composition of the top management teams happens. In addition, scholars studying top management teams have greater difficulty fulfilling criterion 4. Characteristics differences in top management teams compared to prior teams have to be assessed at a more or less random cut-off time rather than at a precise turnover time. However, assessing a top management team at a certain cut-off time means either observing no change in characteristics or observing the change associated with one specific succession. Such a specific succession then could not serve as representative of change in characteristics for the entire top management team. Sampling succession events in which complete top management teams are

replaced is nearly impossible. Nevertheless, scholars particularly interested in top management diversity might consider examining the effect that changes in diversity—that might be induced by one individual succession—have on the organizational outcome.

Similar to these limitations, researchers of top management teams have greater difficulty fulfilling criterion 5. Researchers should measure strategic change in a period starting when the analyzed managers take office to avoid a negative bias from tenure in office. At maximum, researchers of top management teams could control for the average tenure in office when analyzing other characteristics' effects on strategic change (Wiersema & Bantel, 1992). However, as long as reverse causality is not addressed by fulfilling all other criteria, controlling for tenure in office does not add much interpretability.

With regards to upper echelons studies focusing on individual managers like CEOs, I am not aware of any that take the (4) predecessors' characteristics into account, either. In addition, many studies do not even start their observation periods (5) after the selections of new managers (e.g., Barker & Mueller, 2002; Hambrick et al., 1993) to eliminate any bias stemming from tenure in office (Abebe, 2009; Boeker, 1997b; Hambrick & Fukutomi, 1991) or to assume any change in characteristics. However, as outlined, such an assumption is not sufficient because the characteristics of the new managers might already resemble those of their predecessors (Bigley & Wiersema, 2002; Finkelstein et al., 2009; Zajac & Westphal, 1996), and thus according to upper echelons theory should reflect the current strategy.

Hence, agreeing with the prior literature (e.g., Carpenter et al., 2004; Finkelstein et al., 2009; Hambrick, 2007), I argue that despite greatly contributing to the identification of associations between characteristics and strategic outcomes, upper echelons research faces biases when trying to draw conclusions on causality. Therefore, I would encourage researchers to apply the design criteria developed here as a way to reduce these biases. Thereby, researchers could

generate better insights on the causal effects that drive the observed associations and thus contribute to the understanding of the effect managers' characteristics have on strategies.

## 4 Discussion

My first objective for this study is to contribute to upper echelons theory by proposing a framework that can cope with the reverse effects between managerial characteristics and corporate strategic outcomes. In addition, I strive to contribute to future research by suggesting quantitative study design criteria that allows researchers to comply with this framework and to better understand the causal effect of characteristics on strategic outcome.

The proposed framework integrates the original framework and its fundamental concepts with the concept of the reinforcing spiral introduced by Finkelstein et al. (2009). In addition, it resolves the issue of continuous reinforcement. If this theory only proposed the reinforcing spiral, only a continuous decline in strategic flexibility would comply with the theory. I do not believe, nor does prior research indicate, that organizations develop towards permanent strategic stability. Therefore, continuous strategic flexibility should be compatible with the theory. The outlined framework can explain continuous strategic flexibility as well as the reinforcing spiral because it shows how internal or external challenges might cause a change in characteristics or strategies that then entail change in the other.

By deriving six study design criteria from the framework, I provide future research with criteria on how to design quantitative upper echelons research so that it draws more valid conclusions with regard to causality. Thereby, I limit my attention to the measurement of the effect that upper echelons' characteristics might have on strategic outcomes, because this is

the focal link of upper echelons theory (Hambrick & Mason, 1984). I hope that future research will build on this to uncover new, or reassess known, links between characteristics and strategies or the amounts of strategic change.

The developed framework opens several paths to further theoretical and empirical contributions to upper echelons theory. As it includes the boards' role in making turnover and selection decisions, future research could distinguish between different reasons for successions. Apart from distinguishing between internal and external successions (e.g., Zhang & Rajagopalan, 2004), which is just a different way of analyzing organizational tenure, research on succession consequences also distinguishes between reasons for successions such as forced and unforced turnovers (e.g., Fee & Hadlock, 2004). Future research might analyze reasons for succession as antecedents of the amount of characteristics changes in management turnovers and as indicators of boards' expectations for the new managers and thus for explicit or perceived mandates to changes. Studying reasons for succession together with changing characteristics and lagged strategic changes can contribute to the understanding of the dynamic between strategies and characteristics over time (Beckman & Burton, 2011) and can bridge the gap between upper echelons and succession consequence research. Barron, Chulkov, and Waddell (2011) have already made an attempt in that direction. They show that reasons for succession as well as the type of successors (outsider vs. insider) have an association with discontinued operations, which they use as an indicator for strategic change. Thus, it seems promising to combine these variables, while complying to the framework and the study design criteria I have outlined in this study.

Furthermore, this framework allows for a more differentiated view of moderator effects. By being more explicit with the intervening processes through which managers' frames of reference, indicated by their characteristics, might become reflected in strategic outcomes, the framework distinguishes between effects on the importance of the frames of reference for

information processing with effects on implementation processes. Future research might attempt to empirically differentiate between strategic decisions and implemented strategic changes and might then test how and where the different moderators impact these processes. Such attempts could substantially contribute to the understanding of how frames of reference become reflected in strategic outcomes.

Moreover, because this framework is more explicit with the different processes between information processing and implementing strategies, it can also serve as a starting point to integrate other process variables that intervene between managers' perceptions of reality and between strategy implementation. Such processes concern the interaction of top management team members and their behavioral integration and conflict management (e.g., Amason, 1996; Hambrick, 1994; Simsek, Veiga, Lubatkin, & Dino, 2005) as well as interactions with other actors like middle managers (Raes, Heijltjes, Glunk, & Roe, 2011) or directors (e.g., Kor, 2006; Sundaramurthy & Lewis, 2003; Westphal, 1998).

In addition, future research could complement the design criteria with criteria to measure the reverse causal effect and the various moderating variables. A comprehensive measurement of the entire model using structural equation modeling requires a great amount of data but certainly constitutes a large contribution to the current understanding of the interaction of corporate strategies and upper echelons' characteristics.

Moreover, changing characteristics are only one top management team-related antecedent for strategic change. Others are changes in the team structure or in roles apparent in the top management team (Beckman & Burton, 2011). In consequence, research could develop similar research designs to analyze the effect that change in roles and structures have on lagged strategic changes.

Further, it has to be mentioned that the functioning and the constitution of the frames of reference remains a black box. Like earlier researchers, I assume that psychological and demographic characteristics are indicators of managers' frames of reference that serve as unconscious information filters (Hambrick & Mason, 1984). However, future insights on which characteristics have causal effects on strategies could contribute to the knowledge of what constitutes a frame of reference. In addition, scholars could differentiate between two types of characteristics: First, some characteristics might yield strategic changes when the differences between managers and their predecessors are distinct in one particular direction (negative or positive)—that is, it might be that the more negative the difference in organizational tenure between the new and preceding CEOs, the greater the post-succession strategic changes. Second, other characteristics might yield strategic changes when the differences between managers and their predecessors is greater in absolute terms—that is, it might be that CEOs that have much more as well as CEOs that have much less marketing and sales experience than their predecessors yield much post-succession strategic changes. Such a distinction then contributes not only to the understanding of which characteristics affect strategic changes, but also to knowledge on how they do it.

The six suggested research design criteria imply three consequences that have to be outlined explicitly. First, managers' characteristics have to be analyzed relative to their predecessors. However, this is advantageous not only because characteristics' differences are important to be able to draw conclusions on causality, but also because analyzing relative characteristics controls for different contexts such as industries, cultures, and team settings (Belliveau et al., 1996; Fiss, 2006). Upper echelons researchers so far have avoided sampling companies from different industries because the average levels of certain characteristics, like advertising or R&D knowledge and the respective average levels of resource allocation, might be very different. However, cultural and team differences remain largely ignored (Fiss, 2006). In turn,



analyzing relative characteristics might control for these differences more effectively, because the effect that relative characteristics have on resource allocation changes, which are relative as well, might be largely independent of the overall level of characteristics, resource allocation levels, and contextual differences. In consequence, researchers could sample more heterogeneous companies without adding much contextual uncertainty to the analyses.

Second, the observation periods in a sample will likely differ from firm to firm, because of the impossibility of sampling firms that experience management turnover at the same point in time. Nevertheless, this is advantageous as well. When having only one observation period, the amount of strategic changes in the sampled firms could be influenced by one external shock, which forces all firms to specific actions regardless of the upper echelons' characteristics. In consequence, a correct hypothesis might be mistakenly rejected. In case of different observation periods, only a number of different external shocks, which have to be allocated among the sampled firms in a way that they either coincidentally support or do not support the hypotheses, might lead to mistakenly rejected or confirmed hypotheses. This latter effect can be minimized by increasing sample sizes, while the first requires the correct identification of the external shock and the sampling of a completely different period. Again, because having different observation periods is a consequence of being able to better interpret findings with regards to causality and because increasing this ability should be valued higher than some uncertainty with regards to external shocks, this consequence should be worthwhile.

The third consequence of the proposed research design criteria is that it will remain difficult to analyze entire top management teams in aggregation while complying with the design criteria and being able to draw valid conclusions on causality. However, the concept of top management teams is nonetheless criticized in research for inhomogeneous definitions (e.g.,

Carpenter et al., 2004; Pettigrew, 1992) and because top management teams might in reality rarely act as teams and thus rarely make decisions as teams (Hambrick, 2007). Hambrick (2007) argues that top managers might make decisions regarding their fields of responsibility on a bilateral basis together with the CEO, and suggests analyzing decision-related subgroups (Hambrick, 2007). Nevertheless, I agree with prior research that entire top management teams might have more impact on strategic outcomes than individuals (e.g., Hambrick & Mason, 1984). However, I also believe that analyzing individuals in isolation is required to be able to draw any conclusions on the causal effects that characteristics, other than team heterogeneity, might have on strategies, which remains the aim of the upper echelons research (Hambrick & Mason, 1984).

## **5 Concluding Remarks**

Building on fundamental concepts of the upper echelons theory, I suggest a conceptual refinement of the original framework, particularly taking into account the effects from changes in characteristics and strategies over time. Further, I include the concept of the reinforcing spiral (Finkelstein et al., 2009) in the framework and add mechanisms on how this reinforcement can be interpreted. Moreover, this conceptually refined framework allows for differentiating between the different moderators that impact the effect that frames of reference have on strategic outcomes. Thereby, this study contributes to upper echelons theory.

Moreover, I derive criteria for how researchers should design future quantitative upper echelons research to comply with this framework and thus to take into account the reverse effects embedded in the theory. Even though researchers using quantitative and archival data-based study designs are not able to confirm causality, I believe that applying these criteria will help to draw more valid conclusions on causality and thus to better understand the effect of

managers' characteristics on strategic outcomes. Delivering such a set of study design criteria contributes to the methodology of upper echelons research.

Both, the developed framework and the research design criteria, will hopefully contribute to future research and insights on the antecedents of corporate strategic outcomes.



### **III. Do Young Outsiders Transform the Firm? Reassessment of how Tenure and Age Affect Strategic Change**

In the previous chapter, I proposed a refined upper echelons framework that takes into account time and reverse causal effects. Additionally, I derived six research design criteria that illustrate how researchers might comply with this refined framework and thus how they might design studies that better allow for conclusions on causal effects.

In the following chapter, I reassess apparently well-explored relations between managerial characteristics and firm strategic outcomes by applying the research design criteria. Upper echelons researchers argue that tenure and age negatively affect strategic change but ignore potential reverse causal effects. Contrary to the prevailing interpretation, I propose that the relative organizational and industrial tenure and the relative age of new CEOs compared to their predecessors positively relate to lagged strategic change. I test the hypotheses using a sample of S&P 500 companies and analyzing their strategic change during a six year period surrounding a CEO succession.

Overall, this chapter integrates arguments from different research streams on how executives' tenure and age affect strategic change. It is the first to show that the relative organizational and industrial tenure and the relative age of new CEOs positively affect the amount of strategic change in the post-succession period. Thereby, it contributes not only to knowledge on these relations, it also demonstrates the importance of the research design criteria for interpreting causal effects. Together with the essence of the previous chapter I presented the findings of this chapter at the second workshop of the European Institute for Advanced Studies in Management on top management teams and business strategy research in Istanbul, Turkey on April 1<sup>st</sup> 2011.

## **1 Introduction**

Based on upper echelons theory (Hambrick & Mason, 1984), a large body of research has emerged that identifies numerous managerial characteristics associated with corporate strategic outcomes. A strategic outcome is defined as either a specific strategy or as the amount of general strategic change (Carpenter, 2011; Finkelstein et al., 2009; Hambrick, 2007). One of the most prevalent characteristics analyzed has been executives' organizational tenure (Finkelstein et al., 2009). Researchers argue that organizational tenure has an association with an increasing commitment to an executive's prior actions, with decreasing information diversity as managers tend to develop habits and to increasingly rely on past experiences, and with increasing personal risks from change as the competency of a top manager usually fits well with the established but not with a new strategy (e.g., Finkelstein & Hambrick, 1990; Finkelstein et al., 2009; Hambrick et al., 1993). Accordingly, researches have found a negative association between organizational tenure and strategic change (e.g., Datta et al., 2003; Finkelstein & Hambrick, 1990; Wiersema & Bantel, 1992). The aforementioned arguments concern the openness or the willingness to drive change. In a recent contribution to upper echelons theory, Wowak and Hambrick (2010) highlight that, in addition to willingness-related aspects, the ability of executives to implement or pursue managerial actions also affects their behavior and thus their effects on organizational outcomes. Hence, ability-related aspects of executives might affect the initiation and the implementation of changes, regardless of their willingness for change. Similarly, while acknowledging the willingness-related aspects, researchers in the field of succession consequences, also highlight ability-related aspects of organizational tenure, namely the importance of internal knowledge, networks, and acceptance among the top management team to successfully implement strategic change (e.g., Cao et al., 2006; Karaevli, 2007; Zhang & Rajagopalan, 2010). Taking account of the negative willingness- and positive ability-related

effects of tenure on strategic change, these authors expect and empirically find ambiguous performance consequences from selecting outsider CEOs (Cao et al., 2006; Karaevli, 2007; Zhang & Rajagopalan, 2010). When theorizing about organizational tenure I consider outsidership, because the latter is a dichotomous operationalization of the first. Therefore, the exclusively willingness-oriented argumentation and the consistent negative association between organizational tenure and strategic change in upper echelons research somehow disaccords with the findings of succession consequence research.

Three reasons might explain this disaccord. First, in some studies on tenure, researchers do not control for executives' age (Finkelstein & Hambrick, 1990; Geletkanycz & Black, 2001; Hambrick et al., 1993), although scholars have argued that age, similar to tenure, has a negative association with strategic change due to a positive relation with the personal risks from change (Wiersema & Bantel, 1992) and with the commitment to the status quo of an organization (Datta & Rajagopalan, 1998; Hambrick & Mason, 1984; Young, Charns, & Shortell, 2001). Also, age and organizational tenure might have a relation to each other. Therefore, both characteristics should be analyzed together in order to draw separated conclusions.

Second, several studies on tenure and age and strategic change might have a negative bias because they do not analyze newly appointed executives (e.g., Finkelstein & Hambrick, 1990; Geletkanycz & Black, 2001; Wiersema & Bantel, 1992). Because researchers propose (Finkelstein et al., 2009; Hambrick & Fukutomi, 1991) and empirically underpin (Abebe, 2009; Boeker, 1997b) that tenure in office has a negative association with strategic change, analyzing executives with different tenures in office might lead to confusion between this negative effect and the effect organizational tenure and age might have.

Third, studies on organizational tenure and age so far do not deal adequately with reverse causality, which suggests that certain firms' strategies are predictive of the selection of certain types of executives (see Finkelstein et al., 2009; Hambrick, 2007; Pettigrew, 1992). For example, researchers propose (Finkelstein & Hambrick, 1990; Pettigrew, 1992) and empirically find (Zhang & Rajagopalan, 2003) that persistent strategies might lead to the selection of more insider executives and to less management turnover. Therefore, although finding strictly negative associations between tenure and age and strategic change, prior studies are not conclusive about the causal effects that tenure and age have on strategic change.

In conclusion, upper echelons research on the effect of organizational tenure on strategic change might be biased and therefore might have provided consistently negative associations because its researchers do not always include age, often do not sample newly appointed executives, and because they are not conclusive on causality. With my study, I attempt to address these shortcomings and thereby to contribute to upper echelons research in several ways. First, when deriving hypotheses on how relative organizational tenure and age affect strategic change, I integrate willingness- and ability-related aspects from upper echelons research and succession consequence research. I also consider industrial tenure, which might have similar effects on strategic change as organizational tenure (Finkelstein & Hambrick, 1990; Karaevli, 2007).

Second, I apply the study design I developed in Chapter II that better allows drawing conclusions on causality than the prior research. I measure the lagged strategic change in a period with stable executive characteristics, starting directly after a measured change in those characteristics. In addition, I control for prior strategic change. Although researchers pursuing quantitative archival data-based research are not able to confirm causality, applying this research design addresses the major limitations prior upper echelons research faced with



regards to reverse causality. In addition, it also eliminates any bias stemming from tenure in office. In consequence of this research design, I analyze one executive role in isolation instead of the entire top management team to sample newly selected executives only and to compare them to their predecessors. However, I agree that entire teams might have more impact on strategic change than single individuals. Like other studies, I analyze the CEO as presumably the most important decision maker among top management team members (e.g., Barker & Mueller, 2002; Datta et al., 2003; Hambrick et al., 1993).

Third, in my study, I demonstrate that adopting this research design sheds new light on the relation between tenure, age, and strategic change. In a sample of 100 *Standard & Poor's 500* companies, I find that relative industrial and organizational tenures and ages positively relate to post-succession strategic changes. These findings suggest that replacing a relatively short-tenured and young CEO with a relatively long-tenured and old CEO leads to more strategic change than an opposite scenario. This is counterintuitive but not contradictory to existing knowledge. New CEOs that are older and longer tenured than their predecessors might initiate more strategic change, while absolute tenures and ages of executives might have a negative association with strategic change. With these findings I contribute to upper echelons research on tenure and age, because, through them, I shed new light on apparently well-explored relations and underpin the relevance of the applied study design. This contribution will hopefully inspire other researchers to design studies in a way that allows for better conclusions on causality as has been requested in prior literature (e.g., Finkelstein et al., 2009; Hambrick, 2007).

Fourth, practitioners might benefit from this contribution more than from prior studies because findings on newly selected CEOs might be more transferable to situations in which boards must make replacement decisions, than those of studies analyzing incumbent CEOs

with different executive tenures or entire top management teams. In addition, taking the predecessors as a point of reference is advantageous, because practitioners might compare a new CEO with his or her predecessor, rather than with a sampled population of incumbent CEOs.

The remainder of this study is structured as follows: First, after a brief discussion of the major reasons that limit the ability of upper echelons researchers to draw conclusions on causality and their implications for hypothesis development, I develop my hypotheses for organizational tenure, industrial tenure, and age. Second, in the methods section I discuss the research design adopted, including sample selection and measures. Next, I present the empirical results. Further, I discuss my findings, their implications for future research and practitioners, and the limitations of my study, followed by a brief conclusion.

## **2 Theory and Hypotheses**

As mentioned, findings on the effect that organizational tenure has on strategic change might be biased for three reasons; namely, the disregard of age, the confusion of organizational tenure with tenure in office, and not taking into account reverse causal effects. In contrast to the first two reasons, reverse causality, which is not only problematic in tenure related research but in upper echelons research in general (e.g., Finkelstein et al., 2009; Hambrick, 2007; Pettigrew, 1992), cannot be solved just by sampling or including other variables.

Two major reasons limit the ability of upper echelons scholars to draw conclusions on the causal effects from associations between characteristics like tenure and age and strategic change. First, they do not control for whether the level of strategic flexibility has changed

from a prior period (e.g., Datta et al., 2003; Finkelstein & Hambrick, 1990; Wiersema & Bantel, 1992). Hence, they observe that certain firms have more volatile strategies than others and that those more volatile firms have relatively short-tenured and young executives.

However, because researchers of these studies do not observe the development in strategic flexibility, they are not conclusive on whether the observed level stems from an increase or a decrease in strategic flexibility or whether it reflects the established norm. In consequence, they are also not conclusive on whether the level of the executives' tenure and age is the antecedent or the result of the observed strategic flexibility.

Second, prior upper echelons studies link absolute characteristics to strategic change.

According to the argument put forward in prior upper echelons research, the level of strategic flexibility should reflect the executives' organizational tenure and age. Hence, if at a certain point in time the level of strategic flexibility increases, the increase has to reflect a prior decrease in organizational tenure and age to support the argument, otherwise it has to have other reasons. Thus, without analyzing relative organizational tenure and age compared to a predecessor or a preceding team, research cannot truly conclude whether the arguments are supported or not. Furthermore, differences among individuals might not be symmetric across different environments, but could be dependent on their relative environment (Belliveau et al., 1996; Fiss, 2006). For example, a manager could appear as rather short-tenured compared to the sample, even though he or she might be rather long-tenured compared to his or her predecessor or to the particular firm culture. The resulting bias might be substantial due to reverse causality, because firms' strategies might influence the selection of executives (e.g., Finkelstein et al., 2009; Gupta, 1986; Zhang & Rajagopalan, 2003). Hence, differences in the characteristics of executives across firms might explain prior strategic differences as well as lagged strategic decisions, and thus do not allow researchers to draw conclusions on causality. Moreover, succession-consequence researchers suggest that the effect a new CEO might have

on strategic change and performance is dependent on the departing CEO's internal knowledge and network as well as on the new CEO's ability to compensate for the departure of the preceding CEO (Cao et al., 2006). For example, if the predecessor has a strong network and high internal knowledge, it seems to be more important for the successor to have internal network and knowledge as well. Hence, the effect of certain characteristics might depend on the predecessors' characteristics. Therefore, comparing each executive to his or her predecessor, might lead to more valid conclusions on causality and on characteristics' effects.

While the first reason that limit the ability to draw conclusions on causal effects—the missing control for the prior level of strategic flexibility—can be addressed by gathering and including data in the research model, the second reason also has implications for hypothesis development. Therefore, in the following subsection, I review existing arguments on how tenure and age might affect strategic change and develop hypotheses on how these characteristics—when considered in relative terms—might affect strategic change.

## **2.1 Tenure and Post-Succession Strategic Change**

The arguments on how organizational tenure affects strategic change can be clustered into the aspects that relate to the willingness and the ability to drive change. Upper echelons researchers promote four willingness-related arguments. First, they suggest that tenure affects the affinity to initiate change, because organizational tenure positively affects an executive's commitment to the status quo (Staw & Ross, 1980; Stevens, Beyer, & Harrison, 1978) and to the values of a firm (Schmidt & Posner, 1983; Wiersema & Bantel, 1992). Accordingly, authors of empirical studies report that organizational tenure negatively relates to strategic change (Datta et al., 2003; Finkelstein & Hambrick, 1990; Wiersema & Bantel, 1992) and

positively to CEOs' commitment to the status quo (Geletkanycz & Black, 2001; Hambrick et al., 1993).

Second, top management researchers suggest that personal risks from change are stronger for longer tenured executives, because their competencies are more specific to firm specifications than those of shorter tenured peers (Coffee, 1988; Finkelstein & Hambrick, 1990; Vancil, 1987).

Third, Michel and Hambrick (1992) argue that tenure positively relates to social cohesion among long-time colleagues. Because strategic change might involve personal risks to the CEO's long-time colleagues, social cohesion might reduce the CEO's willingness to drive change because the CEO might seek to avoid conflicts with long-time colleagues.

The fourth willingness-related aspect is the mandate for change given explicitly to or perceived implicitly by the new executive. Hambrick (2007) argues that an executive who has been selected because of how much his or her characteristics fit a change that board members desire might be driven primarily consciously by those expectations rather than unconsciously by their characteristics. Consequently, selecting executives who are very different from their predecessors—also in terms of tenure—might come along with an explicit, or lead to a perceived, mandate for change and thus sustain the executives' willingness for change.

In addition to these willingness-related aspects, researchers interested in succession consequences also promote two ability-related aspects. The first suggests that internal knowledge and an internal network, both positively related to organizational tenure, are important in identifying avenues for strategic change and to knowing how to implement those changes (e.g., Cao et al., 2006; Shen & Cannella, 2002; Zhang & Rajagopalan, 2010).

The second refers to the ability to push change. Researchers argue that a short-tenured CEO has difficulty implementing strategic change, because he or she has difficulty garnering support from the other managers who worked together previously or were even selected by the CEO's predecessor (Karaevli, 2007; Shen & Cannella, 2002). Other longer tenured top managers and subordinates might resist the changes a new CEO initiates (Karaevli, 2007), because organizational tenure might have a positive association with personal risks from change (Coffee, 1988; Finkelstein & Hambrick, 1990; Vancil, 1987) and because long-tenured managers might be committed to the status quo and to their prior actions (Finkelstein & Hambrick, 1990; Staw & Ross, 1980; Stevens et al., 1978). Accordingly, researchers show that outsider CEOs are only associated with strategic change when other top management team members are replaced as well (Barron et al., 2011). Moreover, the outsider CEO's lack of an internal network (Cao et al., 2006; Shen & Cannella, 2002) could further reduce his or her ability to push change, because he or she might also experience disadvantages in building coalitions for change.

As mentioned earlier, upper echelons researchers analyzing the relation between organizational tenure and strategic change argue only on the basis of willingness-related aspects and find only negative associations (e.g., Datta et al., 2003; Finkelstein & Hambrick, 1990; Wiersema & Bantel, 1992). As the strictly negative associations are somehow disaccording to other findings (e.g., Barron et al., 2011; Zhang & Rajagopalan, 2010) and because they do not allow for drawing conclusions on causality (e.g., Carpenter et al., 2004; Finkelstein et al., 2009; Hambrick, 2007), I reassess the effect of organizational tenure on strategic change. I develop my hypotheses based on willingness- and ability-related aspects and suggest that an executive should possess both the willingness and the ability to implement strategic change. As it is necessary to analyze relative characteristics to allow for better conclusions on causality, in the following, I argue how the relative organizational tenure of a

new CEO compared to his or her predecessor might affect the level of post-succession strategic change. Even though there is a continuum of very negative and positive tenure differences for the succeeding CEOs, I differentiate between four cases to simplify the argument. I distinguish (A) very negative differences (short-tenured following long-tenured CEOs); average differences, when (B) a short-tenured follows a short-tenured CEO, or (C) a long-tenured follows a long-tenured CEO; and (D) more positive differences (long-tenured following a short-tenured CEOs).

Researchers suggest that short tenure in the organization might indicate a high affinity for change and a low commitment to the status quo (e.g., Schmidt & Posner, 1983; Staw & Ross, 1980). Moreover, short tenure might also indicate low personal risks from strategic change (e.g., Finkelstein & Hambrick, 1990). In addition, as short tenure is related to low social cohesion (Michel & Hambrick, 1992), short-tenured executives might be less bound by their colleagues' personal risks from change and thus feel low social constraints to initiate changes. These phenomena can be generalized across all short-tenured CEOs no matter the preceding CEOs' tenures. However, the fourth aspect—the mandate for change—could be dependent on the preceding CEO's tenure. While a replacement of a (A) long-tenured by a short-tenured CEO could signal the expectation to inject new ideas, a replacement of a (B) short-tenured by another short-tenured CEO could instead signal that the company has a high turnover rate for CEOs or a short-tenure culture. Nevertheless, taking all four aspects of the willingness for change together, I assume a high willingness for change for all short-tenured CEOs.

According to these arguments, the assumption is that long-tenured executives have little willingness for change. However, (D) a long-tenured CEO that replaces a short-tenured CEO is not necessarily very emotionally bound to the actions of his or her predecessor. Therefore, the change-averse predisposition generally associated with long tenure might be low.

Moreover, personal risks from change might be low as well, as taking actions that contradict the predecessor's strategy might not necessarily be associated with personal risks. For the same reason, social cohesion between the new CEO and his or her long-time top management colleagues might not prohibit him or her from initiating change and thus social constraints might be low as well. Finally, while (C) a replacement of a long-tenured by another long-tenured CEO might signal a mandate for continuity, (D) a replacement of a short-tenured by a long-tenured CEO might signal a mandate to leverage internal knowledge and network to drive change. Hence, for long-tenured CEOs, I assume low willingness for change when (C) they replace other long-tenured CEOs, but moderate willingness for change when (D) they replace short-tenured CEOs.

With regards to aspects that concern the ability to drive change, researchers assume that short organizational tenure implies that the executive lacks internal knowledge, an internal network, and acceptance among top management colleagues (Barron et al., 2011; Cao et al., 2006; Shen & Cannella, 2002). I assume that this is particularly problematic when (A) a short-tenured CEO replaces a long-tenured CEO. Accordingly, research suggests that, in the case of CEO turnover, other top managers that often have been selected by the former CEOs, resist the changes that the new CEO desires, particularly if he or she is an outsider (Karaevli, 2007; Shen & Cannella, 2002). In turn, (B) when a short-tenured replaces another short-tenured CEO, short tenure might not be a drawback in terms of acceptance among top management colleagues. In addition, the lack of internal knowledge and of an internal network might also be less of a problem because the organization either has a short-tenure culture and somehow compensates for long-tenure advantages, or at least the lack of internal knowledge and of an internal network are not as apparent vis-à-vis the predecessor and therefore less perceived by others. Accordingly, I assume that short-tenured CEOs lack the ability to drive change when they (A) replace long-tenured CEOs, but not when they replace (B) short-tenured CEOs.



Corresponding to these arguments, long tenure has a positive association with internal knowledge, strength of internal network, and acceptance (e.g., Cao et al., 2006; Karaevli, 2007; Shen & Cannella, 2002). Accordingly, I assume that long-tenured CEOs possess high ability to drive change independently from the tenure of their predecessors.

FIGURE III-1

Relative Tenure in the Organization and Expected Corporate Strategic Change

<b>Leaving CEO</b>	<b>Long</b>	<b>A) Very negative diff.</b>		<b>C) Avg. difference</b>		<ul style="list-style-type: none"> <li>i Affinity for change</li> <li>ii Personal risks</li> <li>iii Social constraints</li> <li>iv Mandate for change</li> <li>v Knowledge what to change</li> <li>vi Ability to push change</li> </ul> <ul style="list-style-type: none"> <li>+ High ...</li> <li>0 Moderate ...</li> <li>- Low ...</li> </ul> } ... willingness/ability to drive strategic change
		Aspects	Evaluation	Aspects	Evaluation	
			i +		i -	
		Willing-	ii +	Willing-	ii -	
		ness	iii +	ness	iii -	
		iv +		iv -		
	Ability	v -	Ability	v +		
		vi -		vi +		
	<b>B) Avg. difference</b>		<b>D) More positive diff.</b>			
	Aspects	Evaluation	Aspects	Evaluation		
	i +		i 0			
Willing-	ii +	Willing-	ii 0			
ness	iii +	ness	iii 0			
	iv 0		iv 0			
Ability	v 0	Ability	v +			
	vi 0		vi +			
<b>Short</b>						
	<b>Short</b>		<b>Long</b>			
	<b>New CEO</b>					

Figure III-1 visualizes the four cases and summarizes how the six willingness- and ability-related aspects might influence the effect of organizational tenure on the amount of strategic change. According to my assumption that an executive should possess both the willingness and the ability to drive strategic change, I derive the following expectations. When (A) a short-tenured CEO replaces a long-tenured CEO, I expect high willingness but low ability for change and thus low strategic change. In the case of average differences I expect high willingness and moderate ability for change and thus moderate strategic change, when (B)

two short-tenured CEOs replace each other. And, I expect low willingness and high ability for change and thus low strategic change, when (C) two long-tenured CEOs replace each other.

Therefore, taking together the cases of average differences (B and C), I expect low to moderate strategic change. Next, when (D) a long-tenured CEO replaces a short-tenured CEO, I expect moderate willingness and high ability for change and thus moderate strategic change. I therefore hypothesize:

*Hypothesis 1a: The more positive the difference in organizational tenure between new and preceding CEOs, the higher is the level of post-succession strategic change.*

Similar to findings on organizational tenure, researchers suggest that industrial tenure also has a negative association with strategic change (Hambrick et al., 1993; Karaevli, 2007). The authors argue that industry membership, even though it is a broader concept, yields similar effects as organizational tenure. According to them, an industry is a social setting in which trends, events, and concepts are shared. The longer an individual engages in such a setting, the more he or she is convinced of the correctness of its concepts and thus is less willing to change strategy (Hambrick et al., 1993; Karaevli, 2007). Moreover, executives hired from outside the industry might lack even more knowledge on what to change and how and might even lack more acceptance among top management colleagues than executives hired from inside the industry (Karaevli, 2007). I expect stronger results for differences in industrial tenure than for differences in organizational tenure, because the first difference includes the second, and thus more information that is expected to have similar effects.

*Hypothesis 1b: The more positive the difference in industrial tenure between new and preceding CEOs, the higher is the level of post-succession strategic change.*

*Hypothesis 1c: The difference in industrial tenure has a stronger effect on post-succession strategic change than the difference in organizational tenure.*

## **2.2 Age and Post-Succession Strategic Change**

Very similar as upper echelons researchers argue concerning tenure scholars argue that age has a negative association with strategic change due to positive effects on personal risks from change (Wiersema & Bantel, 1992) and on the commitment to the status quo of an organization (Datta & Rajagopalan, 1998; Hambrick & Mason, 1984; Young et al., 2001). As age and tenure have a relation to each other, they should be analyzed jointly in order to derive separated conclusions. Moreover, none of the empirical findings on age that support these arguments (e.g., Bantel & Jackson, 1989; Datta et al., 2003; Wiersema & Bantel, 1992) is robust to reverse causal effects. This is because the authors do not analyze relative age, not all examine newly selected executives or lagged strategic change, and none controls for the prior level of strategic flexibility. Therefore, I reassess the effect age has on post-succession strategic change.

I find five distinct willingness-related aspects of age in the prior research. First, researchers in the field of generational identity suggest that individuals from different birth cohorts show different attitudes (Joshi, Dencker, Franz, & Martocchio, 2010; Schuman & Scott, 1989; Twenge, Campbell, Hoffman, & Lance, 2010), which might yield different preferred strategies (Hambrick & Mason, 1984). Accordingly, researchers find that birth cohorts have an association with risk adversity (Bamber, Jiang, & Wang, 2010; Malmendier & Nagel, 2011), with preferred levels of corporate expenditures, leverage, and cash holdings (Bertrand

& Schoar, 2003). Hence, these researchers suggest that different birth cohorts indicate different preferred strategies.

Second, sociology researchers argue that the resistance to change increases as people age because flexibility decreases and general risk propensity increases (Carlson & Karlsson, 1970). However, Weller, Levin, & Denburg (2011) suggest that, with increasing age, risk propensity decreases only for decisions to achieve gains but not for decisions to avoid losses. Nevertheless, several upper echelons researchers build on the idea that overall risk propensity seems to decrease with increasing age, and they find that age has a negative relation to strategic change (Datta et al., 2003; Grimm & Smith, 1991; Wiersema & Bantel, 1992).

The third willingness-related aspect of age is the personal risk from strategic change. Wiersema and Bantel (1992) argue that career security becomes more important with increasing age and that, therefore, older managers are hesitant to drive strategic change. However, researchers interested in the behavior of portfolio managers and financial forecasters find that young managers are more often punished for deviating from their colleagues' opinions and less often deviate from consensual opinions (Chevalier & Ellison, 1999; Hong, Kubik, & Solomon, 2000; Lamont, 2002). Consequently, they argue that portfolio managers' and forecasters' career concerns decrease as they age. However, this argument is not specific to general managers or CEOs. Nevertheless, the rationales for why career concerns should increase when actors age are also not specific to general managers or CEOs (see Wiersema & Bantel, 1992). Therefore, ambiguous opinions exist on the relation between age and career concerns. In turn, there is consensus that career concerns negatively affect making risky decisions such as driving strategic change or deviating from mainstream opinions.

Fourth, as I argue in the subsection on tenure, mandates for change could create willingness for change because the selection of executives who are very different from their predecessors—also in terms of age—might come along with an explicit or, lead to a perceived mandate for change.

Fifth, several scholars argue that older managers are committed to the organizational status quo (Datta & Rajagopalan, 1998; Hambrick & Mason, 1984; Young et al., 2001). However, I assume that age has no effect on emotional bindings to organizational status quo beyond that of tenure. Hence, I do not consider this argument when deriving my hypothesis on age.

In contrast to tenure, age has not been the focus of succession consequence researchers.

However, similar to tenure, age might affect the ability to implement strategic change.

Researchers interested in status characteristics suggest that once a new leader enters a team, his or her status is evaluated by other team members, with age being one important source of status (Berger, Cohen, & Zelditch, 1972; Sauer, 2011; Zelditch, Berger, Andersen, & Cohen, 1970). Furthermore, scholars argue that the executive's status determines personal power, which in turn is influential on managerial effectiveness (Sauer, 2011; Yukl & Falbe, 1991). Hence, age contributes to the status of an executive in the top management team; and status helps the executive to exercise personal power (Sauer, 2011; Yukl & Falbe, 1991) that enhances the ability to push change.

As for tenure, I assume that a manager should possess the willingness and ability to drive strategic change, and I distinguished four cases similar to those defined in the prior section.

The first willingness-related aspect of age is that age might indicate different attitudes (Joshi et al., 2010; Schuman & Scott, 1989; Twenge et al., 2010) and, in consequence, different strategic preferences (Bamber et al., 2010; Bertrand & Schoar, 2003; Malmendier & Nagel,

2011). Hence, I assume that (A) young managers that replace old managers have different strategic preferences. Due to normal rejuvenation processes, the differences in age are negative even when (B) relatively young or (C) relatively old CEOs replace each other. Therefore, in these constellations, successors might have different age-related strategic preferences than their predecessors.

Second, researchers suggest that age has a negative association with risk propensity (Carlson & Karlsson, 1970), at least as far as risks for achieving gains are concerned (Weller, Levin, & Denburg, 2011). Building on this general concept of risk propensity, scholars in upper echelons research argue that young executives are less resistant to change than older ones (Datta et al., 2003; Grimm & Smith, 1991; Wiersema & Bantel, 1992). I assume that this predisposition is independent of the predecessors' age, and thus assume a high affinity for change in each case where a young CEO takes office (A and B).

Concerning the third aspect, the personal risks from change, there are ambiguous arguments on the relation between career concerns and age. Fee and Hadlock (2004) present empirical evidence on career consequences for dismissed CEOs and suggest that they most often change to much smaller companies where wages are typically lower or, alternatively, take a position inferior to CEO at a similarly sized company. Accordingly, career concerns should decrease with increasing age, because dismissals have a greater impact on the overall career of young CEOs than on that of old CEOs who, in any case, are relatively close to retirement. Hence, I assume high career concerns for young CEOs regardless of their predecessors' age (A and B).

The fourth aspect, is the mandate for change (Hambrick, 2007). If (A) a relatively young CEO replaces a relatively old CEO, this change might signal the explicit or implicit mandate to inject new ideas and to discard dated beliefs. In turn, (A) when a relatively young CEO

replaces another relatively young CEO, such a mandate is not as obvious because hiring young executives could simply reflect the existing corporate culture.

Hence, I assume high differences in strategic preferences and high affinity for change but also high career concerns in both cases (A and B), strong mandates for change in case A and moderate mandates for change in case B.

With regards to age-related preferred strategies, old managers that replace young managers should have different strategic preferences. However, keeping in mind that normal rejuvenation leads to negative average age differences, the actual age difference in the case (D) of “more positive differences” when relatively old replace relatively young CEOs might be close to zero. Therefore, I do not assume different age-related preferred strategies in case D, but I do for the cases of average differences (B and C).

Regarding the second aspect, it might be questionable to generalize on newly selected, relatively old CEOs the idea that aging actors become change averse due to losing flexibility and mobility (Carlson & Karlsson, 1970). By taking over a new position such CEOs demonstrate flexibility and mobility. Also, Weller et al. (2011) show that risk-taking behavior decreases only for achieving potential gains, but not for avoiding potential losses. Because strategic change can have both reasons and as new CEOs demonstrate flexibility and mobility, I do not assume change aversion for newly selected, old CEOs (C and D), but rather a neutral predisposition to change.

Concerning the third aspect, I follow my argument for young CEOs and assume rather low career concerns for old CEOs (C and D).

With regards to the mandate for change, I assume that replacing a (C) relatively old with another relatively old CEO signals a mandate for continuity rather than for change. In contrast, replacing (D) a relatively young with a relatively old CEO does not signal such a mandate but might signal the expectation to leverage the latter's experience to initiate changes. Moreover, top management researchers suggest that in large corporations relay successions are the most common types of successions (Cannella & Shen, 2001; Vancil, 1987) and that successors in these are usually at least five years younger than the departing CEOs (Cannella & Shen, 2001; Hambrick & Cannella, 2004; Vancil, 1987). Further, Ocasio (1999) suggests that management turnover processes follow certain rules of succession. Hence, replacing a CEO with a younger CEO seems to comply to these succession rules, while a replacement of a CEO with a similar aged or even older CEO seems to violate such rules. Accordingly, disregarding the normal rejuvenation might signal a need for change and thus might come along with an explicit or perceived mandate for change. Consequently, I assume a strong mandate for change in the case of (D) more positive age differences.

Hence, I assume different age-related strategic preferences in case C and similar preferences in case D, neutral predispositions to change and low career concerns for all newly selected old CEOs (C and D), no mandates for change in case C, but in case D.

With regards to the ability to drive change, I expect that age enhances the status of an executive and contributes to personal power (Sauer, 2011; Yukl & Falbe, 1991), which is even more important than positional power for managerial effectiveness (Yukl & Falbe, 1991). Especially when (A) a young CEO replaces a much older CEO, other top managers might evaluate the status of the new CEO as being smaller (Berger et al., 1972; Zelditch et al., 1970). This evaluation might dilute the ability to push change. In the case (B) when a young replaces another young CEO, this age-related status issue should be less apparent and much lower, because entire organizations and other top management team members are used to



having young CEOs and might be young themselves. Similarly, (C) when an old replaces another old CEO the new CEO should not have any age-related advantages with regards to status or power, either. In turn, when (D) an old CEO replaces a relatively young CEO, even though they might be of similar age, the fact that he or she has been selected despite age and takes office at an age at which the predecessor leaves, might contribute to his or her status and enhance his or her personal power. In addition, in this case the other top managers might be less resistant to change due to the signaling effect such a replacement might have. Therefore, I assume a high ability to push change in case D.

FIGURE III-2

Relative Age and Expected Corporate Strategic Change

<b>Old</b>	<b>A) Very negative diff.</b>		<b>C) Avg. difference</b>		i Different preferences ii Affinity for change iii Low career concerns iv Mandate for change v Ability to push change  + High ... } ... willing-ness/ability to drive strategic change 0 Moderate ... } - Low ... }
	Aspects	Evaluation	Aspects	Evaluation	
	Willing-ness	i + ii + iii - iv +	Willing-ness	i + ii 0 iii + iv -	
	Ability	v -	Ability	v 0	
<b>Leaving CEO</b>	<b>B) Avg. difference</b>		<b>D) More positive diff.</b>		
	Aspects	Evaluation	Aspects	Evaluation	
	Willing-ness	i + ii + iii - iv 0	Willing-ness	i 0 ii 0 iii + iv +	
	Ability	v 0	Ability	v +	
<b>Young</b>					
	<b>Young</b>		<b>Old</b>		
	<b>New CEO</b>				

Similar to Figure III-1, Figure III-2 summarizes these arguments. Willingness-related aspects of age do not seem to work in consistent directions within the different cases. As I do not have an indication of which aspects are more important than others, I weight all aspects

equally when deriving the hypotheses. Therefore, I expect a high willingness but a low ability for change and thus low strategic change when (A) a young replaces an old CEO. For the cases of average differences (B and C), I expect moderate willingness and ability for change, and thus moderate strategic change. Finally, when (D) an old replaces a young CEO, I expect a high willingness and ability for change and thus high strategic change. I therefore hypothesize:

*Hypothesis 2: The more positive the difference in age between new and preceding CEOs, the higher is the level of post-succession strategic change.*

Notably, my hypotheses do not contradict prior findings on the association between absolute tenure or age and strategic change. For example, the negative association between absolute tenure and strategic change can coexist with the hypothesis that relative tenure positively relates to lagged strategic change. However, my hypotheses take into account willingness- and ability-related aspects as well as the importance of relative characteristics for interpreting characteristics differences in a sample (Belliveau et al., 1996; Cao et al., 2006; Fiss, 2006). The difference in practical implications of prior findings and my hypotheses underscore the importance of testing the hypotheses proposed in this study.

### **3 Methods**

#### **3.1 Research Design**

As mentioned earlier, upper echelons research on tenure and age has not been conclusive on causality. Therefore, I apply the research design I developed in Chapter II. These design

criteria allow for drawing better conclusions on causality and determine the sample design of this study.

In short, I measure strategic change in a period posterior to an observation of managerial characteristics. Thereby, I include a time lag between the last strategy observation and the measurement of managerial characteristics which is essential to draw any conclusions on causality (Hambrick, 2007). For the same reason, I ensure that the observed managers stay the same during the observation period. Moreover, I measure the change in characteristics between new and departing CEOs because, according to upper echelons theory, changing strategies are grounded in changing executive characteristics, whereas stable characteristics should lead to persistent strategies (Finkelstein et al., 2009; Hambrick & Fukutomi, 1991). Thereby, I also take advantage of assessing relative characteristics (Belliveau et al., 1996; Fiss, 2006). As consequence, each observation period starts when the new CEO takes office. This starting point helps to exclude any bias stemming from different tenures in office which are negatively related to strategic change (e.g., Abebe, 2009; Boeker, 1997b; Finkelstein et al., 2009). Gabarro (1987) suggests that managers initiate almost all of their major changes during their first three years in office. Therefore, a three-year period seems to be well suited for capturing the change that CEOs initiate according to their preferences (e.g., Bigley & Wiersema, 2002; Boeker, 1997a; Wiersema & Bantel, 1992). Finally, I control for prior strategic change to observe whether the amount of strategic change increases, decreases or remains the same after a new CEO takes office and thus to draw conclusions how this development might have been affected by managerial characteristics. In addition, controlling for prior strategic change is advantageous because reverse causality implies that strategies and also the level of strategic flexibility impact the choice of executives (e.g., Datta & Rajagopalan, 1998; Finkelstein et al., 2009; Pettigrew, 1992) and because strategic flexibility might be predictive for the amount of post-succession strategic change.

### 3.2 Sample

I derive my sample from *Standard & Poor's 500 (S&P 500)* companies. I select all companies run by their current CEOs for at least three years as of 2010, except those run by their founders or by CEOs that have been in position for longer than the company data (10-K statements) are available. This sample provides me with 156 companies. Data for the six years surrounding the appointment date were gathered manually from 10-K and proxy statements and downloaded from *Datastream*. I include the year of appointment in the prior-succession period, when the turnover happened less than six months before the next fiscal year end, and vice versa. Unfortunately, not all companies consistently report all data. Strategic change for example is measured based on six previously used indicators (e.g., Datta et al., 2003; Finkelstein & Hambrick, 1990; Zhang & Rajagopalan, 2010): advertising expenses, R&D expenses, SG&A expenses, and inventories, all as percentage of sales; leverage (debt over equity); and equipment newness (net over gross PP&E). Finkelstein and Hambrick (1990) yield similar results with two measures for strategic persistence, one based on all six measures and one based on only four measures without R&D and advertising expenses, the two least frequently reported indicators. Because these are included in SG&A expenses when not reported separately, I include all data sets that report at least four indicators. Finally, I standardize all differences in the strategic indicators between the start and the end of my observation period and rule out all data sets that return a standard deviation of three or more. This process provides me with a final sample of 100 companies.

### 3.3 Measures

**Dependent Variable.** I measure *post-succession strategic change* similarly to the prior research and include all records that report at least four indicators. I calculate the absolute differences of the indicators (Zhang & Rajagopalan, 2010) between the third year of the post-succession period ( $t_3$ ) and the last year the CEO did not influence the company for more than six months ( $t_0$ ), standardize these differences, and rule out all cases that return a standard deviation of three or more. The composite measure is calculated by averaging (Datta et al., 2003; Zhang & Rajagopalan, 2010) the standardized differences of the indicators.

**Independent Variables.** Biographical data on CEOs and their predecessors are collected from *Marquis Who's Who*, companies' web sites, and press articles archived in *LexisNexis*. I collected year or date of birth and information on all career steps, including employer and industry information. I measure organizational tenure, industrial tenure, and age in years in the year  $t_0$  and calculate the difference between new CEOs and their predecessors by deducting the values of the predecessors from the values of the successors.

**Control Variables.** To avoid endogeneity issues, I add four control variables that might have effects on the dependent and the independent variables. First, I control for *prior strategic change*, which I measure like the dependent variable, but for the three years before the new CEO took office. Thus, I take the difference in the strategic indicators between the defined year 0 and two years earlier ( $t_2 - t_0$ ).

Second, *firm size* seems to relate positively to the selection of longer tenured and older CEOs (Datta & Rajagopalan, 1998) and negatively to the amount of strategic change (Finkelstein & Hambrick, 1990). I measure *firm size* as the natural logarithm of employees in year  $t_0$  (e.g.,

Carpenter, 2002; Datta et al., 2003). The natural logarithm of firm sales (e.g., Carpenter et al., 2001) returns very similar results.

Third, *prior performance* might affect the amount of post-succession strategic change (Boeker, 1997b) as well as the executive selection (Datta & Rajagopalan, 1998). I measure *prior performance* as the development (percentage change) of the return on assets adjusted by the percentage change of the industries' return on assets between the year -2 and the year 0.

Fourth, I control for top management team turnover (*TMT turnover*) during the succession period, because it might affect overall strategic change and the new CEO's influence on the organization (Barron et al., 2011). I measure *TMT turnover* as the average percentage turnover of top managers (Carpenter & Fredrickson, 2001) in the years  $t_0$  and  $t_1$  as reported in the 10-K or proxy statements (Carpenter, Pollock, & Leary, 2003; Kor, 2003). Alternative time spans return similar results.

Furthermore, I add two control variables to verify that the sample is not biasing the results by selection. First, early observation periods might be different from later periods, because CEOs of early observation periods remained in office until early 2010, and thereby proved to be rather successful. Therefore, I add the year defined as  $t_0$  as the fifth control variable (*year  $t_0$* ).

Second, because my sample consists of companies from different industries that might differ with regards to the levels of strategic change, I add a dummy variable to differentiate between manufacturing and construction companies (One-digit SIC-Code 1-3) and others to control for industry effects (*Industry 1-3*). To identify the industry, I take the first digit of the primary SIC-code listed in *Hoover's* database. Alternative variables like manufacturing companies (Industries 2 and 3) or industries 1 to 5 return similar results.

## 4 Data Analysis and Results

As I measure strategic change between two points in time and thereby include the time lag in the dependent variable I am able to specify a cross-sectional regression model to test my hypotheses. Similar to prior studies on strategic change, I estimate OLS models (Datta et al., 2003; Wiersema & Bantel, 1992).

TABLE III-1

### Descriptive Statistics and Correlation Matrix

	Mean	s.d.	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Post-succession. strategic change	-.16	.27									
2. Prior strategic change	-.16	.28	.30***								
3. Firm size	10.00	1.42	-.29**	-.23**							
4. Prior performance	.06	6.16	.00	.01	.02						
5. TMT turnover	.17	.10	-.04	.25**	-.09	-.15					
6. Year $t_0$	2003	2.80	-.19*	.08	.20*	-.12	.06				
7. Industry 1-3	.62	.49	-.07	-.10	-.10	.05	-.02	-.13			
8. Difference in org. tenure	-7.89	12.62	.17*	-.15	.16	-.02	-.05	-.02	-.05		
9. Difference in industrial tenure	-3.74	8.17	.22*	-.11	.17*	-.07	.03	.09	-.10	.72***	
10. Difference in age	-11.07	8.24	.30***	.00	.15	-.05	.09	.14	.03	.16	.19*

\*  $p \leq .050$ ; \*\*  $p \leq .010$ ; \*\*\*  $p \leq .001$

Table III-1 presents the descriptive statistics of my sample with the means, standard deviations, and correlations among the variables. The differences in organizational tenure range from -36 to +26 years with a mean difference of -7.9 years. Not surprisingly, the mean difference in industrial tenure is smaller and only -3.8 years. The differences in age range from -31 to +10 years with a mean difference of -11.1 years. The negative nature of all three averages are natural rejuvenation effects.

The matrix in Table III-1 indicates several significant correlations among the variables. In support of my expectations, *post-succession strategic change* correlates positively with *prior strategic change* and negatively with *firm size*. Surprisingly, *year  $t_0$*  correlates negatively with

the dependent variable (1). In addition, the explaining variables (8-10) correlate positively with *post-succession strategic change*. These preliminary results support my hypotheses. Interestingly, *TMT turnover* correlates with *prior strategic change* but not with *post-succession strategic change*. This might indicate that turnover is more a result of changing strategies than an antecedent. Finally, some explaining variables correlate with each other. Not surprisingly, *difference in industrial tenure* strongly and positively correlates with *difference in organizational tenure* and less strongly with *difference in age*.

In Table III-2, I present four models. In Model 1, I show the control variables that I added for endogeneity or for sampling reasons. In Model 2, I add the two explaining variables *difference in organizational tenure* and *difference in age* to test hypotheses H1a and H2. To test hypotheses H1b and H1c, I add the *difference in industrial tenure* in Model 3 and remove *difference in organizational tenure* in Model 4 for multicollinearity reasons.

TABLE III-2

Results of Regression Analysis<sup>a</sup>

Variable	Model 1	Model 2	Model 3	Model 4
Prior strategic change	.29**	.31***	.32***	.32***
Firm size	-.21*	-.28**	-.29**	-.29**
Prior performance	-.04	-.02	-.02	-.01
TMT turnover	-.13	-.16 <sup>†</sup>	-.17 <sup>†</sup>	-.17*
Year t <sub>0</sub>	-.18 <sup>†</sup>	-.21*	-.23*	-.23**
Industry 1-3	-.09	-.10	-.09	-.09
Difference in organizational tenure		.19*	.03	
Difference in industrial tenure			.23 <sup>†</sup>	.25**
Difference in age		.35***	.34***	.34***
R <sup>2</sup>	.19	.37	.39	.39
Change in R <sup>2</sup>		.18	.02	.20 <sup>b</sup>
Adjusted R <sup>2</sup>	.14	.31	.33	.34
Change in adjusted R <sup>2</sup>		.17	.02	.20 <sup>b</sup>
F	3.74**	6.61***	6.43***	7.30***

<sup>a</sup> Values shown are the standardized regression coefficients. n=100

<sup>b</sup> Relative to Model 1

<sup>†</sup> p ≤ .100; \* p ≤ .050; \*\* p ≤ .010; \*\*\* p ≤ .001



As expected, Model 1 indicates that *prior strategic change* positively and *firm size* negatively relate to *post-succession strategic change*. In turn, I do not observe significant effects for *prior performance*. I tested five alternative measures for *prior performance* (not industry adjusted RoA, adjusted and not adjusted RoE and RoS), but all of them yielded similar coefficients and even statistically weaker results. Taking a glance at *TMT turnover* in Models 2-4 suggests that it has a slightly negative association with *post-succession strategic change*. This finding indicates that high turnover does not yield high strategic change, which could support ability-related arguments, because it might suggest that teams that experience high turnover lack internal knowledge and an internal network to implement strategic change at least within their first three years in office. I also test alternative measures for *TMT turnover*, none of which returns stronger or substantially different results. Additionally, overall *post-succession strategic change* seems to be slightly lower in more recent observation periods (high *year t<sub>0</sub>*) than in earlier periods, because *year t<sub>0</sub>* is negatively associated with the dependent variable. For early observation periods, the sample contains only CEOs who demonstrate success by remaining in office until 2010, while for later periods, CEOs must still prove whether they will stay in office for a long time. It might be that CEOs are regarded as particularly successful and thus rewarded with long tenures in office, if they implement great change during their first years in charge. Such behavior could explain why earlier observation periods, on average, show greater changes than more recent periods. Finally, the industry for which I tested several alternative measures (manufacturing vs. non-manufacturing companies, industries with SIC Codes 1-5 vs. 6-8) that yielded similar coefficients and even statistically weaker results has no significant relation to the dependent variable.

In Model 2, two explaining variables *difference in organizational tenure* and *difference in age* add substantial explanatory value, raising the  $R^2$  by 0.18 to 0.37 and the adjusted  $R^2$  by almost the same amount to 0.31. In addition, regarding the F-value, Model 2 is more significant than

Model 1. Hence, adding these two explaining variables is beneficial to the overall model fit. Moreover, the significant coefficients support my hypotheses H1a and H2.

I add *difference in industrial tenure* to Model 3, which yields additional explanatory value by raising the adjusted  $R^2$  by 0.02 to 0.33. In this model, I report a significantly positive effect of *difference in industrial tenure* on *post-succession strategic change*, while the significant effect of *difference in organizational tenure* disappears. Accordingly, I observe low tolerance for collinearity and high variance inflation factors in this model. In order to obtain more valid results for *difference in industrial tenure*, I remove *difference in organizational tenure* from Model 4, where I report a significantly positive effect of *difference in industrial tenure* on *post-succession strategic change* and higher and even statistically stronger coefficients than *difference in organizational tenure* yielded in Model 2. Hence, hypotheses H1b and H1c are supported. Moreover, Models 3 and 4 indicate support for hypothesis H2.

In a nutshell, *difference in organizational tenure*, *industrial tenure*, and *age* seem to have positive effects on *post-succession strategic change*. Moreover, *difference in industrial tenure* seems to have similar effects on strategic change as *difference in organizational tenure*, and yields stronger results, because it includes more information. Thus, I find support for all hypotheses. Moreover, the overall level of explained variance with an  $R^2$  of 0.39 and an adjusted  $R^2$  of 0.34 in Model 4 is higher than in prior studies on similar relations (Datta et al., 2003; Finkelstein & Hambrick, 1990; Wiersema & Bantel, 1992).

## 5 Discussion

This study provides a framework on how tenure and age might affect the willingness and ability of executives to initiate strategic changes and ultimately the amount of implemented lagged strategic change. It integrates arguments from upper echelons research with those predominantly put forward in succession-consequence research and proposes a more fine-grained view of how tenure and age might affect the amount of strategic change. Thereby, this study contributes to the theory on that matter.

The empirical findings that tenure (organizational and industrial) and age differences positively affect lagged strategic change contribute to existing research on the effects of tenure and age and shed new light on apparently well-explored relations. Keeping in mind the normal rejuvenation in terms of tenure (- 7.9 years for organizational and - 3.7 years for industrial tenure) and age (-11.1 years), the results indicate that successors who are of similar tenure and of similar age as their predecessors seem to implement more strategic change than successors who are considerably shorter tenured and younger than normal rejuvenation requires. As mentioned earlier, this is somewhat counterintuitive to interpretations of prior findings of upper echelons research (e.g., Datta et al., 2003; Finkelstein & Hambrick, 1990; Wiersema & Bantel, 1992), but it is not contradictive. I agree with other researchers that organizational and industrial tenure and age might have a negative association with strategic change, but I also suggest that tenure and age differences between new and preceding CEOs positively relate to lagged strategic change. As we, for the first time, analyze characteristics differences and lagged strategic change, control for prior strategic change and sample newly selected CEOs at the same time, reverse causal effects and tenures in office cause less bias in this than in prior studies. Hence, I present findings that are more specific to the causal effects organizational and industrial tenure and age might have on post-succession strategic change.

Together with two complementary findings from prior literature a more holistic understanding of the interaction between tenure, age, and strategic change might be developed; namely, that strategically flexible companies select, on average, younger and shorter tenured CEOs (Datta & Rajagopalan, 1998; Zhang & Rajagopalan, 2003), that executives who are relatively old and long-tenured compared to their predecessors inject additional change into the organization in the post-succession period, and that strategic change generally decreases over the course of an executive's tenure in office (e.g., Abebe, 2009; Boeker, 1997b; Finkelstein et al., 2009).

Moreover, in this study I apply the research design I developed in Chapter II and measure lagged strategic change in a period of stable characteristics, directly after a measured change in characteristics, while controlling for prior strategic change. The importance of designing studies that allow for drawing conclusions on causality and the relevance of the design criteria presented here are underscored in this study, because the findings indicate that the reverse causal interaction between strategic change and tenure or age work in different directions and because the application of the design criteria to apparently well-explored relations lead to different conclusions than the prior research provides. Hence, providing evidence for the importance of these study design criteria might encourage researchers to apply this methodology in future upper echelons research.

In addition, the different interpretations of the causal relations between tenure, age, and corporate strategic change, unlike that of prior research, might be of great practical relevance. Practitioners—such as those who must select new CEOs—who interpret findings on tenure and age as though short-tenured and young CEOs will generate more strategic change might have to adjust this interpretation. Furthermore, the analysis of new CEOs and the comparison to their predecessors allows for better transferability to situations in which boards must make replacement decisions. Boards might compare potential candidates to the departing executive rather than comparing entire top management teams to a sample of other teams—like most

prior studies do. Hence, delivering on the targets set forth by Hambrick and Mason (1984), I provide insights for executive selection and for the prediction of the amount of post-succession strategic change.

Apart from these contributions, several aspects that might be objects of future research are not covered here. The newly proposed structure of aspects that mediate between tenure and age and strategic change remains to be tested in detail, especially with regards to the relative importance of the different aspects. Future research might attempt to disentangle the effects of relative tenure and age on the separate aspects of the willingness and ability to initiate strategic change. In particular, distinguishing between the aspects of “mandate for change,” which might extrinsically affect the willingness for change from other willingness-related aspects that might intrinsically affect the willingness for change, might generate valuable insights on how to foster willingness for change among executives.

Moreover, so far upper echelons researchers examining strategic change have ignored characteristics like the type of education and functional background (see Finkelstein et al., 2009). It might be fruitful to analyze whether such background differences in successor and predecessor CEOs also explain post-succession strategic change. The research design that I outline in this study that particularly takes into account differences between new and departing executives could pave the way to assess more characteristics differences as antecedents of the amount of strategic change. Thereby, scholars could verify whether age and tenure differences affect strategic change beyond the effects of different education and career experiences. However, if different education or experiences or other characteristics are indicated by tenure or age, then this should yield u-shaped relations between tenure or age and the dependent variable, because positive as well as negative differences would then reflect differences in other characteristics. When controlling for absolute differences in tenure and

age, I do not find significant results. Hence, I am confident that age and tenure differences are not just indicators for other characteristics differences and that my results would persist even if other characteristics differences were included in the model.

In the future, upper echelons researchers could also take into account different reasons for successions (e.g., Fee & Hadlock, 2004), which might have effects on executive selection and thus on changing characteristics. Because reasons for succession could serve as indicators for explicit or perceived mandates to change, analyzing them as antecedents for changing executives' characteristics might yield explanatory value for post-succession strategic change. This could bridge the gap between upper echelons and succession-consequence research. Barron et al. (2011) already make an attempt in that direction. They show that reasons for succession as well as the type of successor (outsider vs. insider) have an association with strategic change.

A further aspect that is not covered in this study is whether the findings hold true for top management roles other than the CEO. While agreeing that entire top management teams have more impact on strategic actions than single individuals, focusing on individual roles is required in order to be able to draw any valid conclusions on causality. The results in this study underscore the importance of the call for designing studies in such a way (Finkelstein et al., 2009). However, researchers might assess whether the effects characteristics have on strategic change differ across different roles.

Finally, this study has some limitations that must be mentioned. First, scholars pursuing archival data-based empirical studies are unable to confirm causality. Although I am confident that I have eliminated reverse causal effects more successfully than has been done in prior studies, I am not able to confirm causality, either.

Second, I analyze strategic change based on four to six indicators. However, prior research shows that measuring strategic persistence with six or with four measures returns similar results (Finkelstein & Hambrick, 1990). Accordingly, when controlling for the number of indicators, I do not observe significant results. In addition, I control for prior strategic change. Furthermore, characteristics differences should be independent from having four or six indicators. Thus, even if the number of indicators is predictive of the observed amount of strategic change, results on the effects of characteristics should not be substantially affected.

Third, I neither include moderator variables, such as managerial discretion and job demands (Hambrick, 2007) in my analysis, nor do I sample firms from one industry. However, the rationales why and how tenure and age should affect strategic change, which researchers provide in prior literature, are not specific to certain contexts. Furthermore, I control for contextual factors in multiple ways. I analyze relative characteristics, which should be independent of contextual factors; control for prior strategic change, which should reflect systematic differences in the amount of strategic flexibility; and I control for industry and test various measures, none of which returns significant results. Therefore, I do not believe that this substantially affects my results.

## **6 Concluding Remarks**

In this study, I propose a conceptual structure of aspects that might mediate between executives' tenures and ages and lagged strategic change. Therefore, I integrate arguments on the willingness and ability to initiate change put forward in different prior research. This integration provides future research with new avenues to analyze through which aspects

tenure and age differences affect strategic change, which would further contribute to knowledge on how characteristics become reflected in strategic outcomes.

Furthermore, with my empirical analyses, I shed new light on apparently well-explored relations. Thereby, the empirical findings underscore the relevance of the study design, which I apply here. This might encourage researchers to reassess other previously explored associations in light of reverse causal effects.

Finally, the new insights on how relative tenure and age affect post-succession strategic change contribute to knowledge on that matter and might be valuable for practitioners when selecting executives and for anticipating the amount of competitors' post-succession strategic change.



#### **IV. Different Preferred Strategies, Change-affinity, or Change-ability? Differentiation between different Effects Characteristics Might Have on Strategic Change**

In the second chapter I proposed a refined upper echelons framework and derived research design criteria to comply with it. In the third chapter I then applied these criteria to apparently well-explored relations and thereby, contributed to knowledge on the relation between executives' organizational and industrial tenure and age and strategic change and demonstrated the importance of research design for interpreting measured associations with regards to the underlying causal effects.

Instead of analyzing only whether characteristics have causal effects on strategic outcomes or not, in this chapter, I attempt to conceptually and methodologically differentiate between different types of effects characteristics might have. According to upper echelons theory, similar characteristics indicate similar frames of reference and thus similar strategic preferences. In addition, arguments have been presented that characteristics like tenure and age affect strategic change, because they affect an executives' affinity or ability for change regardless of his or her strategic preferences. Therefore, I seek to advance theory by explicitly differentiating between these three effects. Accordingly, I formulate hypotheses on how functional backgrounds, educational types and levels might affect strategic change and test the hypotheses with a sample of S&P 500 companies.

With my findings I underpin that different characteristics have different types of effects on strategies and for the first time provide evidence that background differences between successor and predecessor CEOs yield strategic change in the post-succession period which indicates that similar backgrounds yield similar strategic preferences.

## **1 Introduction**

Since its inception, upper echelons theory (Hambrick & Mason, 1984) has been the foundation for a great deal of the ensuing research on the effects executives' characteristics have on strategies and on strategic change (Carpenter, 2011; Finkelstein et al., 2009; Hambrick, 2007). Upper echelons theory suggests that strategies are the result of strategic decisions by top managers (Child, 1972; Hambrick & Mason, 1984) based on—due to their limited ability to process all information objectively (see also Cyert & March, 1963; March & Simon, 1958)—information that has been unconsciously filtered through their frames of reference. Consequently, executives' frames of reference, which are defined as cognitive abilities, values, and beliefs and that might be indicated by executives' characteristics, become reflected in strategic choices (Hambrick & Mason, 1984). Consequently, executives that have different frames of reference unconsciously favor and pursue different strategies. Accordingly, researchers have proposed that functional orientation influences the choice of strategies such as differentiation or cost-leadership (Dearborn & Simon, 1958; Hambrick & Mason, 1984; Miles & Snow, 1978). However, in upper echelons research only executives' tenure, age, and educational level have consistently been identified as antecedents for strategic change (see Finkelstein et al., 2009), and the explanations for these relations does not build on the proposition that executives with different frames of reference prefer different strategies. Tenure and age, for example, are assumed to affect the willingness to initiate change (e.g., Finkelstein & Hambrick, 1990; Geletkanycz & Black, 2001; Wiersema & Bantel, 1992) through effects like the absence of commitment to the status quo (Geletkanycz & Black, 2001; Hambrick et al., 1993) and personal risks from change (Finkelstein & Hambrick, 1990; Wiersema & Bantel, 1992), but not through unconsciously preferring different strategies than their predecessors. Similarly, researchers argue that the educational level is an indicator of the ability to deal with complexity (Hitt & Tyler, 1991) and that high

cognitive ability enables executives to identify change opportunities and thus relates to openness for change (e.g., Bantel & Jackson, 1989; Wiersema & Bantel, 1992). Because different educational levels might indicate different socio-economic routes and thus different values and beliefs (Finkelstein et al., 2009; Smart & Pascarella, 1986), different educational levels could even indicate different preferred strategies (Hambrick & Mason, 1984).

However, in prior research, scholars do not analyze differences between successors and predecessors to approximate changes in values and beliefs and thus do not uncover a relation between the differences in educational levels and strategic change. Hence, those associations that have been found between characteristics and strategic change are explained by the effects that characteristics have on the willingness to initiate strategic change but not by effects stemming from different preferred strategies.

Nevertheless, upper echelons researchers uncover many associations between strategies and characteristics that might support the idea that characteristics indicate strategic preferences. For example, companies' growth and innovation levels, as well as their R&D or advertising intensity, have a positive association with their executives' experiences in market-oriented functions (e.g., Barker & Mueller, 2002; Rajagopalan & Datta, 1996; Strandholm et al., 2004). And firms' international exposure has a positive association with their executives' international experience (e.g., Carpenter & Fredrickson, 2001; Reuber & Fischer, 1997; Sambharya, 1996). However, researchers are not conclusive on whether the level of executives' characteristics is the antecedent or the result of the observed strategic indicators (e.g., Carpenter et al., 2004; Finkelstein et al., 2009; Hambrick, 2007), because they do not measure strategic change but only a strategy at one point in time and do not analyze changes in characteristics. The problem of reverse causality might be severe, because scholars theoretically propose (e.g., Gupta, 1986; Judge & Ferris, 1992; Wright & Snell, 1998) and empirically find (e.g., Guthrie & Datta, 1997; Strandholm et al., 2004) that matching

managers to strategies might be common practice in selection decisions. Additionally, incumbent managers, which according to upper echelons theory pursue strategies that reflect their characteristics, have the tendency to select, to suggest, or even to develop successors with similar characteristics or cognitive profiles (e.g., Bigley & Wiersema, 2002; Zajac & Westphal, 1996). Further, managers might even self-select themselves to companies that fit their characteristics or that already have other similar managers (Beckman & Burton, 2011; Finkelstein et al., 2009; Larsen, 2004).

In short, researchers that find that certain characteristics have an association with strategic change argue that the characteristics affect the willingness for change through aspects other than the preference for different strategies, and researchers that argue and find that certain characteristics have an association with certain strategies are not conclusive on causality. Hence, the central propositions of upper echelons theory that different frames of reference indicate different strategic preferences and that therefore, differences in frames of reference between successors and predecessors should lead to a shift in strategic actions remains to be underpinned. Moreover, arguments in prior research suggest that different characteristics affect strategic outcomes through different types of effects. However, this idea has neither been formulated explicitly nor has it been empirically underpinned.

With this study, I aim to shed light on the question of which characteristics affect the amount of strategic change through what type of effect and to provide evidence for the role strategic preferences have in the initiation of strategic change. Apart from the effects on preferred strategies and the effects on other willingness-related aspects, in the following labeled as change-affinity, a third type of effect related to the ability of an executive to implement strategic change exists (e.g., Karaevli, 2007; Wowak & Hambrick, 2010; Zhang & Rajagopalan, 2010). In this study, I argue that the type of effect a characteristic might have entails different implications for hypothesis formulation; namely, whether the absolute

difference (distance) between succeeding CEOs, the difference compared to the preceding CEO, or the characteristic in absolute terms is influential on strategic change. This differentiation also allows for distinguishing the different effects methodologically. Accordingly, based on the arguments in prior research, I develop hypotheses on how functional background, educational type, holding an MBA degree, and the educational level have associations with strategic change. Industrial tenure and age, which were covered in detail in Chapter III, are included as control variables. Thereby, in this study, I examine the vast majority of background characteristics that have so far been tested from the upper echelons theory's perspective (see Carpenter et al., 2004; Finkelstein et al., 2009). By covering various characteristics and by distinguishing the three phenomena of how characteristics might affect strategic change, I contribute to the upper echelons theory.

In order to draw conclusions on causality, while acknowledging that quantitative archival data-based studies are unable to confirm causality, I apply the research design proposed in Chapter II. Hence, I analyze lagged strategic change in a period with stable executive characteristics starting directly after a measured change in those characteristics while controlling for prior strategic change. In consequence, I analyze individual executives instead of entire top management teams. I choose CEOs as presumably the most important decision maker among top management team members (e.g., Barker & Mueller, 2002; Datta et al., 2003; Hambrick et al., 1993).

Based on a subsample of *Standard & Poor's 500* companies, I find that distances in functional backgrounds and educational types, indicating different preferred strategies between successors and predecessors, lead to post-succession strategic change. In addition, holding an MBA degree seems to be advantageous for new CEOs to drive strategic change, which indicates ability-related effects. In turn, results do not suggest that the educational level is somehow related to the amount of post-succession strategic change. Moreover, with this

study, I reaffirm the findings generated in Chapter III that tenure and age differences positively affect strategic change, which indicates effects on change-affinity and change-ability.

This study is organized as follows: First, I cluster the upper echelons literature according to the types of effects characteristics might have on strategic outcome into three archetypal phenomena and derive implications for hypothesis development. Second, I develop hypotheses. Third, I discuss the methods adopted including sampling and measures, followed by the presentation of the empirical results. Finally, I discuss the implications and some limitations of the study and conclude with some final remarks.

## **2 Different Types of Characteristics Effects**

Upper echelons researchers derive hypotheses from three different types of effects that characteristics can have or indicate. First, according to the idea that executives' attention gravitates to topics that are related to prior functional and educational experience (Dearborn & Simon, 1958; Hambrick & Mason, 1984; Waller, Huber, & Glick, 1995), some scholars argue that different types of executives prefer different strategies. Exemplary findings suggest that a firm's innovation and its market focus have positive associations with the experience in market-oriented functions of its CEO (e.g., Barker & Mueller, 2002; Strandholm et al., 2004) and that a firm's international exposure has a positive association with its top managers' international experience (e.g., Reuber & Fischer, 1997; Tihanyi et al., 2000). In the light of this argument, one could expect changing strategies once managerial characteristics and thus managers' preferred strategies changes. Consequently, when deriving hypotheses on the antecedents of strategic change, the argument is that executives with, for example, more or

less marketing background than their predecessors initiate strategic changes, because both constellations indicate different preferred strategies (i.e., more or less market focus).

Therefore, absolute characteristics differences, in the following labeled as characteristics distances, positively relate to post-succession strategic change.

Second, in other studies, researchers argue that different types of executives prefer different amounts of change. This argument suggests that, regardless of their strategic preferences, individuals differ concerning their change-affinity and thus their different biases when processing information and deciding on strategic change or continuity. Exemplary arguments are that risk adversity increases and flexibility decreases as people age (Carlson & Karlsson, 1970; Grimm & Smith, 1991; Wiersema & Bantel, 1992) and that tenure relates positively to executives' commitment to the values of a firm (Schmidt & Posner, 1983; Wiersema & Bantel, 1992), to current strategies (Staw & Ross, 1980; Stevens et al., 1978), to beliefs and concepts accepted in an industry (Hambrick et al., 1993), and to personal risks from change (Coffee, 1988; Finkelstein & Hambrick, 1990; Vancil, 1987). Hence, regardless of strategic preferences such as defender versus prospector strategies (Miles, Snow, Meyer, & Coleman, 1978), certain characteristics seem to indicate or foster the affinity to change a given strategy. As such, change-affinity-related arguments focus just on incumbent or new executives, an argument can be made that the change-affinity indicated by characteristics like the tenure or age of a new executive relates to the amount of post-succession strategic change.

Nevertheless, each willingness- or ability-related aspect should be evaluated carefully with regards to the predecessor or to the firm's relative environment, which could be indicated by the predecessor. As argued in Chapter III, differences among individuals might not be symmetric across different environments but could be dependent on their relative environment (Belliveau et al., 1996; Fiss, 2006). For example, a manager could appear as rather short-tenured compared to the sample, even though he or she might be rather long-tenured

compared to the predecessor or to that firm's particular culture. This asymmetry might have two effects. First, a CEO's top management colleagues in a short-tenure culture might accept him or her as a leader although he or she might have a tenure level that at other firms would be regarded as too short to lead the company. Second, the CEO in this short-tenure culture might be more self-confident than he or she would be in a long-tenure environment. While the first effect would affect the CEO's ability to drive change, the second would affect the CEO's willingness to drive change. Hence, observing a CEO that is short-tenured compared to a sample but long-tenured compared to his environment could lead to misleading conclusions with regards to the question of whether and how tenure relates to the amount of post-succession strategic change. The resulting bias could be substantial due to reverse causality. As firms' strategy as well as strategic flexibility and culture influence the selection and attraction of executives (e.g., Datta & Rajagopalan, 1998; Gupta, 1986; Wright & Snell, 1998), such characteristics differences across firms could explain prior strategic differences as well as lagged strategies or lagged strategic flexibility. Hence, if the environment is influential on the effect a characteristic might have, then the hypothesis could be that the relative characteristic relate to post-succession strategic change. Relative characteristics could be measured, for example, as tenure differences vis-à-vis other top managers or board members of the particular firm (Fiss, 2006). Alternatively, one could also take the predecessor as an approximation for what the particular environment is used to and thus calculate the characteristics differences vis-à-vis the predecessor.

The third effect characteristics might have or indicate is the ability to implement change, which is promoted in succession-consequence rather than in upper echelons research. This aspect differs from the other two because it suggests that, regardless of the willingness to initiate change due to strategic preferences or change-affinity, executives might differ with regards to their capabilities to initiate and implement changes. Researchers, for example,



argue that an internal network and internal knowledge are important to successfully implement strategic change (e.g., Karaevli, 2007; Shen & Cannella, 2002; Zhang & Rajagopalan, 2010), and that the importance of these attributes might be dependent on the predecessors' internal network and knowledge as well (Cao et al., 2006). Hence, like for change-affinity, hypotheses on this aspect might either be developed on absolute characteristics or on relative characteristics depending on whether the aspect is dependent on the predecessor or of the particular environment.

In a nutshell, characteristics that relate to preferred strategies might indicate the willingness for change when the distance between successors and predecessors is high. Moreover, characteristics that affect change-affinity might point to the willingness for change when the characteristic is high in relative or absolute terms, depending on whether the predecessor or the environment partially determines the effect this characteristic has. Finally, characteristics that affect the ability to drive strategic change take effect similar to those affecting change-affinity.

Unfortunately, not all characteristics affect only one of the various aspects. For example, researchers suggest that the educational level has an association with strategic change due to higher change-affinity (Bantel & Jackson, 1989; Wiersema & Bantel, 1992). Hence, when controlling for prior strategic flexibility, one would expect that the amount of strategic change increases if the successor is more highly educated than the predecessor and thus if the difference in their educational levels is positive. In addition, researchers suggest that the educational level is an indicator of different socio-economic backgrounds (Finkelstein et al., 2009; Smart & Pascarella, 1986), which according to upper echelons theory could indicate different strategic preferences (Hambrick & Mason, 1984). Hence, in the post-succession period, change is expected if the successor is more or less educated than the predecessor and thus if the (absolute) distance in the educational level is high. Moreover, the absolute

cognitive abilities of the predecessor and the successor moderate the importance of their frames of reference for information processing (Hambrick et al., 2005). This moderation can have ambiguous effects on post-succession strategic change. Thus, one characteristic might have several effects that might even work in different directions. Three guiding questions could help to systematically evaluate how characteristics might relate to post-succession strategic change. First, does the characteristic indicate a preferred strategy? Second, might the characteristic affect or indicate change-affinity? Third, might the characteristic affect or indicate the ability to implement changes? Figure IV-1 summarizes these questions and the implications the possible answers entail.

FIGURE IV-1

Guiding Questions for Systematic Characteristics Assessment

Guiding questions	Specifying questions	Implications for hypotheses
<b>Willingness-related</b>		
Q1: Does the characteristic indicate preferred strategies?	Yes	Distance
	No	No effect
Q2: Does the characteristic affect or indicate change-affinity?	Yes →	Q2.1: Dependent of predecessor or relative environment? Yes → Difference
		No → Absolute
	No	No effect
-----		
<b>Ability-related</b>		
Q3: Does the characteristic affect or indicate change-ability?	Yes →	Q3.1: Dependent of predecessor or relative environment? Yes → Difference
		No → Absolute
	No	No effect

In summary, (Q1) characteristics that indicate preferred strategies might lead to strategic change if the distance to the predecessor is high, and characteristics that affect the (Q2)

change-affinity or the (Q3) change-ability might lead to post-succession strategic change if they are distinct in absolute or in relative terms (Q2.1 and Q3.1).

### **3 Hypotheses**

Following the structure outlined in the previous section, in this section, I derive hypotheses from prior research for how the functional background, educational type, and the educational level might affect post-succession strategic change.

#### **3.1 Functional Background**

According to upper echelons theory, an important source of information bias is functional experience (Finkelstein et al., 2009; Hambrick & Mason, 1984). Finkelstein et al. (2009) summarize that three mechanisms lead to the correspondence between functional experiences and strategic preferences. First, individuals with different personalities might be drawn to different functional tracks at the start of their careers (Schein, 1967). Second, while working in a functional area, individuals more and more identify themselves with common modes of thinking, values, and beliefs (Mortimer & Lorence, 1979). Third, even when working as general managers, executives still focus more on familiar issues and try to find solutions that reflect their experiences from their prior functional areas (Dearborn & Simon, 1958; March & Simon, 1958). Several empirical findings underpin the relation between functional background and strategic preferences. In many of these studies, the authors differentiate between companies that focus on product differentiation and innovation, sometimes called “prospector” companies; and companies that focus on efficiency and price leadership,

sometimes called “defender” companies (Miles et al., 1978). Findings suggest that executives with a primary background in output-oriented functions such as Product-R&D and marketing tend to prefer prospector- or market-oriented strategies and that executives more experienced in finance or efficiency focused functions tend to prefer defender- or efficiency focused strategies (e.g., Rajagopalan & Datta, 1996; Strandholm et al., 2004; Thomas, Litschert, & Ramaswamy, 1991). Moreover researchers find that executives with a primary background in output-oriented functions focus more on R&D (e.g., Barker & Mueller, 2002; Boeker, 1997a) and that those executives with a primary background in R&D are more open to pursuing technological alliance opportunities than their peers (Tyler & Steensma, 1998). Hence, positively answering question Q1, I assume that different functional backgrounds indicate different preferred strategies. This assumption leads to the first hypothesis:

*Hypothesis 1: The distance in functional background between successor and predecessor CEOs positively relates to post-succession strategic change.*

### **3.2 Educational Type**

Upper echelons researchers suggest that managers’ types of education influence or at least indicate their preferred strategies. Hambrick and Mason (1984) suggest that the type of formal education might serve as an indicator of a person’s cognitive base. They argue that education not only provides specific knowledge but can also serve as an indicator of values and preferences and assume that students enrolled in an English literature curriculum are different from students enrolled in a business curriculum (Hambrick & Mason, 1984; Schein, 1967). Building on that argument, Hitt and Tyler (1991) argue that the type of formal education affects the executives’ cognitive developed models and therefore influences strategic

decisions. Here, results indicate that executives with different types of educational backgrounds evaluate acquisition candidates differently (Hitt & Tyler, 1991). Other findings suggest that having obtained science or engineering degrees has a positive association with R&D spending (Barker & Mueller, 2002) and that a technical education has a positive association with building technical alliances (Tyler & Steensma, 1998). Hence, the argument can be that the type of education indicates certain strategic preferences (Q1 = Yes).

Accordingly, I hypothesize:

*Hypothesis 2a: The distance in educational type between successor and predecessor CEOs positively relates to post-succession strategic change.*

Moreover, researchers suggest that managers holding MBA degrees are more conservative and somewhat different from their peers who do not hold these degrees (Bamber et al., 2010; Hambrick & Mason, 1984). Accordingly, findings exist that companies with managers holding MBA degrees spend less on R&D (Barker & Mueller, 2002), make more acquisitions (Palmer & Barber, 2001), and pursue different strategies in terms of capital expenditures, leverage, and diversification (Bertrand & Schoar, 2003). In other words, managers holding MBA degrees prefer different strategies than other managers. As this positively answers question Q1, I hypothesize:

*Hypothesis 2b: The distance in terms of holding or not holding an MBA degree between successor and predecessor CEOs positively relates to post-succession strategic change.*

Finally, findings exist that CEOs having MBAs are better trained to make decisions especially in uncertain situations (Geletkanycz & Black, 2001) and thus might be better able to implement changes (Q3 = Yes). Analyzing managers in a situation of high uncertainty,

Grimm and Smith (1991) find that railroad companies with executives having MBA degrees changed more after deregulation than did competitors with executives that did not hold MBA degrees. Researchers theorizing on the phases of CEOs' tenure in office suggest that in the early phase of tenure uncertainty is high and at the same time managers are expected to show that they make a difference (Hambrick & Fukutomi, 1991). Hence, as the capabilities associated with MBA degrees are specifically important in uncertain situations (Geletkanycz & Black, 2001; Grimm & Smith, 1991), one can argue that holding an MBA degree makes a difference particularly when an executive is new to a position. Therefore, holding or not holding an MBA degree might be important for the amount of change a CEO is able to implement during the early phase of his or her tenure in office. In turn, the preceding CEO faces relatively less uncertainty at the end of his CEO tenure. Therefore, the level of strategic change he or she manages at the end of his or her tenure should not depend as much of whether he or she holds an MBA or not. In consequence, the amount of prior strategic change should be less affected by the MBA of the predecessor than the amount of post-succession strategic change might be affected by the MBA of the new CEO. Therefore, the expectation is that the MBA of the new CEO relates positively to the amount of post-succession strategic change regardless of whether the predecessor holds an MBA or not (Q3.1 = No).

Accordingly, I hypothesize:

*Hypothesis 2c: The MBAs of new CEOs positively relate to post-succession strategic change.*

### 3.3 Educational Level

Suggestions on the influence of the level of education are far more apparent in literature than on the type of education. One point of view is that the educational level is an indicator of a different socio-economic background and thus different values and beliefs (Finkelstein et al., 2009; Schein, 1967; Smart & Pascarella, 1986). According to upper echelons theory, this view could result in different preferred strategies (Hambrick & Mason, 1984). In support of this, scholars find that the educational level positively relates to the number of product innovations and suggests that higher educated executives prefer innovation-oriented strategies (Camelo-Ordaz, Hernandez-Lara, & Valle-Cabrera, 2005). However, this study neither controls for educational type nor for prior innovativeness. Therefore, it cannot be conclusive on causality. With regards to reverse causality, an argument has been that R&D- and innovation-oriented companies employ higher educated executives, because such strategies are viewed as being more complex (Gupta, 1986, 1992). Accordingly, empirical findings show that industries with a high emphasize on product differentiation employ higher educated executives (Datta & Rajagopalan, 1998). Moreover, Barker and Mueller (2002) do not find a significant relation between the educational level and R&D spending; because, for example, lawyers also tend to obtain high degrees without being expected to focus particularly on innovation (Barker & Mueller, 2002). According to this argument, and keeping in mind that I focus on CEOs of large companies who almost all obtained at least a Bachelor's Degree, I do not expect that the educational level significantly indicates differences in preferences, values, and beliefs beyond those stemming from different educational types (Q1 = No). This expectation leads to the following hypothesis:

*Hypothesis 3a: The distance in the educational level between successor and predecessor CEOs does not relate to post-succession strategic change.*

More prevalent is the idea that the executive's amount of formal education has a positive association with cognitive ability (Finkelstein et al., 2009; Hitt & Tyler, 1991) and that cognitive ability is helpful in identifying change potential and driving strategic change (Datta et al., 2003; Hambrick, Cho, & Chen, 1996). Similarly, several researchers argue that a high educational level has a positive association with open mindedness, which leads to early adoption of new technologies, processes, and behaviors (e.g., Becker, 1970; Kimberly & Evanisko, 1981; Young, Charns, & Shortell, 2001). This is not to be confounded with the proposition mentioned earlier that higher educated managers prefer innovation in the sense of a strategic archetype. Accordingly, empirical evidence suggests that the educational level has a positive association with strategic change (Datta et al., 2003; Wiersema & Bantel, 1992), with the number of strategic actions (Hambrick et al., 1996), and with administrative and organizational innovations (e.g., Kimberly & Evanisko, 1981; Thomas et al., 1991). Because strategy is defined as a comprehensive term, including administrative choices as well as competitive choices (Hambrick & Mason, 1984), a high level of administrative innovations can be regarded as a high level of strategic flexibility. Consequently, I expect that the educational level relates to change-affinity (Q2 = Yes). These arguments on the early adoption of new technologies, processes, and behaviors suggest a general open mindedness. Therefore, I expect that the level of post-succession strategic change increases only if the new CEO is higher educated than the predecessor (Q2.1 = Yes). In turn, if they are equally educated the level of prior strategic change should already reflect their open mindedness. This expectation leads to the following hypothesis:

*Hypothesis 3b: The difference in the educational level between successor and predecessor CEOs positively relates to post-succession strategic change.*



## 4 Methods

### 4.1 Research Design

As mentioned, upper echelons researchers are not able to provide the insights on the causal effects of characteristics on strategies that Hambrick and Mason (1984) had envisioned would be triggered by inventing their theory. In this chapter, I apply the same study design as in Chapter III. This design complies with the design criteria outlined in detail in chapter II that allow for better conclusions on causality than prior studies have been able to provide. In short, I measure strategic change in a period with stable executives' characteristics starting directly after a measured change in these characteristics while controlling for prior strategic change.

### 4.2 Sample

The sample comes from *Standard & Poor's 500 (S&P 500)* companies by pursuing the following steps. I select all companies with CEOs that have been in their positions for at least three years as of early 2010 except those run by the companies' founders or by CEOs who have been in position for longer than company data (10-K statements) are available. This selection provides a sample of 156 companies. Biographical data of CEOs and their predecessors are collected from *Marquis Who's Who*, company web sites, and press articles archived in *LexisNexis*. I collected year or date of birth, information on education, and on all career steps including functional, employer, and industry information. Company data are gathered manually from 10-K and proxy statements and downloaded from *Datastream* for the six years surrounding the appointment date. The year of appointment has been included in the prior-succession period, when the turnover happens less than six months before the next fiscal

year end and vice versa. Unfortunately, not all companies consistently report all data.

Strategic change, for example, is measured based on six previously used indicators (e.g., Datta et al., 2003; Finkelstein & Hambrick, 1990; Zhang & Rajagopalan, 2010): advertising expenses; R&D expenses; SG&A expenses; inventories, all as percentage of sales; leverage (debt over equity); and equipment newness (net over gross PP&E). Finkelstein and Hambrick (1990) yield similar results with two measures for strategic persistence; one based on all six measures and one based on only four measures without R&D and advertising expenses, the two least frequently reported indicators. As these are included in SG&A expenses when not reported separately, all datasets here that report at least four indicators have been included. Finally, all differences in strategic indicators between the start and the end of the observation periods have been standardized and all datasets that returned a standard deviation of three or more have been ruled out. This process yields a final sample of 100 companies.

### 4.3 Measures

**Dependent variable.** As mentioned, I measure *post-succession strategic change* similarly to prior research and include all records that report at least four indicators. I calculate the absolute differences of the indicators (Zhang & Rajagopalan, 2010) between the third year of the post-succession period ( $t_3$ ) and the last year the CEO did not influence the company for more than six months ( $t_0$ ). Then, I standardize these differences and rule out all cases that return a standard deviation of three or more. Finally, the composite measure is calculated by averaging (Datta et al., 2003; Zhang & Rajagopalan, 2010) the standardized differences of the indicators.

**Functional background.** Consistent with prior research, I consolidate the various functions into three core areas: Output functions that, for example, include marketing, sales and product R&D; throughput functions that, for example, include operations, engineering, logistics, and management accounting; and peripheral functions that, for example, include financial accounting, tax, HR, and general management (Finkelstein, 1992; Westphal & Milton, 2000; Zajac & Westphal, 1996). Classifying the various functions into one of these three categories requires almost no subjective judgment. Next, I calculate the years the CEOs spent in output or throughput functions and calculate the differences in experience in these areas by deducting the value of the predecessor from the value of the successor. Finally, I add the absolute differences in throughput and output functions to obtain the *functional-orientation distance*. As the findings suggest, there is a relation between output and throughput functions and different strategic archetypes (e.g., Boeker, 1997a; Strandholm et al., 2004). I focus on differences in these areas and disregard differences in peripheral functions. However, because CEOs that spent most of their careers in peripheral functions probably are less experienced in throughput or output functions, they might still have functional distance vis-à-vis their predecessors or successors.

**Educational type.** The educational background is classified into five educational specializations: namely business or economics, science (i.e., chemistry or biology), engineering, arts (i.e., literature or history), and law (Carpenter & Fredrickson, 2001; Wiersema & Bantel, 1992). First, to measure the distance between new CEOs and their predecessors, the number of degrees per specialization are counted. Second, I calculate the differences per educational type by deducting the number of degrees obtained by the predecessors from those obtained by the new CEO. Finally, the absolute differences of all educational types are averaged to yield the *educational-type distance* between the new CEOs and their predecessors.

With regards to MBAs, I introduce a dummy variable for them (1 = yes, 0 = no) that directly delivers the variable *MBA new CEO*. The *MBA distance* is measured by subtracting the dummy value of the predecessor from the value of the new CEO and by taking the absolute value of this difference.

**Educational level.** To measure the educational level, I define a four-point scale that reflects the highest degree obtained (0 = no degree, 1 = undergraduate degree, 2 = master's degree or JD, 3 = PhD) (Barker & Mueller, 2002). I calculate the *difference in the educational level* between new CEOs and their predecessors by deducting the values of the predecessors from the values of the successors and take the absolute value of this difference to obtain the *educational-level distance*.

**Control variables.** To avoid endogeneity issues, I add four control variables that might have effects on the dependent and the independent variables. First, I control for *prior strategic change*, as it can serve as an indicator of general differences in the openness of organizations for change, which in turn could affect the selection of the CEO. I measure *prior strategic change* like the dependent variable, but for the three years before the new CEO took office. Thus, I take the difference in the strategic indicators between the defined year 0 and two years earlier ( $t_2 - t_0$ ).

Second, evidence shows that *firm size* relates negatively to the amount of strategic change (Finkelstein & Hambrick, 1990) and positively to the selection of older, longer tenured, and higher educated CEOs (Datta & Rajagopalan, 1998). I measure *firm size* as the natural logarithm of employees in year  $t_0$  (e.g., Carpenter, 2002; Datta et al., 2003). The natural logarithm of firm sales (e.g., Carpenter et al., 2001; Wiersema & Bantel, 1992), returns very similar results.

Third, *prior performance* might influence the amount of post-succession strategic change (Boeker, 1997b) as well as the executive selection (Datta & Rajagopalan, 1998). I measure *prior performance* as the development (percentage change) of the return on assets adjusted by the percentage change of the industries' return on assets between the year -2 and the year 0.

Fourth, I control for the top management team turnover (*TMT turnover*) during the succession period, because it might affect overall strategic change in the post-succession period and the new CEO's influence on the organization (Barron et al., 2011). I measure *TMT turnover* as the average percentage change in the top management team (Carpenter & Fredrickson, 2001) in the years  $t_0$  and  $t_1$  as it is reported in the 10-K or proxy statements (Carpenter et al., 2003; Kor, 2003). Alternative time spans return similar results.

I also add two variables to control for selection biases. First, because CEOs of early observation periods remained in office until early 2010 and thereby proved to be rather successful, early periods might be different from later periods. Therefore, I add the year defined as  $t_0$  as the fifth control variable (*year  $t_0$* ).

Second, companies from different industries might differ with regards to the levels of strategic change. Therefore, I control for industry effects that introduce a dummy variable (*Industry 1-3*) to differentiate between manufacturing and construction companies (One-digit SIC-Code 1-3), and others. I take the first digit of the primary SIC-Code listed in *Hoover's* database to identify the industry. Alternative variables like manufacturing companies (Industries 2 and 3) or industries 1 to 5 return similar results.

Finally, I add *differences in industrial tenure* and *in age* that were shown to be positively related to post-succession strategic change in Chapter III. I measure industrial tenure and age in years in the year  $t_0$  and calculate the difference between new CEOs and their predecessors

by deducting the values of the predecessors from the values of the successor CEOs. In the results section, I treat these variables as explaining variables as this better reflects their role in this model.

## 5 Data Analysis and Results

Because the time lag is included in the dependent variable, I am able to specify a cross-sectional regression model. Like prior studies on strategic change (Datta et al., 2003; Wiersema & Bantel, 1992), I test the hypotheses by estimating OLS models.

Table IV-1 presents the descriptive statistics of the sample, including means, standard deviations, and correlations among the variables. The matrix indicates that there are some significant correlations between the dependent variable (1) and the control variables (2-7).

*Post-succession strategic change* correlates with *firm size*, *prior strategic change*, and surprisingly with *year t<sub>0</sub>*. In turn, *prior performance* and *TMT turnover* do not correlate with *post-succession strategic change*, but *TMT turnover* correlates with *prior strategic change*.

This correlation might indicate that high team turnover is more a result of changing strategies than an antecedent. Other correlations between control variables (2-7) are that *firm size* negatively correlates with *prior strategic change* and positively with *year t<sub>0</sub>*.

TABLE IV-1  
Descriptive Statistics and Correlation Matrix

	Mean	s.d.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
1. Post-succession strategic change	-.16	.27														
2. Prior strategic change	-.16	.28	.30***													
3. Firm size	10.00	1.42	-.29**	-.23**												
4. Prior performance	.06	6.16	.00	.01	.02											
5. TMT turnover	.17	.10	-.04	.25**	-.09	-.15										
6. Year $t_0$	2003	2.80	-.19*	.08	.20*	-.12	.06									
7. Industry 1-3	.62	.49	-.07	-.10	-.10	.05	-.02	-.13								
8. Difference in industrial tenure	-3.75	8.17	.22*	-.11	.17*	-.07	.03	.09	-.10							
9. Difference in age	-11.07	8.24	.30***	.00	.15	-.05	-.09	.14	.03	.19*						
10. Functional-orientation distance	.50	.36	.23*	.12	-.20*	.01	.13	-.09	-.05	-.09	.00					
11. Educational-type distance	.27	.32	.16	.03	-.01	.04	.12	-.04	.12	-.10	.10	.00				
12. MBA distance	.04	.49	-.21*	-.12	.22*	-.01	.14	.08	-.16	.11	.14	-.06	.08			
13. MBA new CEO	.37	.48	.17*	-.04	-.07	.01	.10	-.21*	.09	-.09	.11	-.04	-.04	.18*		
14. Educational-level distance	.55	.86	-.08	.01	.14	-.04	-.08	.07	.12	.03	.14	-.07	.28**	.00	-.30***	
15. Difference in educational level	-.09	.74	.11	.18*	-.20*	.03	.01	-.04	.18*	-.19*	.13	-.03	.09	-.07	.15	-.07

\*  $p \leq .050$ ; \*\*  $p \leq .010$ ; \*\*\*  $p \leq .001$

Moreover, there are some correlations between the dependent variable and the explaining variables (8-15). Apart from *difference in industrial tenure* and *difference in age*, *post-succession strategic change* positively correlates with *functional-orientation distance* and with *MBA new CEO*. In addition, it does not significantly correlate with *educational-level distance*. These preliminary results support Hypotheses H1, H2c, and H3a. In turn, the negative correlation between *post-succession strategic change* and *MBA distance* contradicts Hypothesis H2b.

Furthermore, there are some correlations between control (2-7) and explaining variables (8-16), such as between *prior strategic change* and *difference in educational level*. These correlations indicate that companies already experiencing high strategic change tend to replace executives with higher educated successors. This is interesting because it indicates that *prior strategic change* has an effect on the *difference in educational level*, while this level apparently does not impact the amount of *post-succession strategic change*.

Several explaining variables (8-15) also correlate with each other. For example, *difference in industrial tenure* negatively correlates with *difference in educational level*, indicating that in selection processes lower industrial experience might be compensated with higher education and vice versa. Other correlated explaining variables are *educational-type distance* and *educational-level distance*. This is due to the measure of educational orientation. Because I counted the number of degrees an executive obtained in an educational type to measure the respective orientation, the *educational-type distance* is likely to be somewhat correlated to the *educational-level distance*. Nevertheless, I count the number of degrees because I assume that someone who obtains two engineering degrees and one MBA is more engineering focused than someone who obtains a Bachelor in engineering and a Master's in Business, and thus that there is an educational-type distance between two such individuals.



Table IV-2 presents six models. Model 1 contains the control variables. Model 2 adds the two explaining variables that have already been analyzed in detail in Chapter III. *Functional-orientation distance* is added to Model 3. Model 4 adds the variables related to educational types, namely *educational-type distance*, *MBA distance*, and *MBA new CEO*. Model 5 compiles all variables. To verify the results on educational level-related variables and to avoid multicollinearity issues, I remove the explaining variables on educational types in Model 6.

TABLE IV-2  
Results of Regression Analysis<sup>a</sup>

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Prior strategic change	.29**	.32***	.31***	.29***	.30***	.32***
Firm size	-.21*	-.29**	-.26**	-.22**	-.21*	-.25**
Prior performance	-.04	-.01	-.02	-.03	-.03	-.02
TMT turnover	-.13	-.17*	-.19*	-.21*	-.22**	-.20*
Year $t_0$	-.18 <sup>†</sup>	-.23**	-.22*	-.16 <sup>†</sup>	-.16 <sup>†</sup>	-.21*
Industry 1-3	-.09	-.09	-.07	-.14 <sup>†</sup>	-.12	-.06
Difference in industrial tenure		.25**	.26***	.32***	.31***	.26**
Difference in age		.34***	.33***	.30***	.32***	.35***
Functional-orientation distance			.17*	.18*	.18*	.17*
Educational-type distance				.22**	.25**	
MBA distance				-.22**	-.22**	
MBA new CEO				.22**	.19*	
Educational-level distance					-.11	-.09
Difference in educational level					-.04	-.01
R <sup>2</sup>	.19	.39	.42	.52	.53	.43
Change in R <sup>2</sup>		.20	.03	.10	.01	.01 <sup>b</sup>
Adjusted R <sup>2</sup>	.14	.34	.36	.45	.45	.35
Change in adjusted R <sup>2</sup>		.20	.02	.09	.00	-.01 <sup>b</sup>
F	3.74**	7.30***	7.15***	7.75***	6.74***	5.90***

<sup>a</sup> Values shown are the standardized regression coefficients. n=100

<sup>b</sup> Relative to model 3

<sup>†</sup>  $p \leq .100$ ; \*  $p \leq .050$ ; \*\*  $p \leq .010$ ; \*\*\*  $p \leq .001$

As expected, Model 1 indicates that *prior strategic change* is positively and *firm size* is negatively related to *post-succession strategic change*. In turn, there are no significant effects for *prior performance*. I tested five additional measures for *prior performance* (not industry

adjusted RoA, adjusted and not adjusted RoE and RoS), but all of them yielded similar coefficients and even statistically weaker results. For *TMT turnover*, there is no significant effect in Model 1, but taking a glance at Models 2-6 it seems that high top-management-team turnover in the CEO succession period leads to low *post-succession strategic change*. I also tested alternative measures by evaluating different time spans for relevant turnovers, none of which returned better or substantially different results.

Additionally, *year  $t_0$*  seems to have a slightly negative effect on the dependent variable, indicating that overall *post-succession strategic change* is slightly lower in more recent observation periods (high *year  $t_0$* ) than in earlier periods. As mentioned, for early observation periods, the sample contains only CEOs who proved to be rather successful because they remained in office until 2010, while for later observation periods, CEOs must still prove whether they will stay in office for a long time. It might be that CEOs are regarded as particularly successful and thus rewarded with long tenures in office if they implement more change during their first years in charge. This could explain why earlier observation periods show, on average, higher changes than more recent periods. Finally, the industries for which I tested several alternative measures (manufacturing vs. non-manufacturing companies, industries with SIC Codes 1-5 vs. 6-8) that yielded similar coefficients and even statistically weaker results, is not significantly related to the dependent variable.

In Model 2 I add the two explaining variables, which were covered in detail in Chapter III. Thereby the  $R^2$  rises to 0.39 and the significance of the F-value increases.

In Model 3 the *functional-orientation distance* is added to the analysis, raising the  $R^2$  by 0.03 to 0.42 and the adjusted  $R^2$  to 0.36. In support of Hypothesis H1, *functional-orientation distance* significantly and positively relates to *post-succession strategic change*.

In Model 4, I add the variables on different types of education to the model. They add further explanatory value by increasing the  $R^2$  by 0.10 to 0.52 and the adjusted  $R^2$  by almost the same amount to 0.45. In support of Hypothesis H2a, *educational-type distance* significantly and positively relates to *post-succession strategic change*. For *MBA distance*, a significant effect on the dependent variable can be observed. However, the observed direction indicates that high distance between the succeeding CEOs in terms of MBAs leads to less strategic change, which contradicts Hypothesis H2b. In turn, the model shows a significantly positive effect of *MBA new CEO* on the dependent variable. Hence, Hypothesis H2c is supported.

In Model 5, I add *educational-level distance* and *difference in educational level* to the model. This addition does not add further explanatory value. Moreover, for both variables, no significant effects can be observed. In turn, adding these variables substantially effects the coefficients of *educational-type distance* and *MBA new CEO*, which as reported in Table IV-1 strongly correlate with *educational-level distance*. Accordingly, I detect low tolerance for collinearity and high variance inflation factors in this model. Therefore, I remove the variables on educational type to verify the results for educational level-related variables in model 6. However, this does not substantially affect the results for these variables. Hence, Hypothesis H3a that states *educational-level distance* does not relate to *post-succession strategic change* can not be rejected. Moreover, Hypothesis H3b that states *difference in educational level* positively relates to the dependent variable is not supported. Here, I also analyzed whether the absolute educational level of the new CEO relates to the dependent variable. This relation returned similar results.

In a nutshell, in addition to *differences in industrial tenure* and *in age*, *functional-orientation distance*, *educational-type distance*, *MBA distance* (although inversely to what was hypothesized), and *MBA new CEO*, have effects on *post-succession strategic change*. These effects support the Hypotheses H1, H2a, and H2c. Additionally, Hypothesis H3a can not be

rejected. Moreover, the overall level of explained variance with an  $R^2$  of 0.52 and an adjusted  $R^2$  of 0.45 in Model 4 is considerably higher than in prior studies on the amount of strategic change (Datta et al., 2003; Finkelstein & Hambrick, 1990; Wiersema & Bantel, 1992).

## 6 Discussion

In this study, I theoretically differentiate between three phenomena reflecting the arguments put forward in prior research for how various characteristics might affect strategic actions, namely through effects on different preferred strategies, different change-affinity, and different change-ability. Thereby, I propose a systematic approach to develop hypotheses on that matter. The results support Hypotheses H1 and H2a and thus underpin that different background characteristics, such as functional or educational-type backgrounds, indicate different preferred strategies that lead to strategic change when distances between predecessors and successors are high. Notably, different preferred strategies, as well as other willingness-related aspects, might be amplified by mandates for change. Mandates for change are explicit or implicit expectations of stakeholders on what kind of actions executives should undertake (Hambrick & Mason, 1984). Accordingly, managers might be selected due to their characteristics' fit to the kind of strategic change desired by those who select them. Hence, if executives are selected due to their characteristics differences or distances vis-à-vis their predecessors and if they perceive or receive a mandate for change, these executives would primarily consciously comply with the expectations, rather than being unconsciously driven by their characteristics (Hambrick, 2007; Hambrick & Mason, 1984). With this as a caveat, my findings for the first time provide evidence that background distances lead to post-succession strategic change and thus might indicate different preferred strategies. Thereby, I contribute to upper echelons research by underpinning one of the most central propositions of

upper echelons theory; namely that different frames of reference indicate different strategic preferences and lead to different strategic choices (Hambrick & Mason, 1984).

Moreover, Hypothesis H2c is supported and suggests that some characteristics, like holding an MBA degree, might indicate high change-ability regardless of the predecessor and particularly in new or uncertain situations. This finding, together with the reconfirmed findings of Chapter III for tenure and age, demonstrates that some characteristics take effect through the difference compared to the predecessor or through their occurrence in absolute terms.

Taking a holistic view on the findings on Hypotheses H1, H2a, H2c and on tenure and age, supports the proposition to conceptually differentiate between characteristics' effects on preferred strategies on the one hand and effects on change-affinity and change-ability on the other hand. Moreover, it demonstrates that a methodological differentiation between the first and the latter two effects is feasible and that the latter two can be methodologically differentiated with regards to whether they take effect in absolute terms or whether they depend on the relative environment or the predecessor.

Furthermore, characteristics that affect the change-affinity and the change-ability (industrial tenure, age, and MBAs) yield higher and more significant coefficients than those indicating different strategic preferences (educational type and functional background). However, this should not suggest that strategic preferences play a subordinate role. In this study, I control for prior strategic change and analyze only the amount of post-succession strategic change. Hence, the effects of educational-type and functional-orientation distance on the dependent variable reflect only the additional amount of change, while the direction of the change remains ignored. Thus, the effect of preferred strategies on the direction of change could be more relevant than on the additional amount of change. However, the important role of

characteristics that influence the change-affinity and change-ability, especially that of tenure and age, suggests that a considerable portion of strategic change is not due to intrinsic strategic preferences, but due to external stimuli that are processed, interpreted, and converted to actions differently depending on change-affinity and change-ability.

Further, as expected, the findings do not indicate that distances in educational level among CEOs indicate strategic preferences. Hence, Hypothesis H3a can not be rejected.

In addition to these findings and conclusions, two hypotheses are not supported. First, Hypothesis H2b is not supported and is even significantly contradicted. This result suggests that a high MBA distance leads to low strategic change. Such a constellation is counterintuitive as it suggests that managers that hold MBAs decrease the amount of strategic change when the predecessor does not hold an MBA and that managers who do not hold MBAs decrease the amount of strategic change when predecessors hold MBAs. To explain this paradox, it is helpful to consider the results observed for MBAs of new CEOs. These results suggest that the change-ability of new CEOs that hold MBAs is high. Hence, new CEOs holding MBAs implement more strategic change regardless of their predecessors, because an MBA education per se trains them to make strategic decisions in uncertain situations (Geletkanycz & Black, 2001; Grimm & Smith, 1991). In turn, one could argue that not having attained such training is particularly problematic for new CEOs when organizations and top management teams are used to such a trained chief executive. Similarly, there is an argument that not having internal knowledge and an internal network is particularly problematic when the predecessor possessed these attributes (Cao et al., 2006). In contrast, if the predecessor does not hold an MBA either, the organization might be used to a CEO without that particular skill set and might somehow compensate for or not require this skill set. In consequence, in such a scenario not holding an MBA degree might have a neutral effect on the amount of strategic change. This neutrality might explain why having an MBA,

per se, has a positive effect (H2c), and that the cases in which there is low distance between the successors and the predecessors (either both hold or not hold MBAs) together show more strategic change than the cases of high distance. In any case, the results on MBAs do not support the idea that holding MBAs indicates certain strategic preferences, but supports the idea that MBAs might have positive effects on the change-ability of new CEOs.

Second, Hypothesis H3b is also not supported. As mentioned, prior studies that find an association between the educational level and strategic flexibility do not disentangle the two reverse causalities (e.g., Finkelstein & Hambrick, 1990; Wiersema & Bantel, 1992). In addition, a positive correlation between prior strategic change and difference in the educational level can be observed. This difference supports the idea that companies experiencing high change tend to increase the level of education in the executive suit. Similarly, researchers find that companies in dynamic industries employ higher educated executives (Rajagopalan & Datta, 1996). Hence, any observed associations between strategic flexibility and the educational level might be due to reverse causality. Thus, the results presented here indicate that the educational level is neither an indicator for different preferred strategies nor for higher change-affinity, but could rather be a selection criterion for boards of companies that experience high change due to other reasons and that assume that higher educated executives are better able to deal with such complex situations.

Regardless of supporting or not supporting the hypotheses, all findings in this study shed new light on propositions prior research made upon the effects of various characteristics on strategic actions and contributes to upper echelons research either by specifying more explicitly through which type of effect the characteristics affect strategic change or by showing that some characteristics are not causal to post-succession strategic change, but rather the result of high strategic flexibility. Thereby, this study also reaffirms the relevance of the study design proposed in Chapter II, namely to measure lagged strategic change in a

period of stable characteristics directly after a measured change in characteristics while controlling for prior strategic change. This design not only allows for more valid conclusions on causality, but also to integrate all types of characteristics as antecedents of strategic change and to differentiate between the different effects they might have. The higher explanatory value ( $R^2$  of 0.52 and adjusted  $R^2$  of 0.45 in Model 4) than those presented in prior upper echelons research on the antecedents of strategic change (Datta et al., 2003; Finkelstein & Hambrick, 1990; Wiersema & Bantel, 1992) might encourage future researchers to design studies in a similar manner.

In addition, the findings on causal relations between characteristics and post-succession strategic change might be of high practical relevance. Delivering on the targets set forth by Hambrick and Mason (1984), I provide insights for executive selection and for the prediction of post-succession strategic change. Hence, practitioners—such as those who have to select new CEOs—could consider educational-type and functional-background distances between a leaving CEO and potential succession candidates and characteristics that might foster change-affinity and change-ability when selecting the successor. Furthermore, the analysis of new CEOs and the comparison to their predecessors might enhance transferability to such situations. When making replacement decisions, entire top management teams are rarely compared to a sample of other teams—like most prior studies do—but rather compare potential candidates to the departing executive.

Apart from these contributions, several aspects that might be the object of future research are not covered. In this study, for the first time, I have systematically differentiated between characteristics that affect strategic change through different preferred strategies, different change-affinity, and different change-ability. Future research could take this study as a starting point to invent constructs for these phenomena that consist of several characteristics, and also of more psychological ones (e.g., Peterson et al., 2003; Sosik et al., 2011). Future



research might also test these constructs' effects on strategic change, notably while complying with the research design proposed in Chapter II and applied in this study. This could shed additional light on the "black box" (e.g., Carpenter et al., 2004; Pettigrew, 1992) of how characteristics affect general or specific strategic change.

Furthermore, future research on succession consequences (e.g., Cao et al., 2006; Karaevli, 2007; Shen & Cannella, 2002) could build on this study and analyze the effect different preferred strategies and differences in change-affinity and -ability have on post-succession performance. In addition, such research could analyze different reasons for successions (e.g., Barron et al., 2011; Fee & Hadlock, 2004) as antecedents for changing executives' characteristics and as indicators for explicit or perceived mandates for change. This could bridge the gap between upper echelons and succession-consequence research and could shed light on the role of mandates for change.

A further aspect not covered in this study is whether the findings presented here hold true only for CEOs. While agreeing that entire top management teams have more impact on strategic change than single individuals, the applied study design that has been developed to draw better conclusions on causality than prior research provided requires that single individuals need to be analyzed in isolation. The results in this study underscore the importance of the call for designing studies in a way that allows for such conclusions (Finkelstein et al., 2009). However, future research might assess executives other than the CEO to evaluate whether the results presented in this study hold true.

Also, this study has some limitations that must be mentioned. First, even though I am confident that the study design allows for more valid conclusions on causality than prior research does, causality cannot be confirmed in this study, either.

Second, I analyze strategic change based on four to six indicators. But, prior research shows that measuring strategic persistence with six or with four measures returns similar results (Finkelstein & Hambrick, 1990). Accordingly, when controlling for the number of indicators, I do not observe significant results. In addition, I control for prior strategic change.

Furthermore, characteristics and especially characteristics differences should be independent of having four or six indicators. Thus, even if the number of indicators is predictive of the observed amount of strategic change, results on the effects of characteristics would not be substantially affected.

Third, I neither include moderator variables, such as managerial discretion and job demands (Hambrick, 2007) in the analysis, nor do I sample firms from one industry. However, the rationales for why and how characteristics might affect general strategic change provided in these studies, are not specific to certain contexts. Nevertheless, I control for contextual factors in multiple ways. First, I analyze relative characteristics that should be independent of the environment. Second, I control for prior strategic change that should reflect systematic differences in the amount of strategic flexibility; and third, I control for industry and test various measures, none of which returns significant results. Therefore, this should not substantially affect the results.

## **7 Concluding Remarks**

With this study, I contribute to upper echelons theory by differentiating between phenomena that might mediate between executives' characteristics and lagged strategic change and by providing a structured approach to develop hypotheses on characteristics' effects. This differentiation provides research with new avenues to analyze how, or through which phenomena, characteristics become reflected in strategic change. By shedding additional light

on which characteristics affect these phenomena and how these in turn affect strategic change, future research could further decrease the gap between characteristics and strategic actions.

Furthermore, my empirical analyses shed new light on many propositions that have been made in prior research and for the first time test them without major limitations with regards to reverse causality. Thereby, the proposition of upper echelons theory that frames of reference indicate different preferred strategies is underpinned. All findings, not all of which support suggestions made by prior research, contribute to upper echelons research and underscore the relevance of the study design applied here and outlined in more detail in Chapter II. This might encourage researchers to reassess other previously tested propositions in light of reverse causal effects.

Finally, the new and less biased insights I present in this study might be valuable for practitioners when selecting executives and for anticipating competitors' strategic actions after they undergo executive successions.



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## **V. Discussion**

### **1 Purpose of Dissertation**

Building on the criticism that upper echelons researchers so far have not been able to draw conclusions on causality (e.g., Carpenter et al., 2004; Finkelstein et al., 2009; Hambrick, 2007), the purpose of this dissertation is to refine the framework such that it explicitly differentiates between reverse causal effects, to derive a research design that complies with this framework, and to apply this research design. Thereby, I seek to reassess prior findings on relations between managerial characteristics and strategic change as well as to uncover new relations and to differentiate the observed relations with regards to different types of effects characteristics can have on strategic change. These research goals were divided into three Chapters II, III and IV and the findings of each of these Chapters have been compared to the different research goals in the individual chapters. Therefore, in the following I take a different view. Three contribution types can be differentiated: first, contributions to upper echelons theory with regards to reverse causality; second, contributions to upper echelons theory with regards to different types of effects characteristics can have; third, contributions to the understanding of the effects of individual characteristics. In the following, I discuss the different contribution types and highlight implications for upper echelons theory and methodology as well as for practitioners.

## **2 Overview of Key Contributions and Findings**

### **2.1 Contributions to Upper Echelons Theory and Reverse Causality**

In the second chapter of this dissertation I follow the call of Finkelstein et al. (2009) and propose an integrative framework that compiles the core upper echelons mechanism while also taking into account reverse causal effects. The conceptually refined framework is the central theory contribution of this dissertation. Going beyond the concept of a “reinforcing spiral” (Finkelstein et al., 2009) the framework that I propose here also allows for explaining increasing strategic change and the selection of managers that do not fit to the current corporate strategy. Hence, this framework is compatible with strategic change that is not triggered by new managerial characteristics and with mismatching of managers, but at the same time builds on the original upper echelons framework when suggesting that change in managerial characteristics might entail strategic change. In addition, it also considers the alternative perspective that strategic change might entail managerial characteristics change. The integration of different concepts is not to suit scholars from different research streams, but because I believe that all phenomena happen in reality: firms change strategies due to external constraints without necessarily replacing their management; new managers not always fit to corporate strategies, either due to job market constraints or due to change intentions of those selecting the managers. Both phenomena then entail the change of the other: firms that experience strategic change will at some point select new managers and match them to their new strategies rather than to their predecessors; firms with new managers that do not fit to current strategy will change their strategies. This last phenomenon is in the focus of upper echelons theory. However, as all four phenomena are interrelated I believe that researchers on upper echelons theory can generate more conclusive findings when they taking into account the first three phenomena in their theoretical models explicitly. When researchers

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take account of the whole model, then they should design their studies such that they disentangle their focal phenomenon from the others.

Therefore, I derive research design criteria that allows disentangling the focal phenomenon in upper echelons theory from the other three to a large extent. Thereby, I hope to contribute to the methodology of future upper echelons research.

The relevance of taking into account reverse causality in upper echelons research is underpinned in the empirical parts of this dissertation. Three empirical findings disaccord to findings in prior research. First, I find that new CEOs with relatively long organizational or industrial tenure implement more strategic change in the post-succession period than relatively short-tenured new CEOs. Second, my findings suggest that relatively old new CEOs implement more strategic change than relatively young new CEOs. Third, my results show that relatively high educational level of new CEOs does not lead to an increase of strategic change. In addition, reverse causal effects and other biases that I excluded in this dissertation and that might have influenced the results of prior studies can explain the disaccord of my findings with prior research. With regards to tenure and age, I excluded the negative effect tenure in office might have (e.g., Abebe, 2009; Boeker, 1997b; Finkelstein et al., 2009), and I excluded reverse causal effects such as that strategically persistent companies might have lower management turnover rates, might select longer tenured and on average older chief executives. Researchers interested in the effect strategy and structure has on managerial characteristics find very similar effects (Datta & Rajagopalan, 1998; Rajagopalan & Datta, 1996; Zhang & Rajagopalan, 2003). With regards to educational level, I also exclude reverse causal effects and observe that a high level of prior strategic change is positively associated with an increase of managerial educational level and that this increase, in turn, does not affect the amount of post-succession strategic change. Hence, prior findings that educational level is associated with high strategic change (Datta et al., 2003; Wiersema & Bantel, 1992), might

reflect the phenomenon that firms that undergo high strategic change, select higher educated executives.

Hence, this dissertation contributes to upper echelons theory and methodology by proposing a refined framework that can cope with reverse causal effects, by deriving research design criteria that allows scholars to comply with this framework, and by presenting empirical findings that underpin the importance of applying the design criteria.

## **2.2 Different Types of Effects Characteristics Have on Strategic Change**

A further contribution to upper echelons theory is the differentiation between different types of effects that I propose in Chapter IV. On the basis of the upper echelons mechanism that frames of reference—indicated by characteristics—bias information processing and strategic decisions researchers hypothesize which characteristics entail which information bias.

Thereby, two different sub-streams emerged: one type of research investigated which characteristics influence the amount of strategic change (e.g., Datta et al., 2003; Finkelstein & Hambrick, 1990; Wiersema & Bantel, 1992) and another type of research investigated which characteristics are associated with certain strategies (e.g., Barker & Mueller, 2002; Strandholm et al., 2004; Tyler & Steensma, 1998). In this dissertation I join these sub-streams and thereby, twist the focus from which characteristics affect strategic outcomes to how different characteristics differently affect strategic outcomes. Thereby, I suggest three different types of effects characteristics might have on strategic outcomes: namely, that some characteristics indicate preferences for certain strategies, that some characteristics indicate the level of change-affinity, and that some characteristics affect the level of change-ability.



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In addition, to conceptually differentiating between these effects, I propose a structure how to methodologically differentiate between some of these effects. Building on the research design that I propose in Chapter II, it is possible to analyze the research questions of the different sub-streams jointly. Characteristics that affect the amount of strategic change a new executive desires and is able to implement should take effect through their appearance in relative or in absolute terms. In contrast, characteristics that affect the type of strategy a new executive desires should yield strategic change when their absolute difference vis-à-vis the predecessor is high. Therefore, all types of characteristics can be analyzed as antecedents of strategic change at the same time without ignoring that they have different effects.

The empirical part of Chapter IV underpins the theoretical and methodological differentiation. Building on the empirical findings from Chapter III that relative tenure and age affect through effects on change-affinity and change-ability the amount of post-succession strategic change, results in Chapter IV indicate that also MBAs of new CEOs have—regardless of their predecessors—a positive effect on post-succession strategic change and that other characteristics like the functional background and the educational type affect the amount of post-succession strategic change through their absolute distance between successors and predecessors. Because different characteristics take effect differently with regards to their measurement vis-à-vis to the preceding CEOs, the analysis indicates that the effects are of different kinds.

In addition, the consideration of characteristics like functional background and educational type that so far have not been analyzed as antecedents of strategic change supports a central idea of the upper echelons theory, namely that different frames of reference lead to different strategies. So far, researchers only uncovered associations between certain functional backgrounds or educational types and corporate strategies. In this dissertation, I demonstrate that such characteristics also cause strategic shifts. Taking together this finding with prior

findings, I can interpret that functional backgrounds and educational types have causal effects on the strategies researchers have found being associated with these characteristics.

Hence, this dissertation is a step forward in underpinning the upper echelons theory and further specifies the theory with regards to the question how different characteristics differently affect strategic outcomes.

### **2.3 Understanding of Specific Characteristics' Effects**

In addition to contributing to upper echelons theory and to the effects characteristics might have in general, in this dissertation I also uncover a number of findings that relate to the understanding of specific characteristics.

In Chapter III, I reevaluated all arguments I found in prior literature on how tenure and age affect strategic change. Thereby, I combine aspects that have been promoted in upper echelons research with aspects put forward by researchers interested in succession consequences and suggest a differentiation between willingness- and ability-related aspects. In addition, I consider the predecessor and thus how these characteristics in relative terms affect post-succession strategic change. The combination of different aspects and the development of the hypotheses that CEOs with relative industrial and organizational tenure and age positively relate to post-succession strategic change contribute to theory on managerial tenure and age, nonetheless because the hypotheses are supported. This support contributes to academic knowledge on the effects of tenure and age and has practical implications. Because upper echelons researchers so far suggested that tenure and age negatively relate to strategic change, practitioners who interpreted these suggestions as if

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tenure and age had negative causal effects on the amount of strategic change might have to correct this interpretation. Hence, practitioners that have to select a new CEO and that seek for high strategic change should select a candidate with high internal knowledge and network and motivate him or her with strong mandates for change rather than selecting an outsider, who might have stronger intrinsic willingness for change, but might lack internal knowledge and acceptance.

In Chapter IV, I underpinned that functional backgrounds and educational types affect strategic outcomes. Although these findings underpin many theoretic suggestions that are either new to the theory—for example that different characteristics affect strategic change differently—or that are for the first time supported without major limitations with regards to causality, these findings are not surprising to upper echelons researchers. However, the aforementioned practitioners might consider this finding when making their selection decisions. Hence, it seems to be favorable to select relatively long tenured and relatively old executives who have different functional or educational backgrounds than their predecessors when high strategic change is desired.

In addition, I find that new CEOs seem to implement more strategic change when they hold an MBA. MBA education might be a good training to make decisions especially in uncertain situation (Grimm & Smith, 1991) that might help new CEOs to implement more strategic change in their first 3 years in office. Hence, when selecting new CEOs practitioners might search for a candidate who holds an MBA, particularly if uncertainty and urgency for change is high.

In a nutshell, practitioners who search for a new CEO and who desire strategic change, should—according to my findings—search for candidates that have high intra-industry or even intra-company knowledge and network, that are of similar age or older rather than much

younger than their predecessors, that have different functional and educational backgrounds than their predecessors and that hold MBA degrees.

My findings also suggest that two ideas scholars presented in earlier studies might be misleading. First, MBA education seems not to indicate certain strategic preferences, because the distance in terms of holding or not holding MBAs does not positively relate to post-succession strategic change. Hence, CEOs that hold MBAs seem not to systematically prefer different strategies than CEOs without an MBA degree. Because MBA programs are attended by managers from all kinds of industries, functions, and with different educational backgrounds it seems plausible that they are a training to make decisions in uncertain situations (Geletkanycz & Black, 2001; Grimm & Smith, 1991) rather than conveying uniform strategic preferences to all attendants.

Second, educational level distance seems also not to be an indicator for different strategic preferences. Although educational levels might indicate different socio-economic backgrounds and thereby different values and beliefs (Finkelstein et al., 2009; Schein, 1967; Smart & Pascarella, 1986), the differences in educational level in CEOs of S&P 500 companies might either be too small to observe any effects or their successful careers and their relative high compensation they already accrued during their career might have leveled their different values and beliefs to a certain extent.

Third, I do not have an indication that educational level is associated to higher post-succession strategic change. In turn, I observe that prior strategic change positively correlates with difference in educational level. Hence, consistent with the idea that high cognitive ability positively relates to the ability to handle complex situations (Hitt & Tyler, 1991), companies that experience high strategic change might increase the level of education in the executive suit rather than decreasing it when they replace CEOs. However, this is not to be confounded

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with the interpretation that higher educated managers induce more change into an organization.

Hence, practitioners who believed that differences in MBA education and in educational level are indicators for different strategic preferences and practitioner who believed that highly educated managers foster strategic change might have to correct these believes.

### **3. Limitations**

This dissertation has some limitations most of which I have highlighted in Chapters II, III, and IV. Nevertheless, in the following, I highlight three overarching limitations of my dissertation.

First, I rely on archival data. Therefore, I do not observe CEOs' values, beliefs, and preferences; I do not observe effects on their decisions; and I do not observe causal effects on implemented strategic change. In turn, when interpreting my results I have to rely on suggestions from prior research how the observed characteristics might indicate values, beliefs and preferences, how these might affect strategic decisions and that these decisions translate into implemented strategic change. In consequence, my findings are only indications that support or not support my hypotheses without confirming or disproving causal effects. However, because the applied research design excludes reverse causal effects to a large extend it allows for the causal interpretations I put forward in the empirical parts.

Second, the suggested research design limits the scope of this dissertation to one executive role. Hence, generalizing the findings I present here to other roles remains questionable. It might be that other roles—such as marketing managers or chief financial officers—show

different patterns with regards to the effects characteristics like tenure, age, functional or educational backgrounds have on strategic change than the patterns I observed for CEOs.

Third, my sample consists of large listed US companies, which further limits the generalizability of my results. In much smaller or non-listed firms governance structures, levels of managerial discretion, and corporate cultures might influence the effects certain characteristics might have on strategic change. In addition, in other cultural contexts than the US, characteristics like tenure, age and MBA holding might have different relations with strategic change.

#### **4. Future Research**

This dissertation opens several avenues for future theoretical, methodological and empirical contributions to upper echelons research. Theory-wise, researchers could add two additional perspectives to the refined framework. First, the framework as well as the empirical parts of this dissertation focuses only on changing characteristics. Beckman and Burton (2011) suggest that changes in the top management team structure and in roles apparent in the team might also be influential on strategic change. Similarly, changes in the diversity of top management teams might also affect strategic change. Hence, researchers could integrate these additional top management team-related aspects in the refined framework I present in this study or present similar supplementary frameworks.

Second, researchers could also integrate other process variables that intervene between managers' perceptions of reality and between strategy implementation. Such process variables concern the interaction between top management team members (Amason, 1996; Hambrick,

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1994; Simsek et al., 2005) and with other actors like middle managers (Raes et al., 2011) or board members (Kor, 2006; Sundaramurthy & Lewis, 2003; Westphal, 1998). Such an integrative theory that compiles effects of managerial characteristics, team compositions and team interactions might enhance the understanding of the impact upper echelons have on corporate strategic outcome.

Alongside with further enhancements of the refined upper echelons framework, researchers could define further research design criteria how to measure reverse effects, moderators and also new top management team-related aspects and process variables. Thereby, researchers could contribute to future empirical findings.

Knowledge-wise, researchers could apply the research design criteria to other previously observed associations such as the association between international experience of managers and international exposure of firms (Greve et al., 2009; Reuber & Fischer, 1997), and to uncovered relations between managerial characteristics—demographic and psychological ones—and specific corporate strategies or levels of strategic flexibility.

In addition, researchers could include reasons for successions as succession consequence researchers do it (e.g., Fee & Hadlock, 2004). Thereby, researchers might be able to approximate mandates to change and personal risks that are associated with changing the predecessor's strategy.

Researchers might also attempt to differentiate between the willingness and the ability to drive change by differentiating between decisions to change and implemented strategic change. However, such research attempts would require other than pure archival data and would even face difficulties when designing surveys because survey submissions should be

timed according to the recipients tenure in office and would have to be compared to implemented strategic change that is only measurable at a later point in time.

Nevertheless, on the basis of archival data and survey data researchers could invent constructs for the three phenomena I differentiate in Chapter IV. Researchers who identify demographic and psychological characteristics that together form an individuals' strategic preferences, change-affinity or change-ability would contribute to the understanding how characteristics affect strategic change.

In addition, researchers could also assess the relations I analyze in this study in other cultural contexts, in smaller firms and for other top management team roles. Especially an investigation whether relations between characteristics and strategic outcomes have different patterns for different managerial roles might contribute to research that focuses on the composition and diversity of top management teams.

Furthermore, researchers could attempt to measure the effects moderator variables such as managerial discretion, power, and executive job demands have on the effects that characteristics have on post-succession strategic change. If researchers are even able to distinguish between intentions to change and implemented strategic change, they could even contribute to the understanding how these moderators affect the focal relation.

Finally, researchers might attempt to test the entire framework using structural equation modeling. However, such an attempt would require a large amount of data. Fortunately, the time component allows researchers—as I do it for the effect characteristics have on strategic outcomes—to specify their research models such biases from the omitted parts of the entire framework can be reduced to a large extent. Hence, even if no future study analyzes the entire



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framework and possible future extensions of it, the sum of different findings from studies that analyze parts of it might be sufficient to underpin the suggested framework.

## **5. Conclusion**

This dissertation provides upper echelons research with a refined framework that is more explicit on the reverse effects between managerial characteristics and corporate strategic outcome. At the same time the framework allows to explain how strategic change or managerial characteristics change can be injected in a company without being triggered by the other. This framework provides a more complete picture and allows even to differentiate between moderator effects that affect the decision making processes and effects that affect the implementation processes. Future research might explore many aspects of this framework empirically. Most importantly, in order to comply with this framework researchers should apply the research design criteria that I derive in this dissertation and that allows to draw better conclusions on causality. The relevance of designing studies such that researchers can draw conclusions on causality is underpinned in this dissertation, because I find—counterintuitively to prior research—that relative organizational and industrial tenure and relative age positively relate to lagged strategic change. In addition, based on the proposed framework and the resulting research design in this dissertation I demonstrate that different types of characteristics have different types of effects that can be distinguished conceptually but also methodologically. Hence, this dissertation contributes to upper echelons theory, methodology and to empirical knowledge. It will hopefully trigger many more research on the relation between top executives and corporate outcomes.



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