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MOTIVATION GAPS AND IMPLEMENTATION TRAPS: THE PARADOXICAL AND TIME-VARYING EFFECTS OF FAMILY OWNERSHIP ON FIRM ABSORPTIVE CAPACITY

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THE PARADOXICAL AND TIME-VARYING EFFECTS OF FAMILY OWNERSHIP ON FIRM ABSORPTIVE CAPACITY

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ABSTRACT

We present a theoretical framework of family ownership as a driver of the heterogeneity (between-firm differences) and variability (within-firm differences over time) of absorptive capacity (AC). Building on our analysis of the multiple dimensions of family owner influence on firm behavior and the mechanisms that can shape the firm willingness and ability to acquire, assimilate, transform, and exploit external knowledge, we introduce the concepts of *motivation gap* and *implementation gap* to explain why, paradoxically, family ownership can cause both upward and downward divergences in AC. Our contingency framework identifies conditions under which the positive and negative effects of family ownership on AC are likely to prevail and adds a temporal perspective suggesting that AC varies depending on the duration of family ownership and ownership succession.

Practitioner Points:

- Our model explains two important implications of family ownership, emotional attachment and power concentration, that affect family firms' ability and willingness to acquire, assimilate, transform, and exploit external knowledge.
- Our model suggests that both ability and willingness can cause poor performance in incorporating and using external knowledge.
- Family firm owners and managers can use the framework to "map" their own firm's situation and understand their strengths and weaknesses with regard to absorptive capacity, and identify corrective actions to address motivation and implementation gaps identified through the model.
- Finally, the model offers some valuable practical insights about the effects of family owners' tenure and succession. Knowledge about these effects can be valuable to guide firm-specific discussions about when ownership succession should take place.

Keywords: absorptive capacity, emotional attachment, family firms, power concentration, motivation gap, implementation gap

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INTRODUCTION

In increasingly dynamic and competitive environments, the capacity to acquire, assimilate, transform, and exploit external knowledge—that is, absorptive capacity (AC; Cohen and Levinthal, 1990)—is crucial for firms to innovate, renew their competitive advantage, and sustain performance (Lewin *et al.*, 2011; Schildt *et al.*, 2012; Vasudeva and Anand 2011; Volberda *et al.*, 2010; Wales *et al.*, 2013). Yet despite the overall agreed importance of AC, academic studies as well as anecdotal evidence reveal substantial heterogeneity among firms with regard to their willingness and ability to foster their firms' AC (Cassiman and Veugelers, 2006; Jansen *et al.*, 2005; Lane *et al.*, 2001; Yayavaram and Ahuja, 2008). Hence, research has started to investigate firm-level drivers of AC, such as the firm's existing knowledge, managerial capabilities, and cognitive frames (see Lane *et al.*, 2006; Todorova and Durisin, 2007; Volberda *et al.*, 2010).

However, while this research has revealed the importance of managers, including their cognition, motivation, actions, and interactions (Volberda *et al.*, 2010), as important antecedents of firm-level AC, we still lack knowledge about how *owners'* attributes affect firm-level AC. This is an important gap in research, as prior literature has convincingly argued and shown that owners oftentimes exploit their influence to impact important firm-level decisions such as those related to innovation (Carney, 2005; Chrisman and Patel, 2012). Owners might influence AC through the specifics strategic priorities that they pose to the firm (Kochhar and David, 1996), their investment horizons (Thomsen and Pedersen, 2000), or through their, often path-dependent, influence on organizational structure, routines, and culture (König *et al.*, 2013). One type of ownership that is of particular importance is family ownership, given the prevalence of firms with family owners in any economy worldwide (La Porta *et al.*, 1999) and their idiosyncrasies that mainly go back to wealth concentration (Anderson and Reeb, 2004) and their emotional considerations (Cruz *et al.*, 2010; Gómez-Mejía *et al.*, 2007). For instance, prior research provides some support for the importance of the link between family ownership and the use of external knowledge (e.g., Casprini et al., 2017; Chirico and Salvato, 2014; Chrisman and Patel, 2012; König *et al.*, 2013; Kotlar *et al.*, 2013; Patel and Fiet, 2011), but the direction of this influence as well as the precise mechanisms remain unclear since this literature is replete with opposing perspectives and contradictory results (e.g., Chrisman *et al.*, 2015a). Hence, we pose the following research questions: *What are the mechanisms through which family ownership influences the level of firm AC? Under which conditions is family ownership beneficial or detrimental to potential and realized AC? How do those relationships change over time?*

We identify two major theoretical mechanisms through which family ownership can drive the heterogeneity and temporal variations in firm AC. First, family ownership can produce emotional attachment in the form of seeing the firm as "our business" (Demsetz and Lehn, 1985). Such emotional aspects are likely to alter the firm's strategic goals (Chrisman and Patel, 2012; Gómez-Mejía *et al.*, 2007; Patel and Chrisman, 2014) and determine which knowledge should be brought into the firm and which should be utilized (Ben-Oz and Greve, 2012; Lane *et al.*, 2006). Second, family ownership can influence the hierarchical structure and informal social relations within the firm (Cannella *et al.*, 2014; Cruz *et al.*, 2010; Patel and Cooper, 2014), setting the constraints of which type of knowledge can be acquired, assimilated, transformed, and exploited (Lane *et al.*, 2006; Mason and Leek, 2008; Sammarra and Biggiero, 2008; Todorova and Durisin, 2007).

Starting from this framework, we explain how firm ownership can be an important driver of so far unexplained heterogeneity and temporal variations in AC (Lane *et al.*, 2006; Nag and Gioia, 2012; Volberda *et al.*, 2010) and contribute to literatures on AC and family firms in three major ways. First, we shed light on the socio-emotional mechanisms underlying the effect of firm ownership on the acquisition and assimilation (i.e., building up potential AC) as well as the transformation and exploitation (i.e., realized AC) of external knowledge (e.g., Huy, 2012) and we disentangle the firm's ability to build (potential and realized) AC from its willingness or incentive to do so. Although this notion has been implicit in prior research (e.g., Cohen and

Levinthal, 1990), it has not been directly addressed. Second, we examine how family owners, depending on their emotional attachment and on how they exert their power, can exert heterogeneous influence on their firm and thus on AC. We thereby address the lack of theoretical consensus around existing "umbrella" constructs capturing the family owners' influence on the business, such as "familiness" (Habbershon *et al.* , 2003) and "socio-emotional wealth" (Gómez-Mejía *et al.*, 2007)[1] commonly used in family firm research (e.g., Miller and Le Breton-Miller, 2014). This enables identifying important contingency factors and reconciling contradictory theory and evidence on innovation in family firms (Calabrò et al., 2018; De Massis *et al.*, 2013a). While our analysis focuses particularly on family ownership, the mechanisms underlying the acquisition, assimilation, transformation, and exploitation of external knowledge that we bring to light could explain other firm capabilities and the influence of other types of owners. Finally, we advance the current understanding of inter-temporal differences in firm AC. Cohen and Levinthal's (1990) seminal definition emphasizes the developmental, cumulative, and path-dependent nature of AC, but most theoretical and empirical analyses adopt a static approach and tend to take the dynamic mechanisms underlying the acquisition and exploitation of external knowledge for granted (e.g., Lane *et al.*, 2006; Volberda *et al.*, 2010). We challenge and extend this view by introducing dynamic and inter-temporal considerations on how emotional attachment and the power concentration of family owners change over time and how these variations can disrupt the development of firm AC.

[1] While the concept of familiness bundles various resources that are idiosyncratic to family firms, the concept of socio-emotional wealth summarizes a variety of different non-financial goals ascribed to family ownership; while influential and useful for many research endeavours, both concepts suffer from a lack of precision of how precisely the family exerts influence on the company (e.g., Chua, Chrisman, and De Massis, 2015; Miller and Le Breton-Miller, 2014).

ANTECEDENTS OF AC AND THE ROLE OF FIRM OWNERSHIP

Firm-internal drivers of AC

AC is the ability to acquire, assimilate, transform, and exploit external knowledge to extend or renew existing knowledge stocks and use such resources to innovate and gain a competitive advantage (Cohen and Levinthal, 1990; Lane *et al.*, 2006; Zahra and George, 2002). In the following, we build on Zahra and George's (2002) distinction between potential AC, which refers to the knowledge funnel that determines which external information crosses the firm's boundaries (i.e., knowledge acquisition and assimilation, Lane and Lubatkin, 1998; Van den Bosch *et al.*, 1999), and realized AC, which refers to transforming the externally acquired knowledge into valuable outputs (i.e., knowledge transformation and exploitation, Narasimhan *et al.*, 2006; Tsai, 2001). This distinction enables clarifying their different antecedents and underlying mechanisms related to distinct firm capabilities with regard to the acquisition and exploitation of external knowledge (Zahra and George, 2002).

More specifically, potential AC entails departing from existing knowledge bases towards openness to broad and potentially distant knowledge sources, leading to uncertainty on the scope and complexity of external knowledge (Benner and Tushman, 2002; Zahra and George, 2002). The underlying capabilities are primarily based on decision-making (Jansen *et al.*, 2005; Torodova and Durisin, 2007) and on processes that enable identifying and evaluating externally generated knowledge to support analyzing, processing, interpreting, and understanding the information embedded in this knowledge (Zahra and George, 2002). Conversely, realized AC requires integrating newly acquired knowledge into the existing knowledge base and depends on the firm's capabilities to refine, extend, and leverage this resource stock (Cohen and Levinthal, 1990; Zahra and George, 2002). Firms combine acquired external knowledge with existing knowledge stocks and this is integrated into the cognitive frames of the organizational members (Nag and Gioia, 2012; Tripsas and Gavetti, 2000). As such, realized AC implies relatively lower levels of uncertainty about the new knowledge compared to potential AC (Jansen *et al.*, 2006; Lewin *et al.*, 2011). This insight is also found in research on innovation and organizational learning, distinguishing between variance enhancing (i.e., exploration) and variance reducing (i.e., exploitation) activities (e.g., Benner and Tushman, 2002; March, 1991).

Research on the antecedents of AC traditionally emphasizes structural factors referring to the characteristics of prior knowledge, environmental conditions, and learning relationships (Cohen and Levinthal, 1990; Foss *et al.*, 2010; Lane *et al.*, 2006; Van Wijk *et al.*, 2008; Volberda *et al.*, 2010). For example, considerable attention is paid to such factors as the depth and breadth of the firm's existing knowledge (Cohen and Levinthal, 1990; Lane *et al.*, 2001; Sammarra and Biggiero, 2008), the competitive and regulatory setting (Van den Bosch *et al.*, 1999), and inter-firm arrangements (e.g., Lane and Lubatkin, 1998; Mason and Leek, 2008; Rothaermel and Alexandre, 2009). In recent years, AC is increasingly conceptualized as a dynamic capability (e.g., Lane *et al.*, 2006; Zahra and George, 2002), meaning that scholars have moved from seeing firms as passive recipients of knowledge to recognizing their active role in interpreting external knowledge to fit their own strategies and structures (Lane *et al.*, 2006; Nag and Gioia, 2012; Volberda *et al.*, 2010). The focus is thus on firm-internal factors that produce heterogeneity in firms' potential and realized AC (Jansen *et al.*, 2006; Lane *et al.*, 2006; Volberda *et al.*, 2010). In this regard, scholars emphasize the pivotal role of managers and their cognitive processes (cf. Lane *et al.*, 2006, p. 857). For example, Tripsas and Gavetti (2000) show that managers offset their limited knowledge of the environment by using cognitive representations deriving from historical experience to drive search processes in a new technological environment. Nag and Gioia (2012) observe that top managers' existing knowledge and their beliefs on external knowledge not only shape their approaches to scan external knowledge, but also the subsequent use of this acquired knowledge.

Research on AC has largely been developed in the context of widely held, professionally-managed firms, thereby disregarding the important influence of owners, and, implicitly, assumes that the decisions and processes involved in the use of external knowledge are influenced by organizational members at various levels, yet not by owners. Indeed, owners are often treated as rather "inactive" group without much influence on firm level activities and capabilities. For instance, the rather comprehensive literature reviews on AC by Lane et al. (2006) and Volberda et al. (2010) do not include any reference to potentially influencing owners. This assumption is problematic as firm owners can influence key strategic decisions in many ways such as shareholder activism and direct involvement in management (Connelly *et al.*, 2010; David *et al.*, 2001; Hoskisson *et al.*, 2002). This lack of integration is especially an issue when considering that family ownership, predominant in most countries and industries (e.g., La Porta *et al.*, 1999), can be associated with strong affective and social ties between family owners and the firm, ultimately implying that socio-emotional considerations play a prominent role in decision-making (Gómez-Mejía *et al.*, 2007). This calls into question the overly rational view of AC developed in prior research (Lane *et al.*, 2006; Volberda *et al.*, 2010), suggesting that only limited understanding of AC is achieved when not explicitly taking into account the role of family owners, including their emotions and power, in shaping firm behavior.

The role of family ownership

Family owners are defined as individuals, related by blood and marriage, that possess, on the one hand, sufficient ownership shares to influence the firm's decision making and, on the other hand, the willingness to do so now and across generations (Carney, 2005; Chua *et al.*, 1999; De Massis *et al.*, 2014).[2] The amount of shares necessary for such ability and willingness to exert influence depends, among others, on the institutional setting as well as the legal form of the firm, ranging from absolute majority of equity shares in private firms to relative majority in publicly traded ones.

Although no studies directly examine the influence of family ownership on AC, research in related areas indicates the importance and potential complexity of this relation. As Table 1 shows, prior studies examine a number of aspects related to family ownership that, albeit indirectly, have implications for AC. For example, there is considerable interest in the influence of family ownership on R&D investments (e.g., Block, 2012; Chrisman and Patel, 2012; Gómez-Mejía *et al.*, 2013; Patel and Chrisman, 2014; Sirmon *et al.*, 2008), typically seen as a proxy of a firm's stock of prior knowledge and often associated with AC (Cohen and Levinthal, 1990; Lane *et al.*, 2001). R&D investments are however only a weak predictor of AC (Lane and Lubatkin, 1998; Tortoriello, 2015; Volberda *et al.*, 2010) and such emphasis overshadows other important aspects of the processes through which firms acquire and exploit external knowledge. Research on technology acquisitions (Kotlar *et al.*, 2013) indicates important consequences of family ownership on potential AC. Relatedly, research examining knowledge internalization within the family (Chirico and Salvato, 2014) and knowledge recombination in the family firm (Patel and Fiet, 2011) offers further insights into the knowledge structures of family firms, which are critical

[2] This definition excludes lone founders, i.e. circumstances where no relatives of a founder are involved in the business neither as owners nor as managers, consistent with prior literature showing that ownership by lone founders exercises substantially different effects from family ownership, i.e. when instead multiple family members are included as major owners in the firm (e.g., Block, 2012).

to their ability to acquire and assimilate external knowledge (Volberda *et al.*, 2010). Some authors provide insights on the influence of family ownership on realized AC such as Block (2012) and Duran et al. (2016) who focus on the ability to turn innovation input into output and Patel and Chrisman (2014) who examine explorative and exploitative R&D investments.

Collectively, the research summarized in Table 1 suggests that family ownership is likely to be an important antecedent of a firm's AC. However, most prior studies do not differentiate the effects of family ownership on knowledge acquisition, assimilation, transformation, and exploitation. Moreover, the few articles that hold implications for both potential and realized AC tend to emphasize either the positive or the negative effects of family ownership (e.g., Patel and Chrisman, 2014), but no theoretical framework explains how simultaneous positive and negative effects may operate through different mechanisms. Finally, prior studies tend to consider family ownership as homogeneous, thereby overlooking the variety of forms it can take (Chua *et al.*, 2012). Recent research identifies some contingency factors such as life cycle stages (Sharma and Salvato, 2011) and situational variables such as performance feedback (Chrisman and Patel, 2012; Kotlar *et al.*, 2013; Patel and Chrisman, 2014), pressure from institutional investors (Gómez-Mejía *et al.*, 2013), imitability threats (Sirmon *et al.*, 2008), and the escalating bargaining power of suppliers (Kotlar *et al.*, 2014). However, knowledge of how the influence of family owners varies across populations of firms is nascent at best (e.g., Chua *et al.*, 2012). For these reasons, it is not possible to extrapolate from existing research to form an overarching framework that explains the mechanisms through which family owners influence AC and the conditions under which family ownership is beneficial or detrimental to the firm's potential and realized AC. To address this issue, we develop a model of the influence of family owners on firm behavior and use this to build our analysis of its consequences on AC.

RECONCEPTUALIZING THE INFLUENCE OF FAMILY OWNERS

Conceptualizations of family ownership and organizational consequences vary across theoretical frameworks and empirical studies, ranging from broad concepts, such as socio-emotional wealth (Gómez-Mejía *et al.*, 2007) and familiness (Habbershon *et al.*, 2003), to more granular conceptualizations deconstructing the influence of family owners into its multiple components (e.g., the "Four Cs" model, Miller and Le Breton-Miller, 2005; the "Three Ps", Carney, 2005). Table 2 summarizes previous attempts to define the influence of family owners, showing that they converge to some extent but also differ in many ways, as each tends to rely on a different theoretical perspective and emphasize different elements. Most noticeably, all definitions tend to treat the different components of family influence as reflective and covariant, thereby implicitly assuming that, as the level family ownership increases, also family owners' emotional attachment and power concentration will increase. Yet, even if the degree of family ownership is constant, how family members use their influence to shape firm behavior can vary significantly (Chrisman *et al.*, 2012; 2015b). Therefore, a single, linear construct of family influence is limited to fully understand and explain the heterogeneous influence of family ownership on firm behavior.

As Table 2 shows, when the various factors considered in each definition are disentangled and considered separately, they tend to converge around two major dimensions. First, a number of factors associated with family ownership appear to relate to emotional aspects, such as "Family's values and goals", "Image association between family and business", "Family culture" and "Family-firm identification". Second, another set of factors common to all the conceptualizations of family owner influence relates to power and decision-control aspects, such as "Family control of the dominant coalition", "Authority and autonomy of family owners", "Family members involved in strategic decisions" and "Unification of ownership and management in the family". Accordingly, our reconceptualization of family owner influence converges toward two main constructs, *emotional attachment* and *power concentration*, that respectively qualify the role of family owners in governing the firm, as illustrated in Table 2.

This classification provides a more granular and consistent theoretical base to examine the heterogeneity of family owner influence. In particular, we propose that the influence of family owners on the AC of their firm will vary depending on the strength of their emotional attachment to the firm and the degree of power concentration in the family, which can, but do not have to, correlate with the specific amount of ownership that the family possesses. While emotional attachment and power concentration might be, in parts, mutually reinforcing, these dimensions highlight different aspects of family influence that can vary independently from one another, at least in the short and mid term. Thus, elaborating on these two dimensions separately facilitates theorizing about their distinct effects. This allows avoiding the weaknesses of umbrella constructs and artificial dichotomies between family and non-family firms (Miller and Le Breton-Miller, 2014). It also allows broadening the applicability of our theoretical framework to other classes of owners with different configurations of emotional attachment and power concentration.

Emotional attachment

We define emotional attachment as the strength of social and affective ties between the group of family owners and the firm. Thus, emotional attachment is a construct that refers to the group of family owners in the firm, and is therefore a firm-internal factor that qualifies the nature of the relationship between firm owners and the business. Although family business literature portrays family firms as a particularly emotion-dense organizational setting (Kellermanns and Eddleston, 2004; Zellweger and Dehlen, 2012), we posit that emotional attachment is a continuous dimension ranging from weak to strong along which all (family-owned) firms can be arrayed. Research on emotions in organizations shows that the emotional considerations of decision-makers can significantly influence their interpretation of the internal and external environment as well as strategic goals and firm behaviors (e.g., Huy, 2012). The stronger the emotional attachment of family owners to the firm, the more they consider that their emotional value is at stake when making strategic decisions (Chrisman and Patel, 2012; Gómez-Mejía *et al.*, 2007; Kotlar *et al.*, 2014; Miller *et al.*, 2013; Patel and Chrisman, 2014). This produces a mix of rational and emotional considerations when formulating strategic goals (Kotlar and De Massis, 2013). Therefore, variations in emotional attachment will correspond to different strategic goals. As shown in Table 2, emotional attachment encompasses a number of elements that recur in prior conceptualizations of family influence, which together capture the current and intended relations between family owners and the firm.

Power concentration

Power concentration is defined as the degree to which discretion in decision-making – and, thus the rights to decide or act according to one's own judgment (e.g., Hambrick and Finkelstein, 1987)—is concentrated in the hands of family owners. We suggest that power concentration is also a continuous dimension ranging from low to high along which all firms can be arrayed. Similar to emotional attachment, power concentration is a firm-internal factor that refers to the group of family owners in the firm, and further contributes to qualifying the nature of the relationship between firm owners and the business. When power is more concentrated in the hands of family owners, knowledge, information, and ideas tend to be generated at the top and cascade down the organization (Carney, 2005; Ibarra, 1992; Mintzberg, 1980). As such, family owners can initiate major strategic changes without extensive bargaining with other organizational constituencies. However, power concentration also implies a higher power distance between family and non-family members, potentially lowering the weight given to the perspectives and ideas of non-family employees (Kellermanns and Eddleston, 2004; Patel and Cooper, 2014). Therefore, variations in power concentration in family owners correspond to different formal hierarchical structures and informal social relations. Table 2 illustrates that power concentration incorporates recurring factors in existing conceptualizations of family influence, which relate to the configurations of firm ownership and management.

MECHANISMS LINKING FAMILY OWNERSHIP TO AC

Drawing on prior literature, we have distilled two dimensions, emotional attachment and power concentration, that qualify the type of family owner influence and position the different forms that it can take within a multi-faceted continuum in relation to shaping the firm. We use these two dimensions to build a theoretical framework explaining the mechanisms that link family ownership to AC. There is currently no theory of the effects of family ownership on AC, which constitutes a major knowledge gap. Based on corporate governance, cognitive psychology, and AC research, we elaborate on the model of family owner influence illustrated in the previous section to examine the specific mechanisms through which family ownership can influence potential and realized AC. This analysis allows considering the contingency factors that contribute to determining the ultimate effect of family ownership on AC.

Emotional attachment and AC

AC is commonly seen as cumulative and path-dependent as existing knowledge defines the locus of search for new knowledge (Cohen and Levinthal, 1990; Zahra and George, 2002). Firms need to search broadly for diverse and complementary sources of external knowledge to benefit from recombination effects (Fleming and Sorenson, 2001). Therefore, the firm's willingness to move away from current organizational routines and knowledge bases is essential to potential AC (Katila and Ahuja, 2002). In this regard, the cognitive processes underlying decisions on external knowledge acquisition can be crucial. Cognitive psychology literature suggests that ownership can produce a psychological state that leads individuals to viewing objects they can control as part of their self-domain while those they cannot control fall into the non-self domain (Dittmar, 1992; Pierce *et al.*, 2001). Individuals tend to attach symbolic valence to their possessions that increases their worth beyond their economic value (e.g., Belk, 1988; Ciarrochi and Forgas, 2000). Hence, the stronger the family owners' emotional attachment to the firm, the more they are likely to value the firm's existing knowledge assets, to attribute lower value to external knowledge that is distant from their existing knowledge bases (König *et al.*, 2013), and consequently avoid diverging from the firm's current stock of knowledge.

It follows that as emotional attachment strengthens, family owners will become increasingly committed to current knowledge assets (Pierce *et al.*, 2001) and less willing to consider diverse sources of external knowledge. Existing knowledge has plausibly contributed to the firm's success and the acquisition of new external knowledge could thus be seen as "painful" (Tushman and Anderson, 1986), requiring a substantial reconfiguration of existing knowledge and divesting assets that formerly constituted the firm's core. For these reasons, emotional attachment can expose family owners to psychological preconceptions against external knowledge, generating cognitive traps (Miller, 1991) and organizational pathologies such as inertia (Hannan and Freeman, 1984) and the not-invented-here syndrome (Cohen and Levinthal, 1990).

Moreover, strong emotional attachment leads owners to see the preservation of their emotional value as a primary reference in strategic decisions (Gómez-Mejía *et al.*, 2007; Zellweger *et al.*, 2012) and thus to avoid the potential loss of control ensuing from the acquisition of new external knowledge. The benefits of external knowledge acquisition and assimilation are uncertain since managers are required to make decisions on aspects over which they have less control than within the boundaries of their firm (Kotlar *et al.*, 2013). Relatedly, by acquiring and assimilating external knowledge, the firm's innovation activities become increasingly dependent on the competencies and expertise of external actors. In the future, these actors could take advantage of their power to gain some control over the firm's resources. Therefore, when emotional attachment is strong, family owners are likely to see the uncertainty related to external knowledge acquisition and assimilation as a threat to maintaining their socio-emotional endowment (Chrisman and Patel, 2012; Kotlar *et al.*, 2013). This argument is in line with previous empirical evidence suggesting that family firms due to their emphasis on preserving emotional connections with the business tend to acquire less external technology compared to non-family firms (Kotlar *et al.*, 2013) and that such emphasis leads to lower willingness to engage in technological collaborations with external partners (e.g., Nieto *et al.*, 2015, Pittino and Visintin, 2011). Taken together, these arguments suggest that family owner emotional attachment to the firm could decrease potential AC.

Proposition 1a (P1a): Family ownership influences the firm's AC through emotional attachment, such that increasing emotional attachment of family owners decreases the level of potential AC.

A different picture emerges when considering how the strength of family owner emotional attachment influences realized AC. Realized AC is directed towards integrating newly acquired knowledge into existing knowledge bases to expand current products and services and increase the efficiency of existing processes (Cohen and Levinthal, 1990; Zahra and George, 2002). Uncertainty on the scope and complexity of external knowledge arguably lessens once it is acquired, combined with the firm's existing knowledge, and integrated into the family owners' cognitive frames (Benner and Tushman, 2002; Jansen *et al.*, 2006; Nag and Gioia, 2012; Tripsas and Gavetti, 2000). It is thus likely that reluctance towards external knowledge will lessen once it has been assimilated. Family owner emotional attachment could thus be a strong incentive to transform and apply new knowledge once assimilated to reinforce existing products, services, and processes (Benner and Tushman, 2002; Levinthal and March, 1993; Lewin *et al.*, 2011).

Clearly, any owners who have invested a significant portion of their personal wealth will have a strong incentive to ensure the financial resources allocated to acquiring new technologies are harvested efficiently and that new knowledge is used intensively (Carney, 2005). In addition, the emotional concerns of family owners in acquiring external knowledge imply they have invested effort and time in such knowledge, which increases their psychological attachment to it (Pierce *et al.*, 2001). Once new external knowledge is available within the firm, owners will tend to incorporate this knowledge into their self-domain (e.g., Ciarrochi and Forgas, 2000). Hence, the family owners' personal feelings, name, and reputation are at stake and they are likely to commit to ensuring such knowledge is effectively incorporated to improve products and production processes. Moreover, the investment and resource mobilizations required to transform and exploit newly available knowledge are lower compared to the first phase (Zahra and George, 2002), which implies lower uncertainty and more predictable outcomes (Cardinal, 2001; Jansen *et al.*, 2006). Accordingly, emotional attachment is likely to lead family owners to perceive transformation and exploitation efforts towards newly available technology as a viable strategy to nurture their emotional endowment by means of continued investments in the firm's knowledge base. Using newly acquired and assimilated knowledge to strengthen the firm's core business through investing in knowledge exploitation is thus seen as consistent with preserving the emotional value of owners. Such knowledge exploitation could also reduce performance variability and increase the family owners' reputation due to their historic links with these business activities (Patel and Chrisman, 2014). These arguments suggest that family owner emotional attachment will influence potential and realized AC in opposite directions.

Proposition 1b (P1b): Family ownership influences the firm's AC through emotional attachment, such that increasing emotional attachment of family owners increases the level of realized AC.

Power concentration and AC

To acquire external knowledge, firms need to scan their environment, particularly sources that provide complimentary and distinct knowledge but are also related to prior knowledge (Zahra and George, 2002). Potential AC depends not only on the willingness but also on the ability to deviate from existing routines and knowledge to expand the type and scope of input into the knowledge funnel. In this respect, prior research argues that the firm's authority structures can constrain or expand external knowledge acquisition by narrowing or broadening the span of control of key decision makers (Cardinal, 2001; Lane *et al.*, 2006). In particular, as organizational authority is concentrated in family owners, they are subject to fewer internal and external constraints and can thus easily pursue the acquisition of new external knowledge, resulting in increased potential AC. Concentration of power in the hands of family owners provides them with particularly strong bargaining power (Hambrick and Finkelstein, 1987), meaning that family owners, if keen on acquiring and assimilating external knowledge, are exempt from the internal bureaucratic constraints that limit decision-makers in firms where power is more diluted (Carney, 2005). Consequently, power concentration in the hands of family owners can reduce the time and procedures that commonly delay inflows of knowledge and increase the speed and intensity of efforts to identify and gather new knowledge, thereby facilitating the firm's potential AC (Cohen and Levinthal, 1990; Todorova and Durisin, 2007; Zahra and George, 2002).

Furthermore, as power is concentrated in the hands of family owners, they can act with greater variability in their choices (Carney, 2005), which enables considering alternative information and knowledge. Concentrated power releases family owners from the instrumental rationality that typically ensues from formal procedures, checks, and balances and allows making decisions on acquiring and assimilating uncertain assets (e.g., Jansen *et al.*, 2006). As power concentration relaxes procedural rigor, family owners' decisions become conceivably less predictable and more capricious, and enable pursuing a greater variety of sources of external knowledge. Relatedly, when power is highly concentrated in the hands of family owners, it is reasonable to expect lower reliance on formalized management practices as these would inhibit the family owners' freedom (Carney, 2005). Formalization refers to "the degree to which a codified body of rules, procedures or behavior prescriptions is developed to handle decisions" (Pierce and Delbecq, 1977, p. 31). Thus, formalization is a form of control of the individual behaviors of managers and objectifies decision-making. Scholars have long recognized that formalization obstructs openness, which is a necessary precondition of knowledge acquisition and assimilation (e.g., Jansen *et al.*, 2006; Shepard, 1967). Moreover, empirical evidence indicates that formalization has a negative effect on the potential AC of teams (Jansen *et al.*, 2005). As power becomes more concentrated, family owners are likely to relax formalization so that the efforts of key decision makers can be directed towards expanded aspects of the external environment, producing greater knowledge acquisition intensity and scope. Accordingly, power concentration in family owners enables the firm to build up potential AC.

Proposition 2a (P2a): Family ownership influences the firm's AC through power concentration, such that increasing power concentration increases the level of potential AC.

However, power concentration in family owners may be detrimental when it comes to transforming and exploiting newly acquired knowledge, suggesting an opposing effect of power concentration on the firm's realized AC. Realized AC reflects the firm's ability to transform and exploit external knowledge once acquired to create valuable outcomes, and is particularly driven by the support of members at lower levels of the organizational pyramid (Lenox and King, 2004; Zahra and George, 2002). Indeed, middle managers and employees are knowledge carriers of daily routines (Ibarra, 1992) and are critical to exchanging knowledge across disciplinary and hierarchical boundaries (Jansen *et al.*, 2005; Teece *et al.*, 1997). Higher power concentration gives family owners the discretion to act with greater variability in their choices, but can also cause authority to prevail over individual skills and experience in determining involvement in decisions on which knowledge to transform and apply within the organization and which to discard. Authority structures have important implications on how the attention and motivation of organizational members are directed towards innovation activities (Cardinal, 2001). For example, Verbeke and Kano (2012) argue that the concentration of power in the hands of firm owners causes a "bifurcation bias" or mounting discrepancy between family owners and other managers and employees. The latter are considered outsiders and treated asymmetrically, typically disregarding their contributions and excluding them from obtaining rewards based on accomplishments. Similarly, Cannella *et al.* (2014) show that family owners tend to reduce the involvement of outsiders in decision-making. It follows that the weight given to the views and ideas of non-family managers and employees will diminish as power concentrates in family owners (Patel and Cooper, 2014), which can disrupt collective learning processes (Bunderson and Reagans, 2011; Lenox and King, 2004) and decrease the level of knowledge exchange (Kellermanns and Eddleston, 2004). High power concentration is likely to increase the perceptions of disparity in status and compensation between family and non-family members, leaving non-family managers and employees with little incentive to contribute to the firm's efforts to transform and exploit newly available knowledge (Harrison and Klein, 2007). When power is highly concentrated in family owners, organizational members in the middle and lower ranks have little opportunity to have a say on what and how knowledge is used (Carney, 2005; Geeraerts, 1984). If decision-making on external knowledge is dominated by family owners, the commitment of non-family members to the strategic decisions is likely to diminish (Patel and Cooper, 2014). Therefore, lower level managers and employees will be less incentivized to put their efforts and creativity into translating and applying the new knowledge to improve current processes and products (Verbeke and Kano, 2012), which is likely to jeopardize the firm's capacity to process external knowledge (Lenox and King, 2004).

Thus, while power concentration in family owners is likely to relax the constraints to build up potential AC as argued above, it reduces knowledge exchange across the organization, eventually obstructing the transformation and implementation of newly acquired knowledge.

Proposition 2b (P2b): Family ownership influences the firm's AC through power concentration, such that increasing power concentration decreases the level of realized AC.

The paradoxical effects of family ownership on AC

Our analysis has identified two key mechanisms through which family ownership can facilitate and hamper AC as summarized in Figure 1. Specifically, we argue that family ownership hinders the development of potential AC but assists the development of realized AC as the family owners' emotional attachment to the firm strengthens (Proposition 1). Conversely, family ownership has a positive effect on potential AC and a negative effect on realized AC as power is concentrated in family owners (Proposition 2). As such, our analysis suggests that the influence exerted by family ownership on AC through emotional attachment and power concentration is misaligned and therefore has decisive implications on the ultimate effect of family ownership on the firm's potential and realized AC. Ultimately, these effects hold important implications for organizational outcomes such as innovation, competitive advantage, and firm performance (Volberda *et al.*, 2010).

Motivation gap. With respect to potential AC, power concentration endows family owners with greater discretion and latitude of action (Carney, 2005). Thus, power concentration in family owners increases the firm's *ability* to search broadly, without the need to observe bureaucratic or administrative constraints. Nevertheless, the emotional attachment of family owners leads these decision-makers to undervalue external knowledge (König *et al.*, 2013; Kotlar *et al.*, 2013) and hence reduces the firm's *willingness* to acquire and assimilate knowledge outside existing domains. In other words, the combination of the positive effects associated with power concentration and the negative effects associated with emotional attachment suggests that family ownership affects potential AC in both upward and downward directions, possibly resulting in extremely high and extremely low degrees of potential AC amongst family firms depending on the specific combination of emotional attachment and power concentration in the respective firm. We can thus reasonably expect to observe higher heterogeneity in potential AC across firms with higher degrees of family ownership. The dotted box in Figure 1 illustrates the possible effects of family ownership on potential AC, where the upper and lower limits respectively represent a firm's willingness to acquire and assimilate external knowledge and its ability to do so. The actual level of potential AC, illustrated by the gray area in Figure 1, will become higher (lower) as the *motivation gap* between willingness and ability becomes smaller (larger). The consequences of family ownership on potential AC are thus complex to predict due to the inconsistency of the effects of emotional attachment and power concentration. The ultimate effect depends primarily on the motivation gap between the greater ability and lower willingness to acquire and assimilate external knowledge, and thus on contingencies that strengthen or weaken the effects of family owners' emotional attachment.

Definition 1: A motivation gap occurs when the firm's higher ability to acquire and assimilate external knowledge is counterbalanced by its lower willingness to do so, and the size of the gap depends on contingencies that relate to the family owners' emotional attachment.

Implementation gap. With respect to realized AC, the reluctance towards external knowledge caused by family owner emotional attachment lessens and is replaced by incentives to transform and exploit the acquired knowledge resources for commercial ends (Carney, 2005; Duran *et al.*, 2016; Patel and Chrisman, 2014). Thus, emotional attachment increases the firm's *willingness* to transform and exploit external knowledge once acquired. Yet, power concentration in family owners isolates them from the rest of the organization (Ibarra, 1992), which reduces the incentive of lower-rank managers and employees to actually implement such new knowledge in existing processes and products (Lenox and King, 2004; Patel and Cooper, 2014). Thus, power concentration reduces the firm's *ability* to transform and exploit newly acquired knowledge. For these reasons, as for potential AC, the simultaneous influence of emotional attachment and power concentration can reasonably increase the heterogeneity of realized AC among family-owned firms. The possible effects of family ownership on realized AC are illustrated in the dotted box in Figure 1. The actual level of realized AC (the gray area in the figure) will become higher (lower) as the *implementation gap* between ability and willingness to transform and exploit external knowledge becomes smaller (larger). Therefore, our examination suggests that the ultimate effect of family ownership on realized AC varies according to the size of the implementation gap between the family owner's higher willingness and lower ability to transform and exploit external knowledge and thus depends on contingencies that increase or decrease the influence of family owners on firm structure through power concentration.

Definition 2: An implementation gap occurs when the firm's higher willingness to transform and exploit external knowledge is counterbalanced by the firm's lower ability to do so, and the size of the gap depends primarily on contingencies that relate to family owners' power concentration.

The motivation and the implementation gaps highlighted in our analysis show two paradoxical effects of family ownership on potential and realized AC. Our analysis suggests that family ownership can enhance the capability to acquire, assimilate, transform, and exploit external knowledge but only under certain conditions. In an attempt to identify the conditions under which firms reduce the misalignment between ability and willingness to acquire, assimilate, transform, and exploit external knowledge, in the following section we discuss how contingency factors relating to family owner emotional attachment and power concentration, and the latent and time-varying nature of these influences, affect the identified gaps. Accordingly, we advance a contingency-based and temporal model that helps predict whether family ownership will facilitate or impede the development of AC.

CONTINGENCIES DETERMINING FAMILY OWNERSHIP EFFECTS ON AC

Prior research shows the high heterogeneity of AC across firms (Cassiman and Veugelers, 2006; Jansen *et al.*, 2005; Lane *et al.*, 2001; Yayavaram and Ahuja, 2008). Identifying the drivers of such heterogeneity has recently attracted considerable research interest (Lane *et al.*, 2006; Todorova and Durisin, 2007; Volberda *et al.*, 2010). Our analysis suggests that family ownership is an important internal driver of AC heterogeneity but such influence can be both positive and negative. By outlining the two key mechanisms through which family ownership influences potential and realized AC, namely, emotional attachment and power concentration, our theoretical approach helps identify and classify the contingency factors that, by operating on the specific mechanisms outlined above, can cause positive or negative family ownership effects to prevail.

Contingencies of family influence relating to emotional attachment

According to our analysis, family ownership can produce a misalignment between the firm's ability to build up potential AC and its willingness to do so, the motivation gap, which increases or decreases the firm's potential AC depending on the relative strength of family owner influence through emotional attachment. Accordingly, we identify contingency factors that determine the effect of family ownership on potential AC. In particular, we first investigate the factors that increase the motivation gap and then discuss the factors that decrease this gap.

Two specific contingency factors emerge from research that could operate through family owner emotional attachment to the firm, namely, family-firm identification (Deephouse and Jaskiewicz, 2013) and family control intentions (Chua *et al.*, 1999; Zellweger *et al.*, 2012). Literature suggests that when family owners identify with the firm and see it as "our business" (Demsetz and Lehn, 1985; Kammerlander, 2016) or include their name in the firm's name (Deephouse and Jaskiewicz, 2013; De Massis et al., 2018), they tend to perceive the firm's wealth as an extension of their family's wellbeing (e.g., Miller and Le Breton-Miller, 2005). Moreover, they perceive a higher sense of belonging that leads them to feel emotionally invested in the firm (Deephouse and Jaskiewicz, 2013; Zellweger *et al.*, 2012). Therefore, family-firm identification is likely to increase the importance of emotional attachment in family owner decisions on the use of external knowledge and thus increase the motivation gap.

The second factor is family control intentions, defined as the family owners' vision for the firm to be transmitted to the next generation (Chua *et al.*, 1999; Zellweger *et al.*, 2012). Some studies suggest that family control is the primary concern of family owners and that such intentions can derive from the firm's foundation or emerge later in its life cycle triggered by events such as the birth of new family members or the desire of a younger generation member to join the business (Chua *et al.*, 2004). For these reasons, the intentions for continued family control play a central role in emerging theories of the family firm and are considered a primary driver of family firm heterogeneity (Chrisman *et al.*, 2012; Chua *et al.*, 1999). The intention for family control leads family owners to consider the future benefits of control as part of their current emotional endowment, which increases the emotional value family owners attribute to the firm beyond its economic value (Zellweger *et al.*, 2012). It follows that the intention for family control increases the salience of family-centered goals in decision making (Chrisman *et al.*, 2012) and strengthens the importance of family owner emotional considerations in decisions on external knowledge acquisition. Combining these arguments with our proposition that family owner emotional attachment reduces the willingness to acquire and assimilate external knowledge and causes a motivation gap that inhibits potential AC leads to predicting that the motivation gap are likely to be stronger when family owners form explicit intentions for continued family control.

Proposition 3 (P3): Ceteris paribus, the motivation gap becomes larger and the negative effect of family ownership on potential AC prevails when (a) family owners strongly identify with the firm or (b) family owners have strong family control intentions.

Research also indicates two key factors that may reduce the influence of family ownership through emotional attachment: first, threats that undermine economic performance (Chrisman and Patel, 2012; Patel and Chrisman, 2014) and, second, factors that endanger the family owner's future control of the firm (Kotlar *et al.*, 2013, 2014; Sirmon *et al.*, 2008). Studies adopting a behavioral theory perspective show that negative performance feedbacks trigger preference reversals that lead to actions that are diametrically opposed to those observed in more favorable situations (e.g., Chrisman and Patel, 2012). For example, research on R&D investments shows that, faced with negative performance feedbacks, family firms invest more in R&D than non-family firms (Chrisman and Patel, 2012) and change their emphasis from exploitative to explorative R&D investments (Patel and Chrisman, 2014). A similar pattern is observed in the wake of threats that could reduce the family owner's freedom and authority in the future, such as when supplier bargaining power increases (Kotlar *et al.*, 2014) or when competitors imitate the firm's resources and processes (Sirmon *et al.*, 2008). In these situations, the firm's survival and continuity are put at risk and a rational logic is likely to take precedence over emotional concerns, leading to higher potential AC.

Proposition 4 (P4): Ceteris paribus, the motivation gap becomes smaller and the positive effect of family ownership on potential AC prevails when (a) the firm faces negative performance feedbacks or (b) the firm faces control threats.

Contingencies of family influence relating to power concentration

The second mechanism that links family ownership to the level of AC is the concentration of power in family owners, which we argue is the primary cause of the implementation gap that makes a firm less able to transform and exploit newly acquired knowledge despite its willingness to do so. Accordingly, the contingency factors that determine the ultimate effect of family ownership on realized AC relate to the power concentration dimension of family influence.

Our model implies that the degree of power concentration can change according to ownership and management configuration. We draw on prior studies on corporate governance in family firms to identify factors that strengthen the relationship between family ownership and AC through power concentration: the presence of a family CEO (Gómez-Mejía *et al.*, 2001) and family involvement in other top managerial positions (Cannella *et al.*, 2014). A considerable body of research shows that the family owners' span of control increases when the ultimate control of the firm is restricted to a close circle of family owners and affiliates (Carney, 2005; Patel and Cooper, 2014). Moreover, prior empirical studies suggest that power concentration is amplified when family owners appoint the CEO and other top executives based on personal relationships, thereby forming relational rather than arm's length agreements (Cannella *et al.*, 2014; Cruz *et al.*, 2010; Gómez-Mejía *et al.*, 2001) and gaining substantial decision-making authority (Carney, 2005). Therefore, we expect the influence of family ownership through power concentration to become stronger with the increasing managerial involvement of family members, leading to lower realized AC.

Proposition 5 (P5): Ceteris paribus, the implementation gap becomes larger and the negative effect of family ownership on realized AC prevails in the presence of (a) a family CEO or (b) family members involved in top management.

Two factors emerge from studies on corporate governance in family firms that can weaken the influence of family ownership through power concentration: the dispersion of family ownership among multiple family members (De Massis et al., 2013b; Schulze *et al.*, 2003) and institutional ownership investments (Gómez-Mejía *et al.*, 2013). When family ownership is divided among multiple members, the principal family owners tend to lose authority and influence over other family shareholders and struggle to obtain their support to pursue their preferences (Schulze *et al.*, 2003), especially in light of the diversity of goals and values pursued by other family members (Kotlar and De Massis, 2013). Therefore, family ownership dispersion is likely to reduce power inequality and bifurcation biases in the firm (Patel and Cooper, 2014; Verbeke and Kano, 2012). Family owners are likely to allow higher representation of non-family managers and employees in strategy formulation processes, thereby increasing their motivation to contribute to transforming and exploiting new knowledge and reducing the implementation gap. The second factor that can operate as a contingency factor is the presence of institutional ownership investments. Recent research has shown the increasing activism of institutional investors who tend to open up the firm's governance structures based on their ownership stake (e.g., Connelly *et al.*, 2010; Hoskisson *et al.*, 2002). Some research suggests that institutional investors tend to safeguard their economic interests by appointing independent directors and increasing the level of governance mechanisms aimed at reducing family owner discretion (Gómez-Mejía *et al.*, 2013). Therefore, we expect the presence of institutional investors to weaken the influence of family ownership on external knowledge transformation and exploitation through power concentration.

Proposition 6 (P6): Ceteris paribus, the implementation gap becomes smaller and the positive effect of family ownership on realized AC prevails in the presence of (a) high family ownership dispersion or (b) institutional investments.

TEMPORAL VARIATIONS OF FAMILY OWNERSHIP EFFECTS ON AC

Literature often emphasizes the importance of considering temporal aspects in studying AC (e.g., Cohen and Levinthal, 1990; Lane *et al.*, 2006; Volberda *et al.*, 2010). Furthermore, many scholars emphasize the life-cycle of family ownership and its organizational consequences (e.g., Gersick *et al.*, 1997; Kotlar and De Massis, 2013; Schulze *et al.*, 2003; Zellweger *et al.*, 2012). Therefore, a temporal perspective is critical to shedding further light on the diversity of forms that family influence can take and the ensuing variations of AC over time. Our analysis particularly focuses on two core factors that we argue determine the development of family owner emotional attachment and power concentration: duration of family ownership and family ownership succession.

Duration of family ownership and AC

Cognitive psychology suggests that the influence of family ownership on potential AC through emotional attachment, primarily stemming from the family owners' tendency to value external knowledge less than the knowledge that already exists, can vary with the duration of family ownership. The duration of family ownership refers to the length of time that family owners have been in control of the firm (Zellweger *et al.*, 2012). As noted above, emotional attachment to possessions generally follows a psychological appropriation process, namely, over time the owner increasingly perceives an asset as "mine" and its possession gradually becomes part of the owner's identity (Belk, 1988). This process unfolds with repeated rituals through which owners interact with the assets and attribute them personal meaning (Belk, 1988). Over time, family owners become intimately familiar with their firm's knowledge and recurrently invest in enhancing and exploiting this knowledge. They are thus likely to increase their psychological attachment to existing knowledge assets (Pierce *et al.*, 2001). For example, research on organizational tenure suggests that the length of association between an individual or a group of individuals—whether it is an owner, a manager, or an employee—and the organization is directly related to work experience and job-related knowledge, which in turn are likely to increase path-dependency and to decrease risk-taking and experimentation (see Finkelstein and Hambrick, 1990; Ng and Feldman, 2010).

Extending these arguments to family owners, as the duration of family ownership increases, prior knowledge is likely to become part of the family owners' legacy and symbolize their continuity, increasing the later generation's perceived value of the assets beyond their financial value (Zellweger *et al.*, 2012). Likewise, we expect family owners to increase their psychological attachment to existing knowledge assets with time. These arguments, juxtaposed with those used to develop Proposition 1, suggest that the emotional attachment of family owners should increase over time, thereby increasing the perceived value of existing knowledge versus external knowledge. This, in turn, is likely to decrease willingness to acquire and assimilate new external technology, but increase willingness to transform and exploit previously acquired knowledge.

At the same, the influence of family ownership through power concentration is likely to weaken over time. Through repeated interactions with the organization's processes and products, family owners will build trust toward non-family managers and employees (Pierce *et al.*, 2001). The longer association between the owner and non-family members, in turn, is likely to foster the family's willingness to rely on the contribution of these members, supporting their participation in decision-making processes (Patel and Cooper, 2014) and reducing the distance between the upper echelon, owners and their associates, and the rest of the organization (Verbeke and Kano, 2012). This reduction of power concentration is likely to diminish the positive effect of family ownership on potential AC, while also mitigating the negative effect of family ownership on realized AC.

Based on this joint temporal evolution of the influence of emotional attachment and power of family owners on AC, we propose:

Proposition 7 (P7): Duration of family ownership increases the motivation gap and reduces the implementation gap, such that potential AC deteriorates and realized AC improves with the duration of family ownership.

Family ownership succession and AC

As the emotional attachment of family owners increases and power concentration decreases with the duration of family ownership, we suggest that over time family ownership will increasingly become an impediment to potential AC, while progressively reinforcing realized AC. However, it is also plausible to expect that this trend can be disrupted, at least provisionally, when an ownership succession occurs.

First, incoming family owners are likely to have a shorter history of interaction with the firm than their predecessors, and are thus less emotionally attached to the existing knowledge bases (e.g., Belk, 1988; Pierce *et al.*, 2001). Such a temporary reduction of family owners' emotional attachment is likely to have implications for both potential and realized AC. Indeed, this situation is likely to relax the cognitive biases that would otherwise lead family owners to see external knowledge as "not invented here", and to free the firm from the ensuing inertia or path-dependency when it comes to acquiring external knowledge. At the same time, a temporary reduction of emotional attachment may reduce family owners' potential over-commitment to exploiting previously acquired external knowledge, compared to the preceding family owners who have acquired the knowledge in the first place. In sum, both positive and negative effects of family ownership through emotional attachment are likely to become temporarily weaker.

The power structures of the firm are also likely to be disrupted, at least temporarily, when an ownership succession occurs. Incoming successors are likely to undertake a review of the existing organization, and possibly change the decision making processes in order to shape the firm according to their will (Miller *et al.*, 2003). For example, Miller *et al.* (2003) note that successors set up new business divisions, incite managerial turnover, and exclude other family owners from decision making to ensure they can freely imprint their vision on the firm. Thus, when an ownership succession occurs, the power concentration of incoming family owners is likely to become temporarily stronger, and decision making processes more centralized around the incoming family owner. This, in turn, is likely to strengthen both the positive effects of family ownership on potential AC (though power concentration) as well as the negative effects of family ownership on realized AC.

Taken together, these arguments suggest that the effect of family ownership through power concentration is likely to prevail over the effect through emotional attachment during transitions of family ownership. Thus, we propose:

Proposition 8 (P8): Family ownership succession reduces the motivation gap and increases the implementation gap, such that potential AC improves and realized AC deteriorates when an ownership succession occurs.

DISCUSSION

By integrating and extending prior research on AC and innovation in family firms, our primary purpose is to introduce family ownership as an important element to advance understanding of why firms operating under similar external conditions differ in their abilities to acquire, assimilate, transform, and exploit external knowledge. In this section, we summarize and discuss the theoretical contributions of this article and the implication of our work for future research and managerial practice. We also consider the reasons behind the contradictory theory and evidence on the influence of family ownership on firm innovation and discuss how our model helps reconcile this body of research. Finally, we discuss opportunities to test our model and extend its implications beyond the scope of this analysis.

Implications for AC theory

This article contributes insights that extend the current understanding of AC by introducing firm ownership in the debate on its organizational antecedents. Scholars identify several factors that can affect AC, focusing particularly on managers (Volberda *et al.*, 2010). By considering managers in isolation of firm ownership, scholars tend to focus on the development of AC in an impersonal setting and overlook the role of firm owners and the emotional considerations that can emerge when owners have strong social and emotional ties with the firm. Focusing on the consequences of firm ownership in terms of how firms manage external knowledge acquisition, assimilation, transformation, and exploitation, our analysis extends the current AC discussion beyond purely rational considerations to explain how emotional concerns affect the cognitive mechanisms underlying AC. As such, our analysis advances an emotion-based conceptualization of the cognitive processes involved in AC.

Our analysis shows two key paradoxes, the motivation and implementation gaps, reflecting the tension between the firm's willingness to develop AC and its ability to do so. The notion that AC requires both ability and willingness is implicit in prior conceptualization of the construct (e.g., Cohen and Levinthal, 1990; Lane *et al.*, 2006). However, most research into the antecedents of AC is limited to an ability-based view that takes willingness for granted. The antecedents that influence a firm's willingness to build AC are empirically less scrutinized than the firm's ability to do so (Lane *et al.*, 2006; Todorova and Durisin, 2007; Volberda *et al.*, 2010), which constitutes a further research area.

Disentangling the ability and willingness dimensions and encapsulating the underlying tension in the concept of motivation and implementation gaps, our analysis inspires a new approach to examining firm-level capabilities, particularly with regard to contingency factors and temporal dynamics. In the particular setting of family ownership, our analysis emphasizes that the misalignment between family owner influence with regards to the effects of emotional attachment and power concentration engenders inconsistent effects on AC such that family owners must balance their influence to achieve a fit between firm ability and willingness to develop AC. Rather than simply suggesting that some forms of firm ownership are more beneficial than others, our analysis suggests that the interplay between willingness and ability produces greater heterogeneity and variability in AC and therefore complicates the prediction of the ultimate effect of family ownership. To understand the sources of such heterogeneity, our analysis suggests that researchers should take a more nuanced and multifaceted perspective in identifying the multiple and potentially inconsistent mechanisms underlying capability development and seek creative ways that enable these effects to be mastered simultaneously. Applying these ideas beyond AC literature to advance understanding of the internal antecedents of other firm capabilities such as alliance capability, political management capability or entrepreneurial capability is a promising area for future research (Peteraf *et al.*, 2013).

Implications for innovation in family firms

By examining the influence of family owners on AC, this article also addresses an important debate on innovation in family firms (De Massis *et al.*, 2013a). Research has studied the influence of family ownership on a number of innovation aspects including R&D investments (e.g., Chrisman and Patel, 2012; Gómez-Mejía *et al.*, 2013; Sciascia *et al.*, 2015), knowledge internalization (Chirico and Salvato, 2014), and discontinuous technology adoption (Kammerlander and Ganter, 2015; König *et al.*, 2013). Although this body of research indicates that family ownership can be an important antecedent of innovation behaviors and outcomes, this literature is extremely fragmented and has yielded inconsistent conclusions and empirical results. By focusing on specific aspects of innovation, research has overlooked the possibility that family ownership can simultaneously exert positive and negative effects on innovation through different mechanisms. Moreover, some scholars note that family ownership influence varies greatly (e.g., Chrisman and Patel, 2012), yet little emphasis is placed on understanding such variations and the mechanisms that affect the organizational outcomes.

Our theoretical analysis goes beyond previous approaches by advancing a systematic reconceptualization of family owner influence and reconciles the divergent views by differentiating the effect of family ownership on external knowledge exploration and exploitation. We distil two dimensions from literature, emotional attachment and power concentration, examining their individual effects on the development of potential and realized AC. Our focus on AC allows reconciling the divergent views by highlighting the contradictions between firm owner emotional attachment and power concentration in relation to external knowledge. In particular, we demonstrate that these contradictory dimensions produce motivation and implementation gaps that explain why family ownership can increase the heterogeneity and variability of AC.

This analysis not only sheds light on the mechanisms underlying AC in family owned firms, but leads to understanding the importance of contingency factors and temporal aspects to predict the consequences of family ownership on innovation. More specifically, this analysis implies that variations in emotional attachment and power concentration may influence organizational adaptation over time, including AC. Our conceptual analysis responds to repeated calls in family business literature for greater understanding of the diversity of family ownership forms (e.g., Chrisman and Patel, 2012) and more dynamic perspectives on how firms acquire, assimilate, transform, and exploit external knowledge (e.g., Lane *et al.*, 2006; Schildt *et al.*, 2012; Van den Bosch *et al.*, 1999). In particular, the analysis suggests that family ownership affects how AC develops over time; our arguments suggest that AC in firms with family ownership is characterized by relatively long periods of decreasing potential AC and increasing realized AC (as per P7), and potentially shorter periods of disruption in correspondence with family ownership succession (as per P8). Figure 2 provides a schematic representation of these temporal patterns, thereby illustrating the temporal perspective on the evolution of absorptive capacity in firms with family ownership that we outlined above.

Thus, our theoretical analysis identifies family ownership as an important driver of variation in AC over time and offers a temporally contextualized view of differences in AC among family firms. This view challenges the traditional view of AC as path-dependent and cumulative (Cohen and Levinthal, 1990; Lane *et al.*, 2006; Volberda *et al.*, 2010) and recalls organizational change as a process that is not linear but involves alternate periods of stability and shock-engendered periods of disruption (Huy and Mintzberg, 2003; Lewin, 1951).

Implications for Practice

Besides theoretical advancements, our model also brings along important insights for practitioners. Family firm owners, as well as CEOs working in family-owned firms, are increasingly concerned about the innovativeness of their firm, given that remaining innovative and adapting to changing environments becomes increasingly important in digitalized, globalized, and fast changing environments. As such, it is of utmost relevance for those practitioners to not only learn about whether family firms are, on average, more or less innovative, as often examined by prior, empirical research (e.g., Chrisman and Patel, 2012; Duran *et al.,* 2016) but also to learn about the mechanisms that either foster their firms' innovativeness or impede it. Our theoretical model aims to provide nuanced explanations about how two important implications of family ownership, that is the owners' emotional attachment to the firm and their idiosyncratic power concentration, affects distinct dimensions of AC, namely potential and realized AC. Such framework allows family firm owners and managers to "map" their own firm's situation onto the proposed framework and to understand their strength and weaknesses with regard to AC. For example, family firms can use the family/non-family status of the CEO and the level of family involvement in the top management to assess the effects of family ownership on AC through power concentration. Similarly, by assessing the level of family-firm identification and family control intentions, among other factors summarized in Figure 1, family firms can estimate the effects that family ownership is likely to exert on potential and realized AC through emotional attachment. The combination of this knowledge, in turn, might allow them to assess the strength of family ownership influence on potential and realized AC, and take effective measures to close the motivation and/or implementation gap originating from those effects.

Our model suggests that both ability and willingness can cause poor performance in incorporating and using external knowledge. If the reason for poor AC is lack of willingness, then corrective actions could focus on tackling the lack of motivation by introducing a system of intrinsic and extrinsic incentives that weaken emotional concerns and stimulate the acquisition, assimilation, transformation, and exploitation of external knowledge. Instead, if the cause of poor AC is lack of ability, then the corrective actions could be directed at opening up the ownership and management of the firm to external actors or more broadly developing socialization mechanisms that facilitate the process of incorporating and using external knowledge.

Moreover, the proposed theoretical model offers some valuable and practical insights with regard to ownership tenure and succession. Succession is one of the most important, most pressing, and most discussed issue by family firm practitioners. Typical and frequent questions relate to *when* succession should take place. In particular, scholars and practitioners alike have debated about the pros and cons of long versus short ownership durations, and early versus late successions. Recent succession research (e.g., Hauck and Prügl, 2015) has increasingly focused on understanding the effect of succession on innovation, thereby often revealing mixed results. Our theoretical framework is useful to practitioners by providing them insights about the mechanisms through which ownership duration and succession affect various elements of AC. Knowledge about those effects might be highly valuable in firm-specific discussions about when ownership succession should take place.

Opportunities for Future Research

Although our propositions particularly emphasize family ownership, our model also lays the groundwork to extend our analysis to other types of owners. While firms owned by families may be characterized by particularly high levels of emotions and power, those attributes do not exclusively exist for those firms. For instance, state-owned firms might be characterized by similar levels of power, and decision-making in foundation-owned firms might also follow non-rational, or emotional considerations. Hence, constellations of ownership constituencies may be positioned at intermediate levels of our model depending on the strength of their emotional attachment to the firm and the degree of power concentration. Thus, future work, especially empirical studies, should examine the influence of different forms of firm ownership on AC including families, business angels, venture capitalists, and large public blockholders such as pension funds, insurance companies, mutual funds, and banks (Connelly *et al.*, 2010; David *et al.*, 2001; Hoskisson *et al.*, 2002; Kim *et al.*, 2008). For example, pension funds tend to hold shares for longer periods than hedge funds (Hoskisson *et al.*, 2002) but may not be emotionally attached to the firm. Conversely, in cooperative forms of ownership, owners may have strong social and emotional links with the firm but may not have enough power individually to influence the firms' AC. Contrary to the predominant approach in corporate governance research examining the direct link between ownership structure and firm behaviors and performance (e.g., Connelly *et al.*, 2010; Hoskisson *et al.*, 2002; Kim *et al.*, 2008), our analysis suggests that future research would benefit from explicitly considering the different mechanisms that influence AC and their interaction with other antecedents such as the characteristics of the firm's existing knowledge (Lane *et al.*, 2001), learning relationships (Rothaermel and Alexandre, 2009), and environmental conditions (Van den Bosch *et al.*, 1999).

Quantitative studies are needed to test the relationships proposed in this paper, including the links between family ownership and AC through the mechanisms of emotional attachment and power concentration, the role of contingency factors, as well as their potential variations over time. Our theoretical framework suggests that emotional attachment and power concentration work as inconsistent mediators (MacKinnon, 2008), such that the effects of family ownership through emotional attachment and power concentration are opposite. Therefore, the inclusion of these variables can help resolve inconsistent or non-significant results in recent studies that have either focused on the direct link between family ownership and proxies of AC (e.g., Brinkerink, 2018) or examined more nuanced relationships that relate to limited aspects of family influence and of the AC constructs (e.g., Chirico and Salvato, 2014, who study relational and affective factors in relation to knowledge internalization at the family level). Overall, we believe that our model provides a more complete picture of the phenomenon, which should result in higher predictive power in explaining the family ownership-AC relationship. Thus, we encourage researchers to test various levels of "family ownership" and reveal thresholds for the proposed effects (contingent on firm type and geographic context). Moreover, it would be interesting to see whether mere ownership stakes or voting rights, and potential divergence thereof, affect the subsequent emotional attachment and power concentration, and ultimately AC. Additionally, it would be particularly interesting to see whether there are any "sweet spots" with regard to family ownership, for which the motivational and implementation gaps are comparably low. Moreover, it is possible that the proposed relationships turn out non-linear in reality. Empirical research on the effects of family ownership on dimensions of firm behavior and performance has oftentimes revealed inverse U-shaped relationships (Anderson and Reeb, 2004; Chirico *et al.*, 2018; Mazzola *et al.*, 2013), and similar observations might be found with regard to the relationships between emotional attachment and power concentration with AC. In particular, one could expect that, at certain moderate levels of both, the related gaps might be minimized.

With regard to quantitatively testing the proposed relationships, researchers might test moderated mediation models, preferably collecting and analyzing longitudinal data, and build on various existing constructs. For instance, relevant parts of the recently developed socio-emotional wealth scales (Debicki *et al.*, 2016) might serve to capture emotional attachment. Similarly, relevant parts of the Family Influence Familiness Scale (Frank *et al.*, 2017) may provide valuable insights to measure power concentration. With regard to AC, finally, future research can rely on established measurement scales (e.g., Ben-Oz and Greve, 2012; Jansen *et al.*, 2005). When testing the proposed relationship, besides controlling for ownership duration and generation, researchers might also pay attention to various ownership constellations. For instance, it is proposed to distinguish between lone founder firms, lone heir firms, and first and later generation firms with higher levels of family involvement in ownership and control. Finally, while our model focuses on how family owners' attributes affect firm-level AC, it would be also interesting to explore the joint effects of family owners' attributes in conjunction with different macro-level, external factors. For example, while we theorize that negative performance feedbacks are likely to moderate the effect of family ownership on AC through emotional attachment, it would be interesting to add financial crises into the equation, thereby establishing whether family-owned firms are more or less able to absorb and react to changing external conditions by modulating their level of potential and realized AC.

CONCLUSION

We have examined the paradoxical and time-varying influence of family owners on firm AC. By identifying two key dimensions, emotional attachment and power concentration, that qualify the type of family influence associated with a certain degree of family ownership, our analysis introduces the concept of motivation and implementation gaps to explain how family ownership simultaneously produces positive and negative effects on AC through different mechanisms.

Furthermore, our analysis highlights the need and possibility to master the tension engendered by family ownership, emphasizing the role of contingencies and temporal factors.

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Table 1. Summary of research on innovation in family firms and implications for absorptive capacity

Author(s)	Innovation Aspect Examined	Connection to Absorptive Capacity	Main Results/Conclusions	Implications for Absorptive Capacity in Family Firms
Research Suggesting a Positive Effect of Family Ownership on Absorptive Capacity				
Chirico and Salvato (2014)	Knowledge internalization within the family	Stock of prior knowledge (family-level)	Knowledge internalization relates positively to family social capital and affective commitment, negatively to family relational conflict; knowledge internalization increases innovativeness.	Higher overall absorptive capacity
Sirmon *et al.* (2008)	R&D investments	Stock of prior knowledge	Family influence increases R&D investment in the wake of imitability threats.	Higher overall absorptive capacity
Patel and Fiet (2011)	Identification and recombination of external knowledge	Stock of prior knowledge and ability to identify and exploit external knowledge	Family firms are more able to combine new information with their existing stock, have higher continuity of knowledge, and identify more valuable opportunities.	Higher overall absorptive capacity
Research Suggesting a Negative Effect of Family Ownership on Absorptive Capacity				
Chrisman and Patel (2012)	R&D investments	Stock of prior knowledge	Lower but more heterogeneous R&D investments in family firms; reverse relationships when performance is below aspirations.	Lower overall absorptive capacity
Gómez-Mejía *et al.* (2013)	R&D investments	Stock of prior knowledge	Lower R&D investments in family firms; weaker effect in the presence of institutional ownership, related diversification and negative performance feedbacks.	Lower overall absorptive capacity
Kotlar *et al.* (2013)	Technology acquisition	Acquisition of external knowledge	Lower technology acquisition in family firms; weaker effect when performance is below aspirations or in the presence of technology protection.	Lower potential absorptive capacity
Research Suggesting Different Effects of Family Ownership on Potential and Realized Absorptive Capacity				
Block (2012)	Level and productivity of R&D investments	Stock and efficient use of prior knowledge	Lower but more productive R&D investments in family firms.	Lower (higher) potential (realized) absorptive capacity
Duran *et al.* (2016)	Innovation inputs and innovation outputs	Stock and efficient use of prior knowledge	Lower but more productive innovation inputs in family firms.	Lower (higher) potential (realized) absorptive capacity
König *et al.* (2013)	Adoption of discontinuous technologies	Acquisition and exploitation of external knowledge	Lower adoption of discontinuous technologies in family firms, but faster implementation if adoption does occur.	Lower (higher) potential (realized) absorptive capacity
Patel and Chrisman (2014)	Exploratory and exploitative R&D investments	Stock of prior knowledge	Lower explorative and higher exploitative R&D investments in family firms; reverse relationships when performance is below aspirations.	Lower (higher) potential (realized) absorptive capacity

Table 2. Past conceptualizations and components of family owner influence along emotional attachment and power concentration

Construct/ Conceptualization	Theoretical Perspective	Definition	Factors Underlying Emotional Attachment	Factors Underlying Power Concentration
Family involvement and essence	Behavioral theory Stakeholder theory	A controlling family's ability to influence firm behavior and willingness to use its influence to pursue particularistic ends (Chrisman *et al.*, 2012; Chua *et al.*, 1999)	• Intentions for continued family control • Access to family resources • Social acceptability of the vision held by the dominant coalition in the family firm	• Family control of the dominant coalition • Ability to influence firm behavior
Familiness	Resource-based view	Bundle of assets and attributes that reside in the firm resulting from the interaction between the family and the business (Habbershon *et al.*, 2003; Pearson *et al.*, 2008)	• Family influence on the firm's organizational identity • Family's values and goals	• Isomorphic influences of the family on the firm • Social network overlaps between family and the firm
Four Cs	Not specified (inducted from evidence)	Idiosyncratic firm characteristics and preferences including continuity, command, community and connections (Miller and Le Breton-Miller, 2005)	• Pursuit of longevity • Intentions to transfer the business to the next generation	• Authority and autonomy of family owners • Number and intensity of relationships with internal and external stakeholders
Three circles model	Boundary theory Systems theory	Overlap and segmentation/integration between the family, ownership and management subsystems in the family firm (Gersick *et al.*, 1997; Sundaramurthy and Kreiner, 2008)	• Image association between family and business • Family culture • Use of family funds	• Decision making controlled by family • Family members involved in strategic decisions
Three Ps	Agency theory	Governance attributes that define the authority, motivations and accountability norms of family firms including parsimony, personalism and particularism (Carney, 2005)	• Tendency toward careful resource conservation and allocation • Family-firm identity • Family owners' particularistic goals	• Unification of ownership and management in the family • Incorporation of organizational authority in the family owner
Socio-emotional wealth	Behavioral agency model Prospect Theory	Non-financial aspects of the firm that meet the family's affective needs (Gómez-Mejía *et al.*, 2007)	• Family-firm identification • Renewal of family bonds through dynastic succession	• Ability to exercise authority • Binding social ties

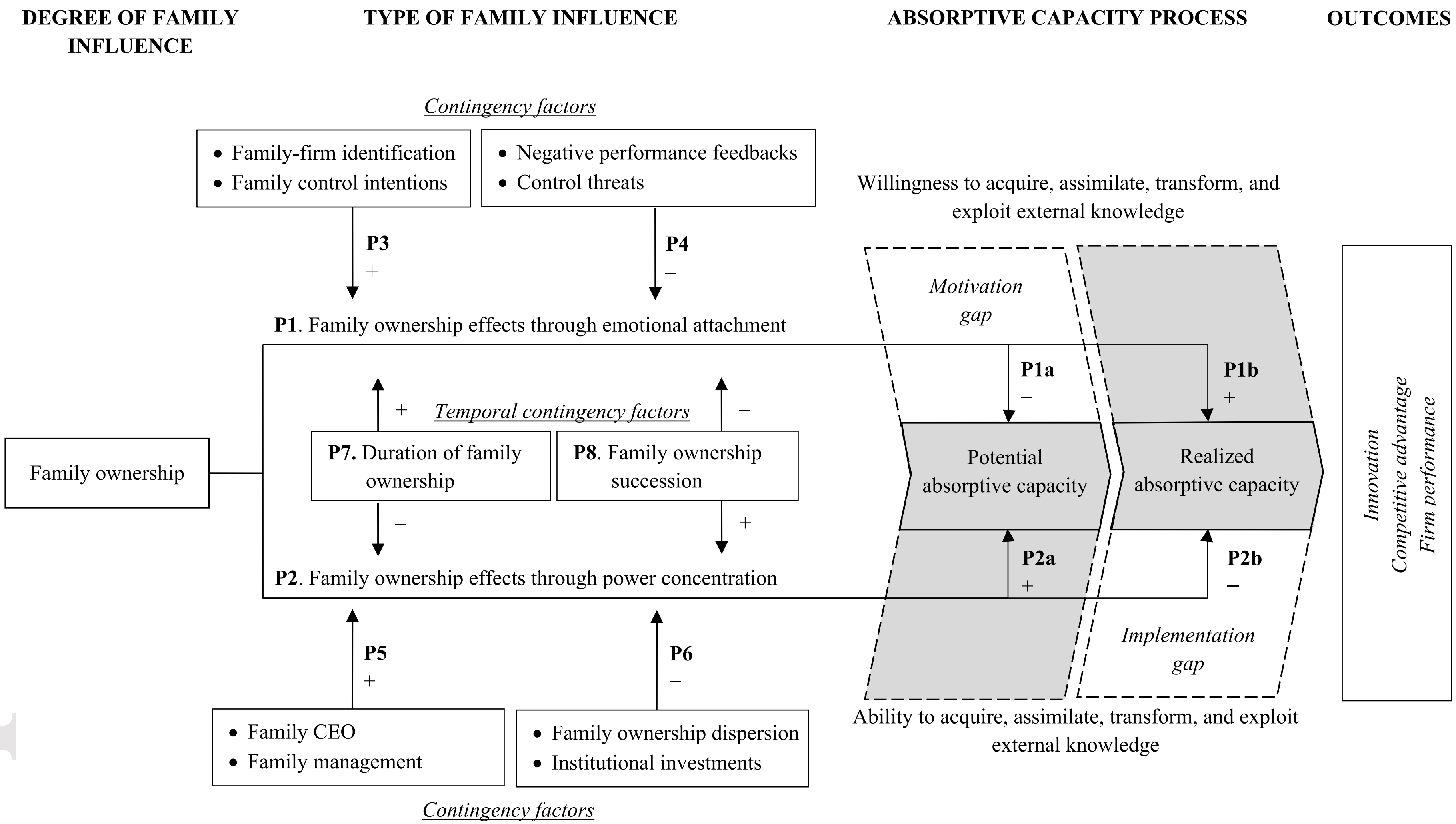

Figure 1. The paradoxical and time-varying effects of family ownership on absorptive capacity

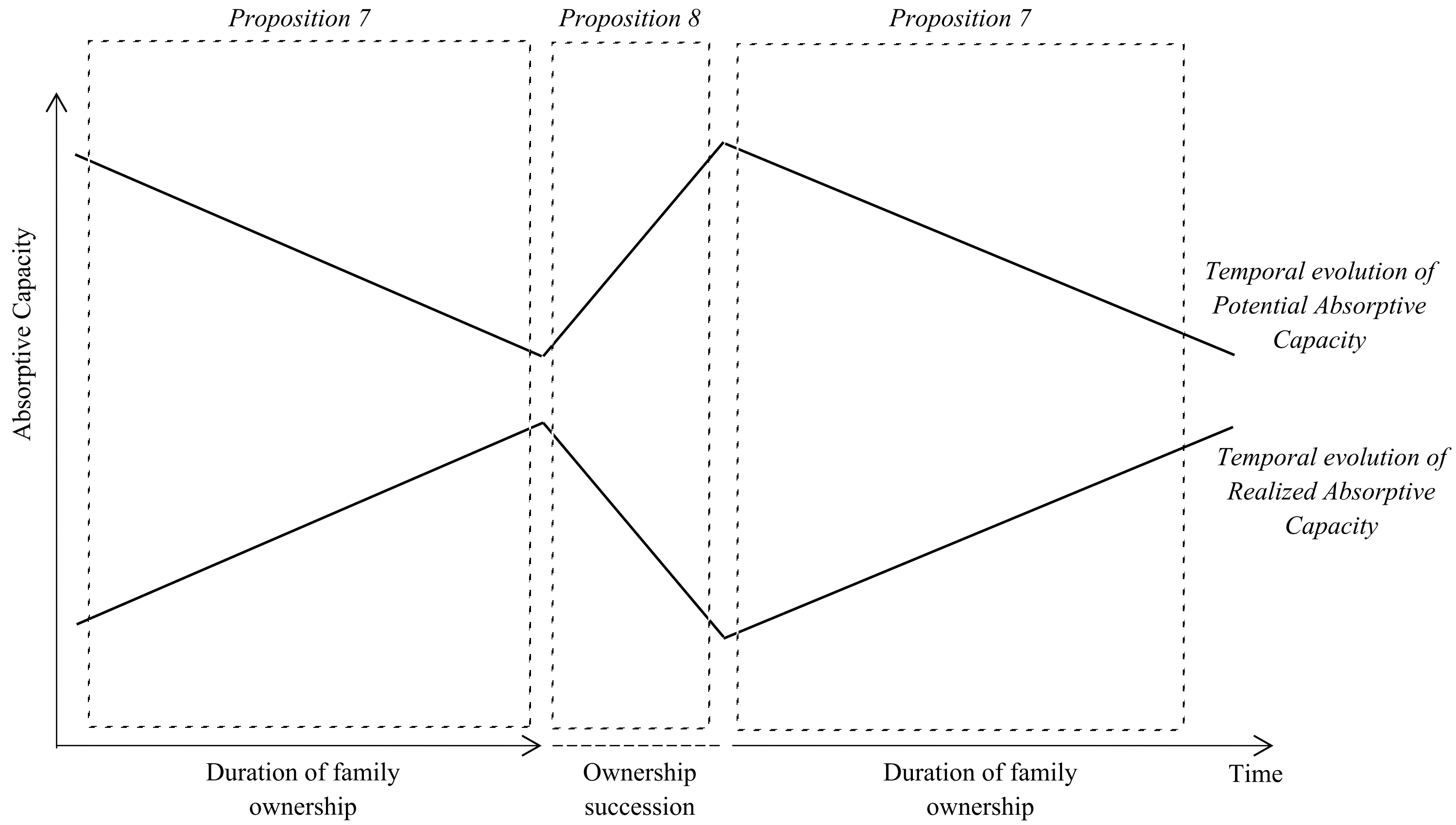

Figure 2. Temporal Evolution of Absorptive Capacity in Firms with Family Ownership