

Impact of Career Complexity on Leadership Competencies: A Longitudinal Study of Senior Executives

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ABSTRACT

In today's complex business environment managers must have the capacity to adapt to rapidly changing circumstances. This research addressed the impact of career experiences on the development of adaptability in senior managers. We measured features of the careers of 47 high-level managers in a Fortune 100 company. We examined the effect of career complexity—defined as the diversity in an individual's functional area experiences, institutional context experiences, and temporal experiences over the span of his or her career—on managers' long-term levels of adaptability. For those managers whose careers did not include an early opportunity to observe decision-making at the most senior level, there is an optimal number of role type changes (line, matrix, and staff) and time in each role type that maximized development of adaptability. For managers whose careers did include an early opportunity to observe senior-level decision-making, 82% developed a high level of adaptability that allowed them to adjust their tactics to the situation, independent of the number of role types or time in each role in their careers. Contrary to expectations, the point in a manager's career when s/he first held a role with profit and loss responsibility did not influence the development of managerial adaptability.

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In today's difficult business and financial environment, survival is not just a matter of getting through a down cycle and getting back to business as usual at the other end. Most organizations today are in what Heifetz (1994) called an adaptive crisis as distinguished from a task crisis. Businesses need leaders, from CEOs to HR executives, who can help others to develop and demonstrate adaptability in several forms, such as the ability to face adversity with courage, learn, and manage uncertainty (Dotlich, Cairo, & Rhinesmith, 2008). For this research we define adaptability as the ability to work effectively within a variety of changing situations, and with various individuals or groups.

In the same vein, Kantor, Kram, & Sala (2008) argue that, given the need for rapid change and flexibility, it will be executives who can best adapt to change who will deliver the most outstanding results. In other words, adaptability will become one of the most critical competencies of the most successful leaders. For organizations to become more adaptive, they need both leaders and members who are adaptable.

If adaptability is a key to managing complexity in the organization, it is important to understand how managers develop adaptability. We propose that the answer lies in turning the relationship between adaptability and complexity on its head: *The complexity of the individual's passage through his or her career creates adaptability.* In other words, adaptability is best learned through experience (Karaevli & Hall, 2006). And the best kind of experience for this learning is the very complexity that adaptive leaders must learn to master—in other words, handling a variety of experiences and actions.

In this paper, then, we will test the notion that particular types of variety in a manager's experience lead to the development of adaptability. We draw on a unique database containing the career histories of fifty-two senior executives in a major global corporation. We use the term career complexity to represent the degree of variety in a manager's career experiences and test the degree to which career complexity contributes to the development of adaptability later in their careers.

THE LINK BETWEEN CAREER COMPLEXITY AND ADAPTABILITY

Career complexity

We define career complexity as follows: Career complexity represents the degree of variety in an individual's functional area experiences, institutional context experiences, and temporal experiences over the span of his or her career. This definition derives from the understanding of career complexity proposed by Craig, Las Heras, Hall, Zhu, & Kram (2006). Their model of career complexity (see Figure 1) reflects the straightforward idea that career complexity can stimulate the learning of new competencies. And these competencies, in turn, lead to enhanced performance. This is a model in which competencies mediate the relationship between complexity and performance. Craig, Las Heras, Hall, Zhu, & Kram (2006) also proposed a moderating effect of competencies, in which a career history with a variety of assignments could lead directly to stronger performance if the person possessed the appropriate competencies to allow her to learn the necessary lessons from that variety.

Insert Figure 1 about here

Karaevli & Hall (2006) proposed a theoretical model showing how ‘career variety’ (equivalent to our career complexity) over the span of the person’s career might lead to greater managerial adaptability. Based upon previous work on executive socialization (Smith & White, 1987; Tyre & Von Hippel, 1997), Karaevli & Hall (2006) define career variety as “the diversity in an individual’s functional area and institutional context experiences accumulated over time” (p. 360).

Our model of career complexity expands upon these definitions by adding temporal variety, in addition to functional and institutional variety. By temporal variety we mean departures from general norms for the individual’s comparison or reference group in the timing, sequencing, or duration of career experiences. For example, in a large company, managing a whole enterprise at age 30 would be more unusual and more complex than doing so at age 50. The fifty-year old has had a greater number of experiences relevant to managing an enterprise (e.g., managing an array of relatively independent business units) that could create a learning foundation for enterprise-level accountability.

Adaptability

Adaptability has been an elusive concept to define and measure in the organizational literature. It often is described in terms of flexibility (Murphy & Jackson, 1999), adaptive performance (Pulakos, Arad, Donovan, & Plamondon, 2000), meeting adaptive challenges (Heifetz, 1994), and learning agility (Lombardo & Eichinger, 2000; London & Mone, 1999; Savickas, 2005). However, all observers agree that adaptability is a key quality that enables a person to learn and cope with novel tasks over the span of a career. Hall (2002) refers to adaptability (along with self-awareness) as a career “meta-competency,” as it is a competency

that enables the person to acquire other competencies. Hall describes the career as a series of short (e.g., 3-5 years) learning cycles or “mini-cycles” that require adapting to new situations through exploration, trial activity, and mastery. (There can also be much longer cycles of career or life stages, as described in the work of Super (1957) or Levinson (1978)). Savickas (2005) describes career adaptability through these cycles as successfully adjusting to developmental tasks, job transitions, and complex and unfamiliar problems (Savickas, 2005).

There are several components or facets of adaptability. One is *behavioral*, which gets at the person’s capacity to respond effectively to novel situations. Pulakos et al. (2000) have developed a taxonomy of new behaviors (e.g., handling emergencies, demonstrating interpersonal and cultural adaptability, managing work stress) and a Job Adaptability Inventory that measures adaptive performance. Kantor, Kram, & Sala (2008) argue that one of two critical elements of adaptability is acting with *courage*, e.g., behaving constantly with their espoused values even when doing so is unpopular (Kantor et al., 2008).

There is also a *cognitive* aspect of adaptability. This includes the two types of cognitive learning from career experience that Hall (1986; 2002) has identified: task-related learning and personal learning (learning about the self or one’s identity.) An important aspect of task learning is the ability to generalize and transfer previous learning to subsequent tasks. The most powerful learning is “meta-learning,” or learning how to learn. This meta-learning is greatly facilitated by the second aspect of cognitive adaptability: personal learning. If the person is able to reflect upon herself and modify her self-perceptions based upon learning from a complex and novel task situation, her identity has grown in the adaptive process. This is where the second career meta-competency identified by Hall (2002) comes in: self-awareness. The more self-aware the person is, the more open she is to experiencing personal learning in an adaptive episode. This cognitive

aspect of adaptability is what Kantor, Kram, & Sala (2008) call *curiosity*. Curious leaders adapt to change through asking questions, asking for personal feedback, looking for root causes, a passion for new experiences, and a continuous desire to learn.

For the purposes of this research we define adaptability as the ability to work effectively within a variety of changing situations and with various individuals or groups. Adaptability entails understanding and appreciating different and opposing perspectives on an issue, adapting one's approach as the requirements of a situation change, and changing or easily accepting changes in one's own organization or job requirements.

A Model of Career Complexity, Adaptability, and Performance

The model in Figure 1 suggests there are two paths between career complexity and performance. One path has adaptability playing a mediating role such that increased career complexity will lead to greater adaptability, which is consistent with Karaevli & Hall's (2006) proposition that, "Career variety is associated positively with a manager's adaptive performance" (p. 365). Increased adaptability, in turn, leads to greater performance.

The second path shows a direct relationship between career complexity and performance, which represents other mechanisms by which career complexity affects performance, e.g., by building networks. Adaptability moderates this relationship as people with higher levels of adaptability will be best able to learn from career complexity, thus resulting in higher performance.

In this study we empirically assess the path between career complexity and the development of adaptability. In particular, we operationalize career complexity as various kinds of boundary crossings and test their impact on adaptability. Boundary crossings refer to changes

in functional area (e.g., from marketing to finance) and/or levels of responsibility (e.g., from low-level management of operations to more strategic management roles). Boundary crossings are thus measurable aspects of career complexity that may influence adaptability (Karaevli et al., 2006; McCall, 1998).

Career complexity is likely to have positive effects on adaptability for the following reasons. Research on adult development emphasizes the importance of facing adversity, experiencing the new or unknown, and struggling with the unfamiliar. Moving into a new job, for example, presents such an experience. In contrast, repeated exposure to similar tasks reduces the opportunity for learning and has been shown to contribute to relatively narrow capabilities in managers (McCall Jr, 2004).

At the same time, however, there may well be levels of complexity that are too great to allow individuals to integrate lessons from their experiences. For example, the temporal aspect of career complexity can mitigate the positive effects of variation in jobs (Karaevli et al., 2006). When the pace of changes in roles does not permit a period between changes in job assignments that is long enough for the individual to acquire and practice the knowledge, competencies, and perspectives associated with the role, boundary crossings will not contribute to adaptability. At the same time, assignment transitions must be frequent enough to require the individual to learn how to change—the essence of adaptability (Karaevli et al., 2006, p. 368). The average amount of time individuals spend in each role type is therefore expected to influence the development of adaptability. Gabarro's (1987) research on new managers taking charge suggests that too many role type changes in too short a period of time may be less than optimal. Our above arguments also suggest that too few could be problematic as well. Thus, a nonlinear (i.e., inverse U-shaped)

relationship between the number of role types and adaptability is likely. In this research we focus on role-type boundary crossings; thus the following research question:

RQ1: What is the relationship (linear and quadratic) between the frequency of a person's role-type boundary-crossing job changes and his or her level of adaptability?

Timing of Key Experiences and Developmental Readiness for Change

Timing of experience also matters. For example, using a sample of college graduates hired into a management training role, Berlew & Hall (1966) found that there is a critical period for learning in the first year or so of a manager's career. In this early stage an individual is most open to learning and is looking for role models and standards of good performance. In Kantor, Kram, & Salas's (2008) terms, this would presumably be a period when the person might be highly curious about how to succeed. Indeed, Karaevli & Hall (2006) argued that: "Managers who have a greater number of career transitions in their early career have a greater adaptability than those who experience transitions in their mid- or late-career stages" (Karaevli et al., 2006, p. 368). In particular, the first profit and loss (P&L) job experienced by an manager has been identified as a critical transition in executive development (McCall, Lombardo, & Morrison, 1988). The P&L job requires a certain level of skill, e.g., the ability to motivate, persuade, think strategically, etc., and at the same time the first P&L is an important developmental experience for a manager. Thus, the first P&L must be timed such that the manager has the necessary competency to do the job but not so late in his or her career that the opportunity for learning is diminished. Accordingly, we raise the following research question:

RQ2: How does the timing of the first profit and loss position affect the development of adaptability in managers?

Development of a Broad and Complex Perspective of Organizations.

Finally, there are potentially key roles that contribute to the development of a manager's adaptability. Career complexity increases the cognitive demand to create an organization-wide framework within which to integrate information from an array of sources. Developing that framework oneself, as one experiences different parts of the organization, is slow and limits how much sense an individual can make of each experience. By contrast, early experiences with models who already have and use such a framework in their decision making enables managers' sensemaking of increasingly disparate information. Thus, early models of senior-level decision making contributes to the development of adaptability. Managers whose career paths include roles that provide early access to top management exposes them to the workings of the upper echelons of the organization. This experience provides the manager a more cognitively complex understanding of a managerial role, which contributes to an increased repertoire of behaviors (Day & Lance, 2004). Finally, managers with early access to top management are more likely to form relationships with executives who can help them develop skills, and may also serve as role models or mentors. This logic leads to the following research question:

RQ3: What is the impact of early access to top management on the development of adaptability?

METHOD**Sample**

We began with the career histories of 52 high-level managers in a Fortune 100 company. These high-level managers reported to the most senior layer of management. (In other words, they were only two to three levels away from the CEO.) Each manager had responsibility for

both sales and overall profitability for a business unit of approximately \$1B annually in sales. Thus, each of these managers had responsibility for an operation equivalent to many mid-sized independent companies. The sample included all managers holding similar positions within this company. Thus, we were able to hold constant the current (at the time of data collection) role while still ensuring that we had a sufficiently large sample to test hypotheses. Because we are interested in the effect of career complexity on adaptability, we eliminated five cases in which adequate data on early career moves was not available as these managers spent their early career at other companies; this left a sample of 47 managers. Gender was not indicated in the career history data; however, based on an assessment of names we judged that there were approximately 10 females. The tenure of these managers within the organization ranged from approximately 10 years to 42 years, and the average was approximately 26.5 years (s.d. = 6.8 years).

Measures

Career history. For each participant in this study we were provided with a career history that contained a list of jobs previously held, with titles, dates, and the manager of the participant identified for each. A small team that included one expert in job classification and two experienced Human Resources experts from the company (who understood the nature of jobs in the organization and historic changes in job titles) classified each job in each manager's career history. Jobs were classified according to the matrix presented in Table 1. This matrix consists of job types (line, matrix, or staff) along one dimension and organizational level on the other. The specific definitions of each role and organizational level were based on standard job classification techniques originally developed by organizational psychologist Hay (1958; Hay & Purves, 1951, 1954).

Insert Table 1 about here

Boundary Crossing Job Moves

Not every change in job title involves a substantive change in tasks, responsibilities or relationships that would be likely to affect the person's development of adaptability. We defined 'boundary-crossing' job changes as those that involved significant change either in the type of role (e.g., from staff to line) or organizational level (e.g., from front-line manager to middle management). Essentially, boundary-crossing job moves are those in which a person moves from one cell in the matrix in Table 1 to another cell in that matrix.

Identifying manager roles. The classification of jobs in the career histories was done in multiple phases by three researchers trained in the job classification methodology who could maintain a minimum of 75% inter-rater reliability, working with the two HR executives from the organization. In total there were over 1000 positions that had to be classified. This classification was done in multiple meetings between the researchers and the HR executives. At the meetings, the researchers interviewed the HR executives to understand the nature of the work for the various job titles. The researchers then independently classified the roles that became clear from the discussion. At a subsequent meeting the interpretation of the jobs would be spot checked with the HR executives and jobs that could not be confidently classified were discussed until they were classifiable. This process was repeated until all jobs in the job histories were classified.

Boundary-crossing changes in role type. Role type refers to the degree of accountability that the person has for profitability, i.e., whether it is a line, matrix, or staff role (changes in

column in Table 1). Line jobs are management roles where managers are held directly accountable for bottom-line results and have decision-making authority over the human and capital resources that directly impact financial results. Line roles are ones in which incumbents can act directly to reduce or increase production, invest in more efficient means of production, raise or lower prices, etc. It is important to note that not all Line roles are full ‘profit-and-loss’ positions because, in many line roles, the person can only influence a few aspects of either profit or loss, *not both together*. In contrast, staff (or ‘advisory’) roles have only an indirect impact on bottom-line results. The main accountabilities of managers in staff roles are to provide advice, counsel, and execution of functions that support line responsibilities e.g., HR, legal, and in some cases IT. In these “advisory” or “staff” roles the manager rarely, if ever, has the opportunity to have a direct impact on profitability. In-between are the increasingly prevalent “matrix” or “collaborative” roles (e.g., Ford & Randolph, 1992), where the executive is held accountable for financial results, usually jointly with other managers, but does not directly control many (or in some cases, any) of the necessary resources to accomplish those results. These roles require coordination with other executives to accomplish the shared accountability.

Career complexity. We examined independently four distinct elements of career complexity: (1) The number of times that a person crossed boundaries between one role type and another before reaching the MD role; (2) Total number of jobs held before the current job. (These could include non-boundary-crossing moves between different positions of the same role type and organizational level); (3) Speed of change, i.e., the average number of months between boundary-crossing changes in role type; (4) Duration of job tenure, i.e. the average number of months spent in any particular job.

Timing. We considered (1) the number of years before a person's first profit and loss (P&L) position (in this organization this is typically a line role at a certain organizational level, the most common titles being "Branch Manager" or "Product Manager"), (2) the number of jobs before the first P&L job, and (3) the ratio of the time of the first P&L role to the manager's total tenure at the company.

Access to senior management decision-making. Each manager in the study either had been placed in a support role to a member of the top team early in the individual's career—or not. This aspect of their career history was recorded and coded as a binary variable.

Adaptability. Each subject participated in a Behavioral Event Interview (BEI) (McClelland, 1998), which was used to measure adaptability. The BEI is a specific form of the critical incident interview technique (Flanagan, 1954), which has been shown to be a reliable and valid method for obtaining accurate descriptions of work behavior (Motowidlo et al., 1992; Ronan & Latham, 1974). The BEI involves asking interviewees to describe (1) incidents or events on the job in which they felt effective in the job and (2) those in which they felt ineffective in the job.

The interviewers are blind to the performance level of the interviewees (i.e., in this study, their nomination as top performers in their organizations.) The role of the interviewer is to obtain detailed descriptions of events while remaining as unobtrusive as possible in order to avoid leading the interviewees. Interview questions are limited to the following: "What led up to the event?" "Who did and said what to whom?" "What happened next?" "What were you thinking or feeling at that moment?" and "What was the outcome?" Because the interviewer probes for thought processes that occurred while interviewees were engaging in specific

behaviors, the BEI uncovers information about cognitive competencies that may not be directly observable.

Interviewers who collected the data first completed an intensive three-day interview training program, and submitted a completed interview for evaluation before being allowed to conduct interviews. BEIs lasted 3-4 hours on average, and three events were discussed in each interview, thereby providing a range of contexts for assessing the individual's skills and many instances of codeable behavior. Despite the retrospective nature of interviewee accounts of events, both the validity and the reliability levels of data from these interviews have been shown to be strong (Motowidlo et al., 1992; Ronan et al., 1974). BEIs provide valid and reliable data because described events all have occurred within the past year, and a very high level of descriptive detail is demanded by the interview protocol (McClelland, 1998; Spencer & Spencer, 1993).

The BEI provides a conservative measure of specific competencies demonstrated by the interviewee because only those behaviors and thoughts that are explicitly described as having occurred during the particular events are defined as codeable data; behaviors and thoughts that are not described fully and explicitly (i.e., they are described in general or vague terms or are mentioned for past events), are not coded by interview coders (McClelland, 1998).

Managers' interviews in this study were transcribed and coded using codes based on a set of generic leadership competencies developed from a meta-analysis of more than twenty years of research, conducted with managers in 200 different job categories (McClelland, 1998; Spencer et al., 1993). Each competency was defined using specific behaviors and thoughts, and these are ordered by levels of complexity or scope (see Spencer et al., 1993).

The coders of transcripts followed specific rules. Coders were taught to code only behavior that is clearly described as (1) having been explicitly done (said, thought or felt) by the interviewee (i.e., they may not code a statement that uses the term “we” did something or where the action itself is general: “I influenced him.”); (2) as having taken place in the course of this specific recent event (i.e., nothing that the person plans to do or “usually does” or thinks they should do or might do or did in previous cases); and (3) with adequate detail as to how it was accomplished (i.e., “I presented a business case to Joe. I showed him the costs and benefits of purchasing the new machine;” rather than “I convinced Joe to buy the machine.”).

In addition to identifying codeable statements, coders also identified the specific competency and level being demonstrated. Codebooks for each competency include behavioral descriptions and examples of each level of each competency and additional coding rules as required to maintain inter-rater reliability. Coders were rigorously trained and accredited to maintain at least 75% inter-rater reliability in identifying the set of competencies used by the interviewee in the incidents discussed.

For each participant in this study, individual competencies were recorded by highest level shown. If a competency was not coded in the transcript of a manager’s interview, it was assigned a level zero. It is important to note that all executives had a fair opportunity to display any and all of the competencies in the model during their three to four hour interview.

The definition of adaptability used by the coders was: “The ability to adapt to and work effectively within a variety of situations, and with various individuals or groups. Adaptability entails understanding and appreciating different and opposing perspectives on an issue, adapting one’s approach as the requirements of a situation change, and changing or easily accepting

changes in one's own organization or job requirements." Adaptability was coded for four levels; the definitions of each level are shown in Table 2.

Insert Table 2 about here

RESULTS

To explore our research question #1 concerning the relationship (linear and quadratic) between the frequency of a person's boundary-crossing job changes and their adaptability we used the following four independent variables to represent aspects of career complexity and examined each independently in separate ANCOVA analyses: 1) the number of boundary-crossing changes from one role type (line, matrix, staff) to another; 2) the total number of roles, whether or not there was a change in role type; 3) the average number of years before transitioning to another role type; and 4) the average number of years in a role, regardless of role type.

To explore research question #2 concerning the relation of temporal aspects of career complexity and adaptability we examine the timing of the first profit and loss position. We specifically look at the following independent variables in separate ANCOVA analyses: (1) the number of roles held before the first profit and loss job; (2) the number of jobs held before the first profit and loss job; and (3) the ratio of the time of the first profit and loss to the manager's tenure at the company.

To explore research question #3 concerning the effect of early access to top management, for each of the above ANCOVA analyses we looked for an interaction effect with whether or not the person had held an early role with access to top management.

Adaptability scores of level 0 indicate that the competency was not displayed by the manager in the BEI. There are two possible reasons that a competency may not be displayed. First, the person does not possess the particular competency at all (an unlikely but possible event in managers). Second, and more common, the person did not tell an event in which the competency was relevant. As a result, we concluded that adaptability scores of level 0 are uninterpretable. As a consequence we excluded managers coded level 0 in adaptability from the analyses. This left 30 managers in the analysis.

Career Complexity

Number of role types. Table 3 shows the results of the analysis examining the interaction of whether or not the manager had early access to top management (executive assistant role) with the number of role type changes and Figure 2 graphs the relationship. In this analysis and all others a close examination of the data points for those participants who have had an executive assistant role shows that 9 of 11 cases (82%) exhibit adaptability at level 3; one is at level 2 and one is at level 4. Thus, it appears that a career path that includes early access to top management is likely to lead to development of adaptability at a high level, i.e., the ability to adapt one's tactics to the situation. Figure 2 shows that for those managers whose career path did not include the executive assistant role, the greater the number of changes in role types, the lower was the level of adaptability that the manager developed. This model has an adjusted r^2 of .326 and the linear regression for just those managers not experiencing the assistant role has an r^2 of .455 as shown in Figure 2.

 Insert Table 3 and Figure 2 about here

Table 4 shows the results of a quadratic regression of adaptability on the number of role types experienced in the manager's career. For those managers whose careers included early access to top management, there are no significant relationships. This is due to the fact that almost all these managers have developed adaptability at or near level 3 (adapting tactics). For those managers who did not experience an executive assistant role, Table 4 shows that there is both a significant linear and quadratic component to the relationship between adaptability and the number of role types. The quadratic relationship is shown in Figure 3. The r^2 of the quadratic regression line for those managers not experiencing the executive assistant role is .563 and the optimal number of role-type changes appears to be approximately 3.

 Insert Table 4 and Figure 3 about here

Average time per role type. The average time per role type was calculated as the total tenure with the organization divided by (1+ the total number of role changes). Table 5 shows the results of this analysis and the graph of the results is shown in Figure 4. The results are similar to those of the number of role types except that they are a bit weaker, i.e., the r^2 is smaller. For those managers not experiencing the executive assistant role, the greater the average number of months before changing role types, the higher was the level of adaptability developed.

 Insert Table 5 and Figure 4 about here

We also examined the quadratic relationship as we did for the number of role types. The results are shown in Table 6 and Figure 5. Similar to the number of role types, the average

months per role type shows a strong quadratic relationship. It appears to be optimal to have approximately 100 months total experience (possibly including several jobs of increasing responsibility) in a given role type (line, staff, or matrix), before a boundary-crossing move to a different role type.

 Insert Table 6 and Figure 5 about here

Number of roles and average time per role. The direction of relationships for number of roles was similar to those for changes in role types; however, none was statistically significant. This finding implies that the complexity of changing role types has a greater effect than that of simply changing roles within the same job type.

Timing

We tested for relationships between adaptability and our three timing variables with respect to P&L. None of these variables showed any significant relationship with Adaptability.

DISCUSSION

This study contributes to our understanding of the relation between the complexity in a career and the development of adaptability. Specifically, we investigated the effect of career complexity, measured as variety in role types as well as the tenure in the different role types, on the development of adaptability. In the sample we differentiated among those who had had a role providing early access to a senior executive and those who had not; this role proved to be a crucial determinant of adaptability. Moreover, it was a critical variable that influenced the effects of the number of role-type changes on the development of the adaptability competency.

For those managers who had early access to senior management, the number of role-type changes did not have an impact on their level of adaptability. Indeed, for individuals with early access to senior-level decision making, their adaptability tended to be quite high across the board, on average falling at level 3 (ability to adapt tactics) or better. However, for those who had not had early access to senior management, there is both a linear and a quadratic relationship between the number of role-type boundary crossings, and the tenure in those roles, and the manager's adaptability. This pattern implies that there may be an optimal number of role-type boundary crossings in a managerial career, as well as an optimal duration of experience in each role type. Too few boundary crossings from one role to another or too much time in a given role type may inhibit learning and adaptability because there is not enough career complexity to demand additional learning. On the other hand, too many boundary crossings from one role type to another or too little time in each role type may inhibit learning and adaptability because there is too much career complexity to assimilate lessons into one's behavioral repertoire.

Early Access to Senior Management

A role that provides early access to senior management (executive assistant) proves to be an important moderator of the relation between career complexity and the development of adaptability. Those managers who did not have an assignment as executive assistant display higher variability in levels of adaptability than those who did. Those managers whose career path included an executive assistant role almost exclusively (82%) develop adaptability at the high level of 3 (adapts tactics). There are several plausible accounts for these findings. First, the executive assistant in this organization works intimately with a member of the senior leadership team of the organization. Although the role is not a formal mentorship, it does provide the opportunity to learn about high-level leadership from watching the executive in action. An

assistant could use the executive as a resource to help make sense of changing situations in his or her own responsibilities. By observing the executive, the assistant can learn to develop the ability to better “read” a situation and identify the reasons for changes in tactics used by the executive. In so doing, the manager has an opportunity to see a senior executive exercise his or her own adaptability, and to benefit from coaching and counseling that is available from that executive. It is also likely that in such a role, the developing manager has more frequent and ready access to other senior executives who s/he can enlist in to her developmental networks to enhance ongoing learning and development (Higgins & Kram, 2001).

Further, individuals who work as executive assistants learn about the organization in a way that puts any individual item of knowledge into a context in which it is profoundly connected to the conditions in which it is learned (Brown & Duguid, 1991). Thus, they are likely to learn in a direct way the real connection between decisions and results. Knowledge of results may enhance their willingness to adapt in their own managerial choices when a course of action is not leading to expected outcomes. In the assistant role, the manager is also exposed early to other managers’ concerns, needs and restrictions. This breadth of perspective can serve in the future to enhance openness to information about those needs or restrictions in other departments.

Finally, an executive assistant supports an executive officer, witnessing and contributing to his decision making in crucial matters that affect the direction of the organization, but without sharing in the burden of the responsibility and risk that such decisions imply. By not sharing in that responsibility, an executive assistant has a certain level of psychological safety, which can add to psychological engagement (Kahn, 1990) while letting the person escape the biases that hinder learning, especially in the aftermath of both failures and successes. The relative safety of

the role may facilitate learning from both successes and failures, thus helping the manager build cognitive complexity and become more adaptable (Day et al., 2004).

Number of Role Type Changes

The second most salient result of this research is that having a higher number of role-type changes does not compensate for not having a position as executive assistant. This is a crucial finding. An excessive number role types, or a short tenure in each role type, may be detrimental to developing high levels of adaptability. This pattern might be due to the fact that a high number of positions generally means shorter tenure in each position. Although managers might depart from the problem-solving approaches, operational tactics, and strategies that their predecessors had established, their short tenures might prevent them from experiencing the need for adapting, re-evaluating and changing their own approaches and strategies. Moreover, short time in each position might hamper experiencing the consequences of their own decisions, with their positive and negative effects. As a result, they might develop a tendency to think that their decisions are correct no matter the actual results, thus exacerbating their overconfidence and biasing their judgments. Such a situation is likely to hinder, rather than promote, adaptability (Bunker, Kram, & Ting, 2002).

Timing in Role Types

The third key finding is that for those who have not been executive assistants there is an optimum time in each of the role types. The quadratic relationship between length of the assignment and adaptability shows that the optimum time is around 8 years (100 months). This finding can be broken down into two observations. On the one hand, people need a minimum

time in each role type. On the other hand, too much time in the same role type might not be conducive to adaptability.

The need for a minimum time in each role type might be related to the fact that it takes time for people to learn from their experiences and develop the complex understanding needed to develop adaptability. Human development involves an ability to hold one's own perspective as objects to be examined, rather than as objective and undeniable truths (Kegan, 1982). Thus, a person at a high developmental level is able to examine his own assumptions, beliefs, and decisions and to change them when he finds them to be flawed or discovers other more potentially beneficial ones. The development of complex understanding is likely to lead to adaptability (Day et al., 2004). According to Kegan (1994), for people to develop such complex understanding they need challenge coupled with support. To be able to develop relationships that lead to support, people need to spend a minimum time in any position to create a developmental network (Higgins et al., 2001) that serves as a support for a career as well as for personal development. At the same time, challenge also calls for a minimum time in a specific role type, so that circumstances might unfold, problems get complex, and circumstances change. This is what Hurley (2002) expresses when he says that to learn people need to primarily be encouraged to tackle challenges, experiment with different courses of action, fail and correct failures, and reflect on their experiences. And those elements take time.

On the other hand, being in the same position for too long a time might also inhibit adaptability. People need challenge and support to develop a complex understanding and to make appropriate links between decisions and consequences. Being in the same role type for too long might result in a lack of challenge, variety and novelty. Once that happens, an individual is likely

to no longer further develop his complex understanding but rather to apply previous knowledge and heuristics.

Timing

We chose to examine timing relationships by examining various measures of timing related to the first profit and loss (P&L) position. Although we were unable to find significant relationships between timing of the first P&L position and the development of adaptability, this does not imply that timing is not important; for example, the executive support role invariably happened early in these manager's careers. It is plausible that executive assistant experience or other kinds of key roles are less helpful later in individuals' careers than they are early in their experience, because of the role they play in helping the individual to organize subsequently-gained knowledge.

Limitations

One of the unique strengths of our data was the thoroughness of the information we were able to gather on the whole careers of the managers we assessed. However, there were limitations to our data as well. First, we had access to measure these managers' competencies only at one point in time rather than test at multiple points the impact of particular experiences on their developmental trajectory. Although it seems unlikely, the finding that managers who had early access to senior management typically develop adaptability at level 3 (adapts tactics) is subject to the alternate interpretation that managers who demonstrate adaptability at level 3 at an unusually young age are selected for a role with access to top management. Nevertheless, even if that were the case, the findings for the managers who had not experienced the executive assistant role would still hold.

The fact that data were collected in only one organization is both an advantage and disadvantage. On one hand, we did not have to control organization-level variables such as industry, company performance, organizational culture, etc. as potential confounds to our results. Our sample was homogenous with respect to the manager's current role; thus, to the extent that the role represents a common point in a career, the managers were all at the same place in their career, i.e., they were in the same cell of Table 1. On the other hand, the results may not generalize across organizations. Managers who spend most of their careers within one company are relatively rare in modern days. It may be that the role of career complexity in the development of adaptability is influenced by organizational contexts that we were unable to study.

We found that there is an optimal number of role types and tenure in the roles that contribute to the development of adaptability. We were unable to determine the specific mechanisms by which the optimal conditions develop adaptability. However, learning the specific mechanisms involved in developing adaptability would help us understand how to promote adaptability, a characteristic that will become more and more important now that the retirement of baby boomers is predicted to leave a gap in senior leadership competencies (Wolff, Wageman, & Fontaine, forthcoming).

As a starting point, this study used straightforward measures of career complexity. It would be helpful to examine more complex methods for examining careers, e.g., sequence analysis or optimal matching techniques (Abbott & Tsay, 2000) since such methods could illuminate categories of career paths that lead to the development of adaptability. Such an understanding would allow for a more sophisticated approach to career development of senior managers.

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TABLE 1
Classification of Jobs

Increasingly Organizational Level



		ROLE PROFILE			
		Staff Roles	Matrix Roles	Line Roles	
ORGANIZATIONAL LEVEL	Strategic	Enterprise Leadership	NA	NA	Leads all aspects of business to generate results. Typically the highest level leadership role in a diverse enterprise with multiple business units, lines, and markets.
		Strategy Formation	Focuses on the alignment and integration of strategies for a function that is a critical driver of business success. Partners in determining business strategy and provides strategic advice that supports the achievement of critical business objectives.	Develops and delivers strategically important programs critical to the organization's mission through coordination and direction of diverse resources over whom direct control is not exercised.	Focused on the achievement of bottom-line results where global and / or business-critical objectives must be achieved. Typically more complex general manager or sales roles.
		Strategic Alignment	Focuses on the alignment and integration of policy in a strategically important and diverse area. Provides advice and guidance that support the achievement of major business objectives. Seen as thought leader internally.	Defines and delivers specific and measurable long-term programs and results through a complex network of resources and partners over whom direct control is not exercised.	Focuses on the achievement of bottom-line results where product and market developments demand significant change to current business capabilities. Typically general manager or sales roles.
	Tactical	Strategic Implementation	Focuses on the translation and application of policy in diverse although usually related areas.	Delivers specific, measurable results across a broad, complex area through a network of diverse resources and partners over whom direct control is not exercised.	Integrates and balances operational or sales resources to extend current business capabilities, ensuring that market demands are met in the short and medium term. Manages a large, complex operating unit to predetermined requirements.
		Tactical Implementation	Focuses on the translation and application of policy in a specific functional area.	Delivers specific, measurable results in a discrete, defined area through a network of internal and external resources and partners over whom direct control is not exercised.	Manages defined resources to ensure achievement of clearly specified objectives such as volume, cost, quality, and service to meet schedule and customer requirements.

TABLE 2
Definition of Adaptability Levels

Level	Definition	Dictionary Example
0	Not Shown. This competency is not shown.	
1	Accepts Need for Adaptability. Demonstrates willingness to change ideas or perceptions based on new information or contrary evidence. Understands other people's points of view.	So there was a bit of anger from my side, but at the same time of course I recognized the shortcomings in our program that we'd tackled with them, that we really were restricted, that I couldn't forget. I tried to put myself in their shoes. I would have done the same thing.
2	Applies Rules Flexibly. Alters normal procedures to fit a specific situation to get a job done and/or meet company goals.	I mean I was approached the day before. And I knew that I couldn't just start an entirely new lesson. So I pulled the non-standard measurement from the curriculum and basically just went with it when I saw her walk in the door. Because she had scheduled a time to come when I was starting a fresh class.
3	Adapts Tactics. Decides how to do something based on the situation. While maintaining the same overall plan or strategy, changes how to accomplish the plan. Acts to fit the situation or the person.	It was an absolute letdown on my part from "I'm here to sell something". And I realized that that business was basically gone from a training perspective. So I sort of put down all of my, all of the materials that I'd brought with me. I think I even put down the pencil and paper, as I recall, on the side of the chair, on the chair next to me. And I said, "Gee, I'm sorry that you've had this experience. But since I'm here, can you just tell me what's going on at your company?"...There's no sale here. There's no sale here. But I came all this way; I drove an hour and an half. So I'm going to at least make a contact. I'm at least going to build some sort of a relationship. But there was no -- at that point sales was way out of my mind.
4	Adapts Own Strategy. Changes the overall plan, goal, or project (i.e., what you're trying to accomplish) to fit the situation. Makes small or temporary organizational changes to meet the needs of a specific situation.	But the Wilmington people will not relocate because they do not want to. So what I have agreed to do is -- recognizing that we have got a very difficult year next year in 1997 and that if I force the issue of making them relocate, I will lose probably two thirds of them and those that I retain I am not going to have their undivided attention because it's going to be very disruptive to their personal lives plus they really do not want to move so I am not going to be getting the best of them. What I have agreed to do is -- we will allow the Wilmington based businesses to remain in Wilmington throughout 1997 but as normal attrition occurs, we will replace those people with Memphis based replacements and we have told them that by the end of the first quarter of 1998 all operations will be located in Memphis.

Note: Coders are trained to maintain a minimum of 75% inter-rater reliability.

TABLE 3
Number of Role Type Changes

Dependent Variable: Adaptability

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	5.211(a)	2	2.606	8.005	.002
Intercept	100.617	1	100.617	309.112	.000
Assistant Role * Number of Role Type Changes	5.211	2	2.606	8.005	.002
Error	8.789	27	.326		
Total	284.000	30			
Corrected Total	14.000	29			

(a) R Squared = .372 (Adjusted R Squared = .326)

TABLE 4
Quadratic Regression of Adaptability on Number of Role Types

Dependent Variable: Adaptability

Assistant Role	Equation	Model Summary					Parameter Estimates		
		R Square	F	df1	df2	Sig.	Constant	b1	b2
No	Linear	.455	14.204	1	17	.002	3.736	-.218	
	Quadratic	.563	10.317	2	16	.001	3.210	.154	-.042
Yes	Linear	.011	.100	1	9	.759	3.149	-.022	
	Quadratic	.063	.271	2	8	.769	4.617	-.466	.031

The independent variable is Number of role type changes.

TABLE 5**Average Months in Role Type**

Dependent Variable: Adaptability

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	3.214(a)	2	1.607	4.024	.030
Intercept	11.712	1	11.712	29.319	.000
Assistant Role * Average Months in Role Type	3.214	2	1.607	4.024	.030
Error	10.786	27	.399		
Total	284.000	30			
Corrected Total	14.000	29			

(a) R Squared = .230 (Adjusted R Squared = .173)

TABLE 6

Quadratic regression of Adaptability on Average Number of Months per Role Type

Dependent Variable: Adaptability

		Model Summary					Parameter Estimates		
Assistant Role	Equation	R Square	F	df1	df2	Sig.	Constant	b1	b2
No	Linear	.328	8.296	1	17	.010	1.792	.015	
	Quadratic	.497	7.910	2	16	.004	-.569	.079	.000
Yes	Linear	.004	.037	1	9	.852	3.125	-.003	
	Quadratic	.034	.139	2	8	.872	1.692	.059	-.001

The independent variable is Average months in role type.

FIGURE 1

A Model Linking Career Complexity to Career Outcomes

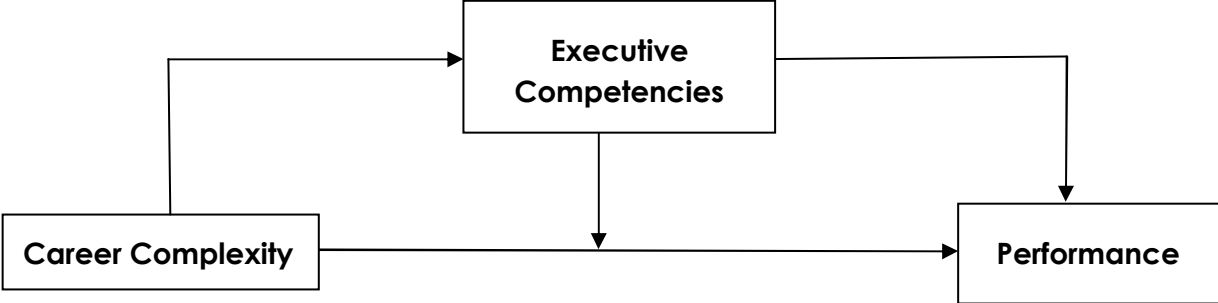


FIGURE 2

Adaptability vs. Number of Role Type Changes

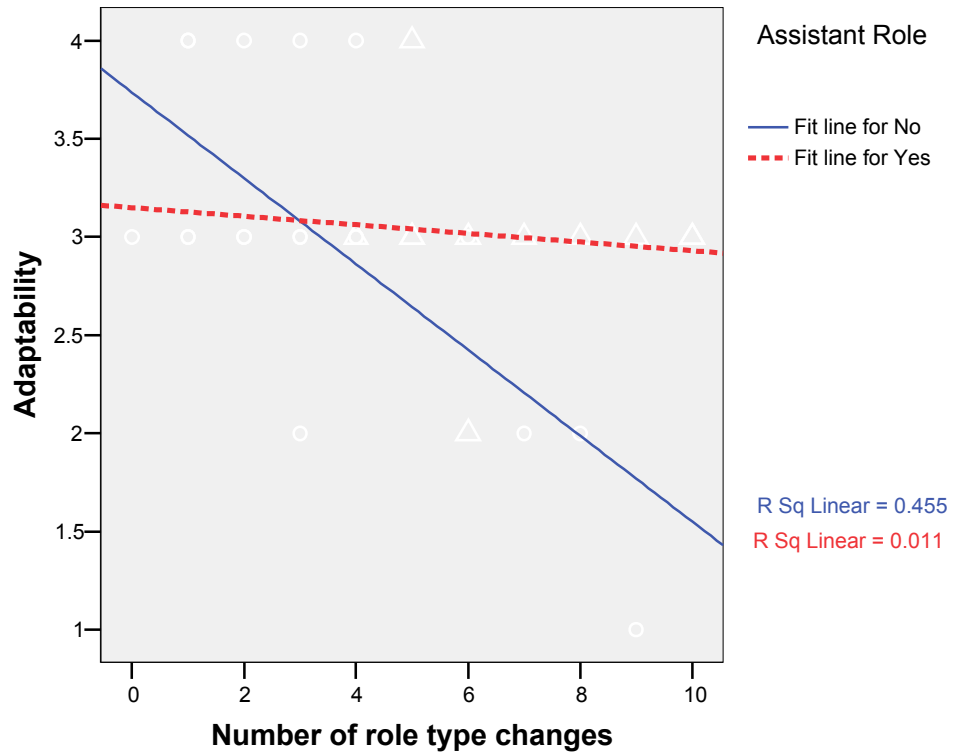


FIGURE 3

Quadratic Regression of Adaptability on Number of Role Types

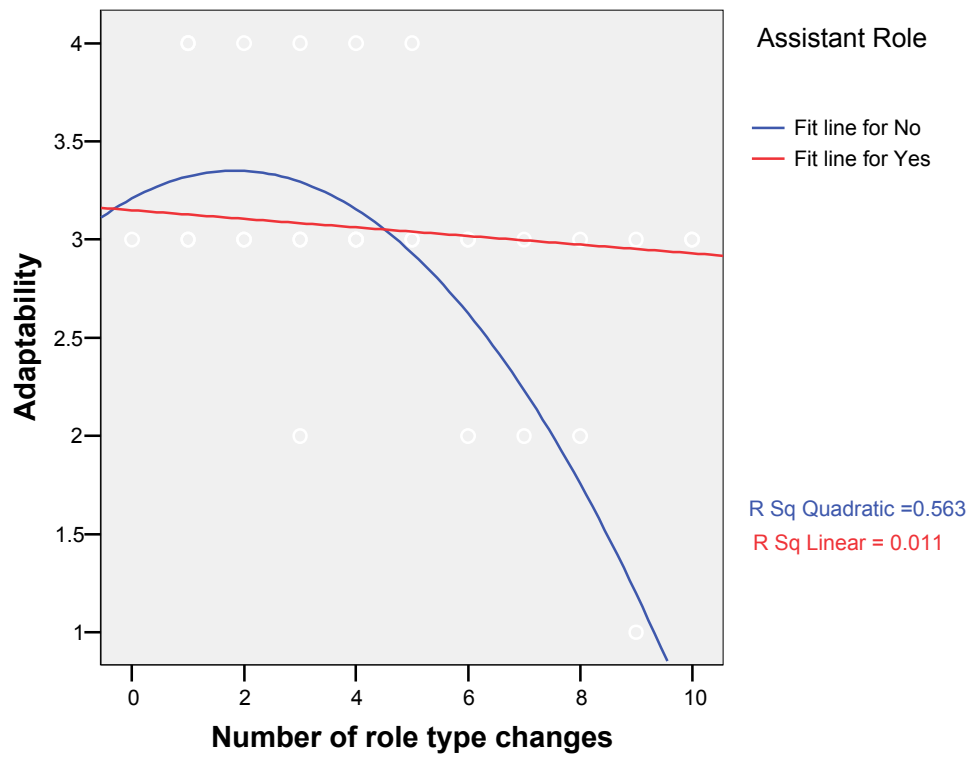


FIGURE 4

Adaptability vs. Average Months in Role Type

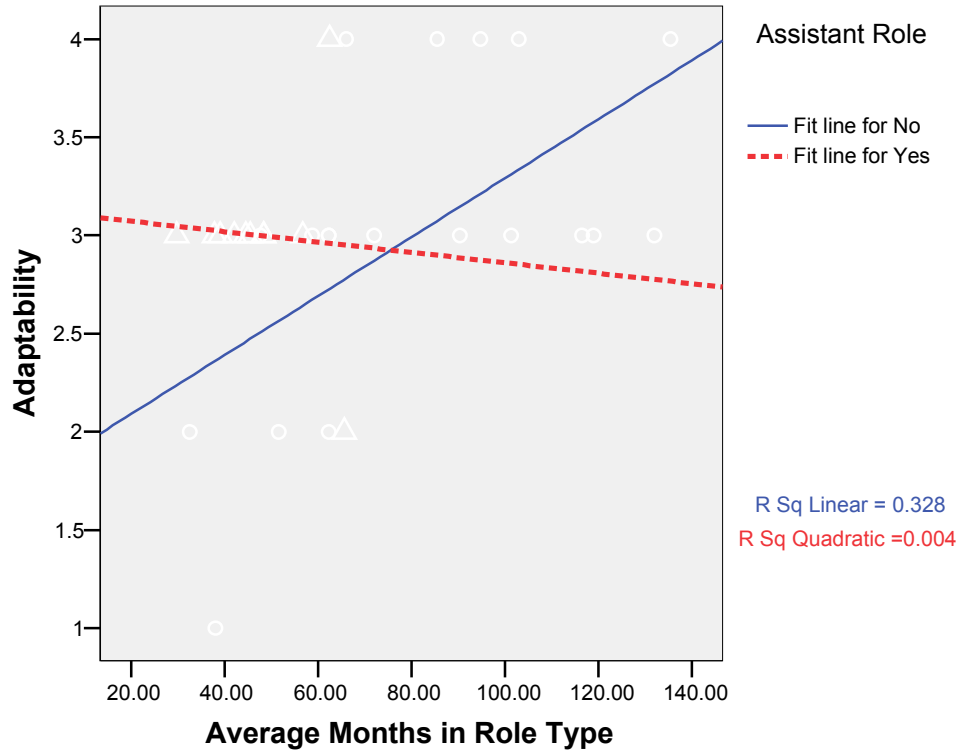


FIGURE 5

Quadratic Regression of Adaptability on Average Months in Role Type

