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Unlearning at Work
Insights for Organizations

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Makoto Matsuo

Unlearning at Work

Insights for Organizations

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Preface

Unlearning—abandoning obsolete knowledge, values, or behaviors, then acquiring new ones—is imperative for continuous development and growth. Employees who are transferred to unfamiliar departments or promoted to higher positions have to change their previous work processes and skills as new ones are required. Considering the rapid environmental changes, even high-performing professionals need to replace obsolete and outdated know-how with the latest effective version.

The following episode shows the importance of individual unlearning. The former president of the Japanese Shogi Association, Mr. Kunio Yonenaga, was in a slump and had lost all his titles in his mid-40s (Yonenaga, 2006). In particular, he was often beaten by young shogi players. At that time, he was unable to understand why he did not win. In a conversation with a young disciple, he asked, "Why can't I win the game?" The disciple answered, "You have several favorite techniques in particular situations, Sir. Young players have already researched them in advance. To win the game, you need to abandon the old techniques and acquire and adopt new ones." Mr. Yonenaga then became a disciple of his disciple to learn the latest shogi techniques under his supervision. A few months later, Mr. Yonenaga won the Oushyo title and finally won the Meijin title (the most prestigious title) when he was 49 years old. He was the oldest player in history to win that title.

This episode suggests that unlearning is a major challenge for high-level professionals. To continuously grow as professionals, we need to recognize what should be abandoned and what should be acquired. However, previous research has mainly focused on unlearning at the organizational level (Becker & Bish, 2021; Hislop et al., 2014; Klammer & Gueldenberg, 2019), whereas only a few studies have investigated unlearning at the group and individual levels (e.g., Akgün et al., 2006; Kmieciak, 2020). To address this research gap, this book explores how employees unlearn their beliefs, work routines, and managerial skills by focusing on personal and situational antecedents. Specifically, the roles of learning goal orientation, reflection, and critical reflection are examined as personal factors of unlearning, whereas supervisors' activities and promotions to higher positions are investigated as situational factors.

One of the key terms in this book is "reflection and/or critical reflection," because individual unlearning is closely associated with the transformative learning proposed by Mezirow (2000, 2003). He insisted that individuals need to transform problematic

frames of reference through critical reflection. Since transformative learning has been mainly investigated using qualitative methods, this book quantitatively explores how employees unlearn their work processes through reflection and critical reflection.

I am writing this book during a pandemic caused by the novel coronavirus disease (COVID-19). During such a difficult time, employees all around the world are being required to critically reflect on their work styles for unlearning. They have to change their previous beliefs about business environments, give up direct communication in the workplace, and shift to remote work. In this challenging environment, most employees face tests of their unlearning capabilities.

Sapporo, Japan Makoto Matsuo
March 2021

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Makoto Matsuo is Professor of Management in the Graduate School of Economics and Business Administration at Hokkaido University, Japan. He received his Ph.D. in Management Learning from the University of Lancaster. His research interests include experiential learning, workplace learning, human resource development, and career management. His research papers were selected as "Outstanding Papers" of *European Journal of Marketing* in 2002 and *Journal of Workplace Learning* in 2018.

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Chapter 1
Research Framework

No one has much difficulty getting rid of the total failures. They liquidate themselves. Yesterday's successes, however, always linger on long beyond their productive life.
(Drucker, 1967, p. 104)

1.1 The Importance of Unlearning

As successful experiences accumulate over the years, organizations emphasize efficiency, grow complacent, and learn too little (Nystrom & Starbuck, 1984; Starbuck, 2017). As Drucker (1967) suggested, successful organizations are prone to reinforcing their cognition structures and expecting success to continue, and rarely pause to re-scan their environments (Starbuck & Hedberg, 2001). Levinthal and March (1993) called this tendency the "competency trap" or "success trap." To survive in today's competitive and turbulent environment, organizations need to "unlearn" or abandon obsolete and outdated knowledge or routines to make way for new ones in certain industries (Akgün et al., 2007; Becker, 2010; Fernandez et al., 2012; Hedberg, 1981; Tsang, 2008).

When investigating this topic, attention should be given not only to organizational unlearning but also to individual unlearning, because organizational unlearning is often triggered by individuals (Zhao et al., 2013), and unlearning occurs at the individual level (Rebernik & Sirec, 2007). This idea is in line with the viewpoint of organizational learning research that new knowledge is created by individuals (Nonaka, 1994) and that organizations ultimately learn via their members (Kim, 1993). These arguments suggest that individual unlearning is necessary to promote unlearning at the organizational level.

Employees need to unlearn in the following situations: First, they have to revise their knowledge and skills in response to external environmental changes, such as changes in customers' needs and competitors' strategies. Individuals can fall into a "competency or success trap" (Cumming, 2018; Holmqvist & Spicer, 2012). Second, employees need to renew their approach and knowhow when they move to different

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departments or organizations, because they are often required to play different roles in new positions (Becker & Bish, 2021; Davis & Esterby-Smith, 1984; McCall et al., 1988). Third, managers must update their managerial skills when they move to different organizational positions because of the requirement for successful job performance changes (Dai et al., 2011; Kaiser & Craig, 2011).

Despite its importance, unlearning has mainly been studied at the organizational level (Becker & Bish, 2021; Hislop et al., 2014; Klammer & Gueldenberg, 2019), while only limited empirical studies have examined unlearning at the individual level (e.g., Kmieciak, 2020). As suggested above, individual unlearning is a critical process by which employees continuously develop their competencies in various situations. To address this research gap, this study investigated how situational and personal factors influence individual unlearning, which affects employees' well-being.

1.2 The Competency Trap and Ambidexterity

According to Cumming (2018), individuals who fall into a competency trap become good at doing something and keep doing it that way, even when better ways of doing it are available; hence, they gradually become obsolete. Regarding the competency trap (Levinthal & March, 1993), Soichiro Honda, a founder of Honda Motor Co., Ltd., commented as follows in his book:

> We tend to view the rapidly changing society and ideology from obsolete past experience and knowledge. Such experience and knowledge do not lead to the right judgement and conclusion, because there is a gap between the viewpoint and historical changes. …We have to abandon past experiences like exhaust gas, which includes no reliable theory. (Honda, 2000, p. 47)

This suggests that we tend to stick to knowledge and skills acquired through past experiences, even after they are outdated. Similarly, the Japanese shogi master (Eternal Seven Crowns) Mr. Yoshiharu Habu spoke of it in his book:

> The world of Japanese shogi is valued and respected by battle formats and patterns. If I always make use of my gifted skills and talents with the same techniques, it would be easy for me to battle most of the time, and I want to have such a relaxed moment all the time. However, keeping playing with the same formats and patterns would make me feel tired of them, and I would feel sort of "suffocated." Because the ideas would be limited and the world of shogi would become so confined, as human beings tend to adapt and get used to rules and routines easily. If I never attempt to try new approaches, perhaps such a relaxed feeling would always stick with me, but as it continues, everything keeps running and flowing "as-is." … Consciously, I believe new things should be attempted all the time. (Habu, 2012, p. 165)

Overcoming the competency or success trap enables individuals to become "ambidextrous employees" who can balance exploitation (focusing attention on what is already known) and exploration (searching for novel and alternative ways of approaching tasks) in their activities by refining and renewing their knowledge and skills (Good & Michel, 2013; Holmqvist & Spicer, 2012; Levinthal & March, 1993; March, 1991; Mom et al., 2009, 2015). That is, employees who fall into a

competency trap tend to stress exploitation rather than exploration activities, which results in limited performance (Rosing & Zacher, 2017; Schnellbächer et al., 2019). Employees need to abandon their obsolete and outdated knowledge and skills to break out of the competency trap and balance exploration and exploitation.

1.3 The Concept of Individual Unlearning

The concept of unlearning has been investigated for more than 30 years in the context of organizational learning (Brook et al., 2016). Previous studies on organizational unlearning have assumed that the term "unlearning" refers to a process of clearing out old routines and beliefs that no longer meet current challenges (Cegarra-Navarro et al., 2014; Tsang & Zahra, 2008). The idea behind unlearning is that the inability to discard outdated knowledge may become a major hindrance to learning or innovation (Easterby-Smith et al., 2004; Fernandez et al., 2012). That is, abandoning obsolete knowledge is critical for gaining new knowledge; thus, the inefficiency in promoting unlearning is evidence of a crucial weakness (Hedberg, 1981).

The process of organizational unlearning involves the evolution of individual and group learning (Zhao et al., 2013). Therefore, unlearning at the individual level should promote unlearning at the group level, which may influence organizational unlearning. Thus, individual unlearning can trigger organizational unlearning (Leal-Rodríguez et al., 2015). On the other hand, to adapt to changes in the organization, individuals must unlearn old work procedures to accomplish tasks and duties (Nissen et al., 2010). As unlearning occurs at both levels simultaneously, it is necessary to pay attention not only to organizational unlearning, but also to individual unlearning (Rebernik & Sirec, 2007).

Based on prior literature (Becker, 2005; Hislop et al., 2014; Tsang & Zahra, 2008), this study defines individual unlearning as the process by which individuals consciously choose to give up, abandon, or stop using knowledge, values, or behaviors to acquire new ones. There are three assumptions in this definition. First, individual unlearning is a conscious and intentional process of giving up knowledge, values, or behaviors. Second, what is unlearned is not permanently lost or destroyed, but is no longer used by the individual (Hislop et al., 2014). That is, individuals who have unlearned would have memorized old knowledge and skills, which can be referred to if necessary. Thus, unlearning is distinguished from forgetting, which refers to the unconscious or accidental giving up of something (Hislop et al., 2014). This feature is not applicable to the definition of organizational unlearning because old routines are usually replaced by new ones in the organization. Third, the abandonment of existing knowledge, skills, and behaviors often occurs simultaneously while acquiring new ones (Becker, 2005; Cegarra-Navarro & Sánchez-Polo, 2011). That is, unlearning may occur when we become aware that the knowledge, values, or behaviors we possess are no longer valid or useful and we need to acquire new ones (Frese & Zapf, 1994). In this situation, most people tend to discard the parts of their knowledge, values, or behaviors that are no longer valid or useful and acquire new ones.

Table 1.1 Unlearning and learning types

Learning behaviors	Learning types		
	Accumulative	Updating or replacing	Focusing or selective
Acquiring knowledge and skills	+	+	−
Abandoning knowledge and skills (unlearning)	−	+	+

Note '+' = commit; '−' = not commit

Importantly, unlearning is not identical to learning; instead, unlearning is a key step in learning. As shown in Table 1.1, there are three types of learning. The first type is "accumulative learning," in which an individual acquires knowledge and skills without abandoning old ones. He/she simply adds new things to their repertoire of knowledge and skills and makes use of them as required. This type of learning may be closely related to exploitation activities, which include improving and extending existing competencies (March, 1991; Mom et al., 2007).

The second type is "updating or replacing learning," in which an individual abandons or discards old knowledge to acquire new material. This may be closely associated with exploration activities, which include experimenting with new approaches and reconsidering existing beliefs (Mom et al., 2007). Previous research on unlearning has stressed the importance of updating or replacing knowledge to keep pace with ongoing changes (e.g., Cepeda-Carrión et al., 2015; Starbuck, 2017).

The third type is "focusing or selective learning," in which an individual abandons or no longer uses obsolete or outdated knowledge, and focuses on existing effective knowledge, without acquiring new knowledge. This may happen when an individual has diverse repertoires of knowledge and skills and can select the necessary one(s).

Among these three types of learning, it is problematic that employees typically remain at the first type, adopting no-longer-appropriate knowledge and skills that they used in past environments (Charan et al., 2001). As such, employees would do better to adopt the second type of learning to prevent competency traps. This study uses "unlearning," which refers to "updating or replacing learning," in the following sections.

It is important to note the level of unlearning. Hislop et al. (2014) distinguished "deep unlearning," which refers to examining values and assumptions rather than particular behaviors or practices, from "wiping," as a deliberate process of change focusing on a relatively narrow practice or activity. Deep unlearning is associated with exploration, whereas wiping is related to exploitation. Deep unlearning may occur when individuals are engaged in "transformative learning" or transforming a problematic frame of reference (Mezirow, 2000, 2003), and "double-loop learning" or detecting a mismatch and correcting it by changing the underlying values and status quo that govern behavior (Argyris, 2003). It can be said that exploration, transformative learning, and double-loop learning involve the "updating or replacing" type of learning at a deep level.

1.4 Operationalization of Individual Unlearning

To operationalize individual unlearning, this study used the measurement scale developed by Akgün et al. (2006), which defines unlearning as "changes in beliefs and routines." Although the scale was originally used to assess team unlearning, it may be applicable to measuring individual unlearning because individuals also have beliefs and follow routines in performing tasks. In this study, "routines" refers to on-the-job behavioral patterns, such as the procedures or methods used to perform tasks. Previous studies have found that individuals' routines and beliefs strongly influence their attitudes and behaviors (Ajzen, 1985; Montano & Kasprzyk, 2015; Osgood et al., 1996).

Specifically, the respondents were asked to rate the changes in their beliefs and routines in the past year on a five-point Likert scale (1 = hardly changed, 5 = greatly changed).[1]

Changes in beliefs:

Technological improvements
External environment
Customer demands

Changes in routines:

Work methods or procedures
Methods for gathering and sharing information
Decision-making process or methods

The scale measures individual unlearning because individuals have to abandon old values, knowledge, and skills when they change their beliefs and/or routines. Given the characteristics of routines and beliefs that guide individual behaviors, the unlearning measured in this study may involve deep unlearning rather than wiping.

1.5 Structure of This Book

As explained earlier, few studies have explored the unlearning process at the individual level. The purpose of this study was to identify the antecedents and consequences of individual unlearning. Figure 1.1 shows a research framework that assumes that personal and situational factors influence individual unlearning that results in work engagement, which is considered to be a very good predictor of important employee outcomes (Bakker & Albrecht, 2018). As personal factors, goal orientation and reflection were chosen because they have been shown to play a role in guiding individual attitudes and behaviors. Promotion and supervisor behaviors

[1] In the analyses in Chap. 3, two items were added to the scale for measuring changes in routines ("work plans" and "work tools").

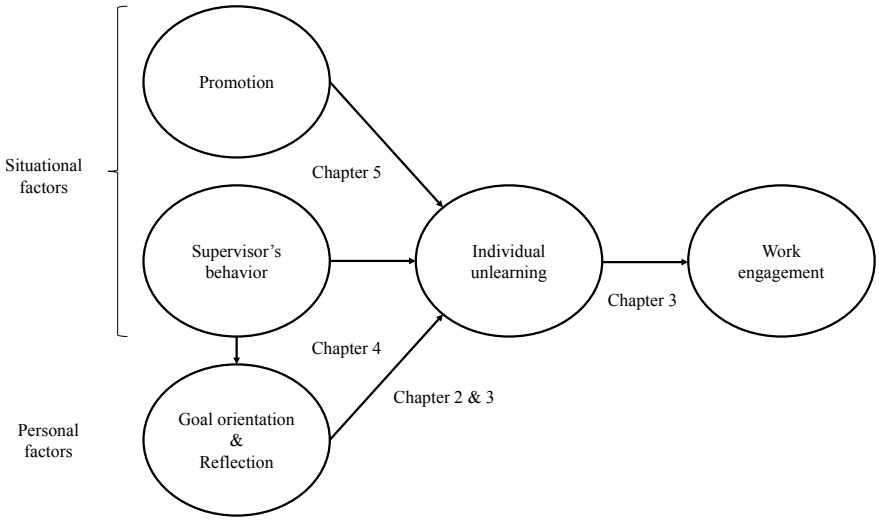

Fig. 1.1 Research framework

were selected as situational factors, as they are also believed to have strong impacts on employees' goals and reflective activities.

In Chap. 2, the effects of two types of goal orientation (learning goal orientation and performance goal orientation) on individual unlearning through reflection and critical reflection are examined using survey data from 271 employees of Japanese organizations.

In Chap. 3, the effects of reflection and critical reflection on work engagement through individual unlearning are explored using a questionnaire survey of 301 employees working in various occupations and organizations in the US.

In Chap. 4, the effects of managers' exploration activities on the learning orientation, reflection, and unlearning of team members are analyzed using a questionnaire survey conducted among 115 employees in 23 teams from a Japanese pharmaceutical company.

In Chap. 5, the managerial unlearning process upon promotion from senior manager to executive officer is qualitatively examined using interview data from 46 executive officers at medium- and large-sized Japanese firms.

In Chap. 6, this study proposes a model of an individual unlearning process based on the above findings.

1.6 Theoretical Contributions of This Book

This book has five main theoretical contributions. First, the present research developed a measurement scale for individual unlearning based on the team unlearning

scale created by Akgün et al. (2006) and examined the antecedents and consequences of individual unlearning using the scale in Chaps. 2, 3, and 4. This is the first measurement scale of individual unlearning, which has been used in other studies (e.g., Kmieciak, 2020).

The second contribution to the existing literature is the identification of a reflective process for promoting individual unlearning. Although previous studies have emphasized critical reflection rather than reflection in management learning (Cunliffe, 2009; Mezirow, 1991, 2003; Reynolds, 1998), the results of Chaps. 2, 3, and 4 indicate that reflection directly and indirectly promotes individual unlearning mediated through critical reflection, using survey data of employees in Japan and the US.

The third contribution is to clarify the role of learning goal orientation in directly and indirectly facilitating individual unlearning through reflection and critical reflection, as shown in Chaps. 2 and 4. Although the relationship between learning goal orientation and employee creativity has been reported in past research (Gong et al., 2009), this book may be the first to identify the combined effects of learning goal orientation and reflective activities on individual unlearning.

Fourth, the present research contributes to the literature by examining the situational antecedents of individual unlearning in terms of supervisors' exploratory activities and promotions to higher positions from an individual ambidexterity (Mom et al., 2009, 2015), leadership pipeline model (Charan et al., 2001), and upper echelons perspective (Hambrick, 2007; Hambrick & Mason, 1984), as shown in Chaps. 4 and 5.

Finally, based on the findings of Chaps. 2, 3, 4, and 5, the present research proposes a model of an individual unlearning process, drawing on Kolb's (1984) experiential learning model. The model provides insights into the mechanism by which employees unlearn through general and critical reflection driven by learning goal orientation under the influence of supervisors and roles. In comparison with Kolb's model, the unique characteristics of the model are discussed in Chap. 6.

1.7 Structure of Each Chapter

Each chapter (Chaps. 2–5) consists of the sections described in Figs. 1.1 and 1.2. First, I provide "highlights" to show the main findings of the chapter in an itemized form using three or four sentences. Readers may understand what has been found in the analyses in advance. Next, a "typical case" that exemplifies the main findings is described. The cases were extracted from qualitative research conducted using an open-ended questionnaire survey or interviews about unlearning. Then, empirical studies are presented in accordance with the structure, including a brief literature review, methodology, results, and discussion.

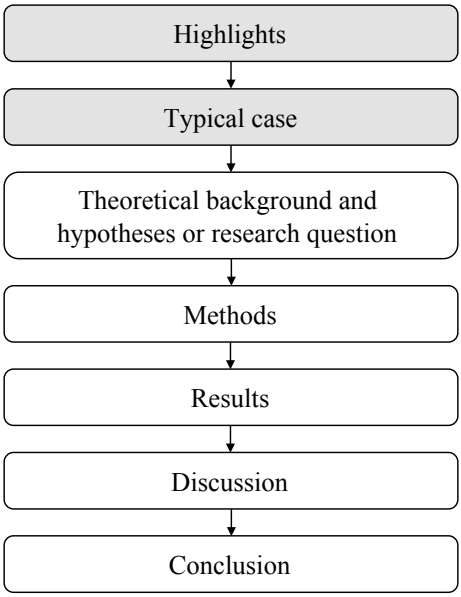

Fig. 1.2 Structure of each chapter

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Chapter 2
Goal Orientation, Critical Reflection, and Unlearning

Do not imitate works of others, not even your own.
(Okamoto, 2005, p. 68)

2.1 Highlights

- The goal of this chapter is to examine the antecedents of individual unlearning in terms of goal orientation and reflective activities.
- Learning goal orientation promotes unlearning through reflection and critical reflection, as well as through critical reflection only.
- Performance goal orientation promotes unlearning through reflection and, subsequently, through critical reflection.
- Critical reflection plays an indispensable role in linking goal orientation to individual unlearning.

2.2 Typical Case

The following is the case of a public nurse who doubted the precedent course of action and then changed her working style.

> Until then, my work course of action was based only on my consciousness from precedents. However, at that time, I thought I wanted to work with fulfillment and enjoyment to empower the residents or clients that I served. In order to realize such a vision, I deeply thought about how to change my work processes. Then, I tried to proactively communicate with residents to strengthen our relationship and broaden my scope and perspectives to better plan healthcare schemes. As a result, I strove to propose suggestions to my supervisors for changing work processes and was able to strike a balance between efficiency and effectiveness.

M. Matsuo, *Unlearning at Work*, SpringerBriefs in Business,
https://doi.org/10.1007/978-981-16-3799-5_2

This case indicates that the public nurse critically reflected on her work style based on her learning goals and unlearned her work processes from "acting on precedent" to a "communication-oriented proactive style."

2.3 Theoretical Background and Hypotheses

To understand the individual unlearning process, this chapter examined the effect of goal orientation and reflection on individual unlearning using survey data. Goal orientation is crucial for learning because goals influence how individuals interpret and respond to achievement (Dragoni et al., 2009; Dweck, 1986). While action is defined as goal-oriented behavior (Frese & Zapf, 1994), it can be foreseen that reflective activities involving reviewing objectives or work processes, enable individuals to identify beliefs or routines that should be stopped (Espedal, 2008).

Noteworthily, there are two types of goal orientation: learning goal orientation and performance goal orientation (Dweck, 1986; Dweck & Leggett, 1988). Reflection is also distinguished from critical reflection, which is a deeper cognitive activity (Cunliffe, 2004, 2016; Mezirow, 1991). It is hypothesized that learning and performance goal orientations affect reflection and critical reflection differently regarding their facilitative effect on individual unlearning. However, few studies have examined how goal orientations, reflection, and critical reflection combine to determine individual unlearning. The present research contributes to the literature by finding that individual unlearning was closely linked to reflective activities, inspired by individual goal orientations.

This chapter is organized as follows. First, the literature on reflection, critical reflection, and goal orientation is reviewed, and then hypotheses are proposed based on the literature review, followed by descriptions of quantitative methodology. Finally, the results are presented and discussed from theoretical and practical implications.

2.3.1 Reflection and Critical Reflection

To decide which beliefs and routines should be abandoned, individuals need to reflect on activities and practices. Prior research has suggested that reflection is key to learning and fostering positive occupational outcomes (Boud et al., 2006) because individuals learn from experiences by observing or reflecting on events and performance (Grant, 2001; Kolb, 1984; Yeo & Marquardt, 2015). Raelin (2002) defined reflective practice as the practice of "periodically stepping back to ponder the meaning of what has recently transpired to us and to others in our immediate environment" (p. 66). Gallagher et al. (2007) stated that reflection was a means of connecting individual learning with social outcomes.

It is important to distinguish "reflection," which focuses on the immediate, presenting details of a task or problem, from "critical reflection," which examines our taken-for-granted assumptions to become receptive to alternative ways of reasoning and behaving (Gray, 2007; Raelin, 2001; Reynolds, 1998). Cunliffe (2004) differentiates reflection from critical reflection by comparing it with the difference between single-loop and double-loop learning (Argyris, 1991). In other words, reflection corresponds to single-loop learning, which stresses on problem solving, identifying, and correcting errors, while critical reflection is equivalent to double-loop learning, which involves deeper critical thinking about behavior: questioning assumptions, values, and espoused theories.

With regard to the difference between these two concepts, Mezirow (1991) described reflection that includes critiquing assumptions on the content or process of "problem solving," while critical reflection involves the critique of presuppositions concerning "problem posing" that can make a situation that is taken for granted problematic, thereby raising questions regarding their validity. Reynolds (1998) likewise argued that reflection focuses on the immediate, presented details of a task or problem, as opposed to critical reflection, which concentrates on an examination of the assumptions being taken for granted within which the task or problem is situated. These studies suggest that critical reflection can be a higher level of reflective thinking than reflection as the former enables us to transform our meaning framework (Kember et al., 2000).

It is worth mentioning that critical reflection can lead to transformative learning, referring to the process of effecting change in a frame of reference or in the structures of assumptions through which we understand our experiences (Mezirow, 1990, 1997). Cunliffe (2009) also stated that a dialogue-with-self about our fundamental assumptions, values, and ways of interacting, stimulated us to be responsive to others and open to possibilities of new ways of being and acting. As per these arguments, individuals who critically reflect on pre-conceived assumptions are more likely to be aware of whether or not certain beliefs and routines have become obsolete.

Reflection may also facilitate unlearning because individuals who review the immediate, pressing details of their tasks to solve problems, may be aware of occupational routines that are ineffective for solving certain problems. It is predicted that individuals who often reflect on their tasks or problems have more opportunities to ascertain the inappropriateness of their taken-for-granted assumptions than do individuals who are not engaged in reflection at all. In other words, reflecting on "problem-solving" activities may bring about "problem posing" in critical reflection. That is, general reflection may serve as a basis for critical reflection. Thus, the following hypothesis was proposed:

Hypothesis 2-1: Reflection has a partial indirect effect on unlearning through critical reflection.

2.3.2 Goal Orientation

Goal orientation refers to one's dispositional or situational goal preferences in achievement situations (Payne et al., 2007). According to Dweck (1986), goals are classified into performance goals and learning goals. Specifically, individuals who have performance goals are concerned about gaining favorable judgments of their competence, while individuals who have learning goals are concerned about increasing their competence (Dweck & Leggett, 1988). Organizational psychology researchers have found that goal orientation plays a significant role in a variety of human resource decisions (Payne et al., 2007).

Of the two types of goals, learning goal orientation had positive impacts on employee creativity (Gong et al., 2009), motivation to learn (Klein et al., 2006), learning from failure (Noordzij et al., 2013), skill acquisition, and intrinsic motivation to improve skills (Hirst et al., 2009), the seeking of self-improvement information (Janssen & Prins, 2007), self-regulation (Bouffard et al., 1995) and metacognitive activity including planning, monitoring, and revising goal appropriate behavior (Ford et al., 1998). These results suggest that metacognitive or higher-order cognitive activities for learning such as reflecting on our behaviors or assumptions are facilitated by learning goals.

The repercussion of learning goal orientation on metacognition or self-regulation may be due to its influence on how individuals interpret and react to events (Dweck, 1986). Goal-setting theory (Locke & Latham, 2002) implies that goals direct individual attention and effort toward goal-relevant activities and away from goal irrelevant activities. To learn from experiences and to increase competence, both reflective and critically reflective practices are indispensable (Kolb, 1984; Schön, 1983). As such, the following hypotheses were proposed.

Hypothesis 2-2a: Learning goal orientation has a partial indirect effect on unlearning through reflection.

Hypothesis 2-2b: Learning goal orientation has a partial indirect effect on unlearning through critical reflection.

Prior empirical studies indicated that learning goal orientation promotes adaptive response patterns and are characterized by challenge seeking, persistence, and the acquisition of new knowledge, while performance goals are associated with maladaptive response patterns in which challenges are avoided (Payne et al., 2007; Porter et al., 2010). This is because individuals with a learning goal view challenging tasks as opportunities to learn, whereas individuals with a performance goal perceive challenging tasks as inherently risky as they fear failures and reveal their inadequate abilities to others (Dragoni et al., 2009).

However, Payne et al. (2007) stated that a high-performance goal does not reduce the general positive effect of a high learning goal when the two types of goals are paired. Similarly, Porter et al. (2010) discovered that learning and performance orientation had interactive effects on team performance when teams did not have slack

resources. These studies suggest that performance goal orientation can have a positive impact on individual or team outcomes. Additionally, Bouffard et al. (1995) showed positive effect of the performance orientation of college students on their self-regulation, although the effects were not as strong as those observed for a learning orientation. Janssen and Prins (2007) also revealed that performance goal orientation stimulated seeking information for self-improvement. These results suggest that performance goal orientation can drive metacognitive activities. Therefore, the following hypotheses were proposed.

Hypothesis 2-3a: Performance goal orientation has a partial indirect effect on unlearning through reflection.

Hypothesis 2-3b: Performance goal orientation has a partial indirect effect on unlearning through critical reflection.

Given Hypothesis 2-1, which states that reflection has a partial indirect effect on unlearning through critical reflection, there must be two indirect effects from goal orientations on unlearning. That is, both learning goal orientation and performance goal orientation may indirectly influence unlearning through reflection and, subsequently, through critical reflection. These relationships show that two types of goal orientation motivate individuals to engage in general reflection of their work processes, leading to critical reflection, which results in unlearning. Therefore, the following hypotheses were proposed:

Hypothesis 2-4a: Learning goal orientation has a partial indirect effect on unlearning through reflection and, subsequently, through critical reflection.

Hypothesis 2-4b: Performance goal orientation has a partial indirect effect on unlearning through reflection and, subsequently, through critical reflection.

Based on the hypotheses presented above, this study proposed the research model shown in Fig. 2.1.

2.4 Method

2.4.1 Sample and Data Collection

Questionnaire surveys were conducted with municipal government employees, HRD (human resource development) trainers from a consulting firm, and hospital nurses in Japan. In total, 417 questionnaires were distributed to all participants through e-mails from their HRD departments. The response rate was 64.9% with 271 usable responses. The sample consisted of 91 municipal public servants, 73 trainers, and 107 nurses.

Participants responded to the questions on a five-point Likert scale. The sample was 51.3% male (69.2% for government employees, 91.8% for trainers, 9.3% for nurses). The average amount of work experience was 21.2 years (SD = 8.3)

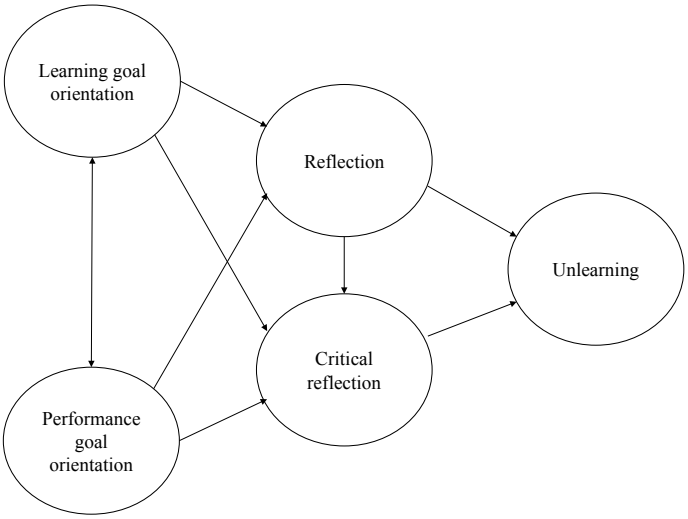

Fig. 2.1 Research model (Study 1)

(23.6 years for government employees, 23.8 years for trainers, 17.4 years for nurses). The age distribution was as follows: 29 years and younger (24.4%), 30–39 (37.3%), and 40 years and older (38.3%) (1.1%, 14.3%, and 84.7% for government employees, 0.0%, 0.0%, and 100% for trainers, and 0%, 48.6%, and 51.4% for nurses, respectively). The sample consisted of staff (37.7%), junior managers (45.4%), and middle managers (16.9%) (all trainers were staff level, 1.1%, 55.0%, and 43.9% for government employees, respectively, and 24.3%, 46.7%, and 29.0% for nurses, respectively).

2.4.2 Measures

As the questionnaire was written in Japanese, back-translation was performed to minimize discrepancies between the original and the translated questionnaires (Cascio, 2012). First, I conducted a translation from the English versions of the scales into Japanese, then, a bilingual language professional conducted a back-translation into English. If the back-translated item was not equivalent to the original one, the translated Japanese item was revised. Respondents were asked to answer the questions on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree), except for unlearning. The scores for each item were used as observable variables except for social desirability. The average score for the items was used for controlling the effect of social desirability on reflection, critical reflection, and unlearning.

Learning goal orientation. Five items derived from Button et al. (1996) were used to assess learning goal orientation. The items are: "When I fail to complete a difficult

task, I plan to try harder the next time I work on it"; "I prefer to work on tasks that force me to learn new things"; "I do my best when I'm working on a fairly difficult task"; "The opportunity to extend the range of my abilities is important to me"; and "When I have difficulty solving a problem, I enjoy trying different approaches to see which one will work."

Performance goal orientation. Five items derived from Button et al. (1996) were used to assess performance goal orientation. The items are: "I prefer to do things that I can do well rather than things that I do poorly"; "The things I enjoy the most are the things I do the best"; "The opinions others have about how well I can do certain things are important to me"; "I feel smart when I do something without making any mistakes"; and "I like to work on tasks that I have done well on in the past."

Reflection. Five items derived from West (2000) were used to assess individual reflection. The items are: "I often review my work objectives"; "I often reflect upon whether I am working effectively"; "I often review the methods I use to get the job done"; "I modify my work objectives in the light of changing circumstances at work"; and "I often review my approach to getting the job done."

Critical reflection. The scale developed by Kember et al. (2000) for educational programs was modified to assess critical reflection. The items are: "I often review the way I look at myself"; "I sometimes challenge some of my firmly held ideas"; "I often rethink my normal way of doing things"; and "I sometimes discover faults in what I had previously believed to be right."

Individual unlearning. As explained in Chap. 1, the scale of team unlearning developed by Akgün et al. (2006) was modified to measure individual unlearning. The scale consists of belief change (three items) and routine change (three items). The following belief change items were used: "beliefs on technological improvements"; "beliefs on the external environment"; and "beliefs on customer (patient) demand." The items of routine change are: "work methods or procedures"; "methods for gathering and sharing information"; and "decision-making processes or methods." Respondents were asked to rate the changes in their beliefs and routines in the past year on a five-point Likert scale (1 = hardly changed, 5 = greatly changed).

Social desirability. To prevent potential common method bias, social desirability was assessed using six items derived from Paulhus (1991). The items are: "I never regret my decisions"; "I don't care to know what other people really think of me"; "I am fully in control of my own fate"; "I am very confident of my judgments"; "Once I've made up my mind, other people can seldom change my opinion"; and "It's all right with me if some people happen to dislike me."

Control variable. Of the three sample organizations, nurses may have unique characteristics, because reflection is a common process used to search for solutions in the nursing field and has been employed as an invaluable tool in nursing education (Bulman et al., 2012; Jootun & McGarry, 2014). In order to control its effect, a dichotomous dummy variable for profession (1 = municipal government employees and HRD trainers; 2 = nurses) was included in the equation.

2.4.3 Validation in Measures

Cronbach's α were used to evaluate the internal consistency of the constructs. As shown in Table 2.1, the Cronbach's α values for learning goal orientation, performance goal orientation, reflection, critical reflection, and unlearning were 0.85, 0.78, 0.79, 0.70, and 0.87, respectively, which met the recommended reliability coefficient of 0.70 (Nunnally, 1978).

To assess the convergent validity of the model constructs, a confirmatory factor analysis (CFA) with five latent learning constructs and a total of 21 items was conducted. The results showed that all items were significant for the respective constructs ($p < 0.001$). The goodness-of-fit statistics for the model ($\chi^2 = 317.59$ ($df = 179$, $p < 0.001$), $\chi^2/df = 1.77$, comparative fit index (CFI) = 0.92, root mean square error of approximation (RMSEA) = 0.05, and standardized root mean square residual (SRMR) = 0.05), were acceptable considering the cut-off value criteria proposed in past studies ($\chi^2/df < 2.0$; CFI > 0.90; RMSEA < 0.06; and SRMR < 0.08) (Hu & Bentler, 1999; Lance et al., 2006).

2.4.4 Assessment of Common Method Bias

As the data were collected from self-reported questionnaires measured from a single source, there was a possibility that the results of the study would suffer from common method bias. Several diagnostic analyses were conducted to address this issue. First, Harman's one-factor method was performed. This method assumes that a substantial amount of common method variance is present if a single factor emerges from a factor analysis, or one general factor accounts for the majority of the covariance among the measures (Podakoff et al., 2003). A principal component factor analysis was performed on the items for all the variables. The results show that six factors were extracted, while one factor accounted for 20.6% of the variance. The results indicate that a serious common method bias was not present in this study.

Second, the partial correlation procedure suggested by Lindell and Whitney (2001) was conducted. As the theoretically unrelated marker variable, an item ("I have a lot in common with the people around me") of the revised UCLA Loneliness Scale (Russell et al., 1980) was used. When the effect of this variable was partialed out from the relationships between studied variables, the original correlations matrix between variables was similar to the partial correlation matrix. This indicates that common method bias did not seriously affect the results.

Third, since social desirability has the potential to bias the respondents' answers and to mask the true relationships between the variables (Podsakoff et al., 2003), this study included social desirability in the equation as a control variable to separate out its effects on the predictor and criterion variables in the analyses.

Finally, the results of a series of CFA showed that the five-factor model fit the data much better than the single-factor, two-factor, three-factor, or four-factor models,

Table 2.1 Descriptive statistics and correlations (Study 1)

Variable		Mean	Standard deviation	1	2	3	4	5	6
1	Learning goal orientation	4.04	0.58	(0.85)					
2	Performance goal orientation	3.27	0.62	−0.03	(0.78)				
3	Reflection	3.70	0.53	0.36***	0.13*	(0.79)			
4	Critical reflection	3.56	0.53	0.32***	−0.01	0.43***	(0.70)		
5	Unlearning	3.30	0.73	0.24**	0.03	0.18**	0.28***	(0.87)	
6	Social desirability	2.79	0.55	0.22***	0.06	0.22***	0.05	0.03	(0.73)
7	Profession	1.39	0.49	−0.03	0.13	−0.18**	−0.08	0.19**	−0.11

Note *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$. Cronbach's α values are shown along the diagonal. Unlearning is the average score of unlearning (beliefs) and unlearning (routines). Profession is the dummy variable (1 = government employees and HRD trainers; 2 = nurses)

suggesting that the influence of common method bias was minimized in this study (Podsakoff et al., 2003).

2.5 Results

The descriptive statistics and the correlations among the variables are presented in Table 2.1. To test the proposed model, structural equation modeling (SEM) was conducted with the hypothesized model. The standardized path coefficients for the hypothesized model are shown in Table 2.2, and the summary of the results is presented in Fig. 2.2. To test the indirect effects, the bootstrapping estimate was performed following the recommendation by Preacher and Hayes (2008). Specifically, bootstrap analyses using 2000 random samples were conducted, interpreting the results using the 95% confidence interval (CI). The CI must exclude zero to establish significance.

Table 2.2 Structural model estimates (Study 1)

Structural path			Standardized estimate	*t*-value
Critical reflection	→	Unlearning	0.40	2.45*
Reflection	→	Unlearning	0.02	0.17
Reflection	→	Critical reflection	0.54	5.73***
Learning goal orientation	→	Reflection	0.38	5.06***
Learning goal orientation	→	Critical reflection	0.23	2.42*
Performance goal orientation	→	Reflection	0.21	2.78**
Performance goal orientation	→	Critical reflection	−0.08	−0.87
Control variables				
Social desirability	→	Unlearning	0.05	0.67
Social desirability	→	Reflection	0.12	1.62
Social desirability	→	Critical reflection	−0.13	−1.81
Profession	→	Unlearning	0.25	2.62**
Profession	→	Reflection	−0.21	−3.46***
Profession	→	Critical reflection	0.01	0.03
Learning goal orientation	⇔	Performance goal orientation	−0.08	−1.10

Note *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$. CFI = 0.890; SRMR = 0.064; RMSEA = 0.059; $\chi 2/df = 1.95$

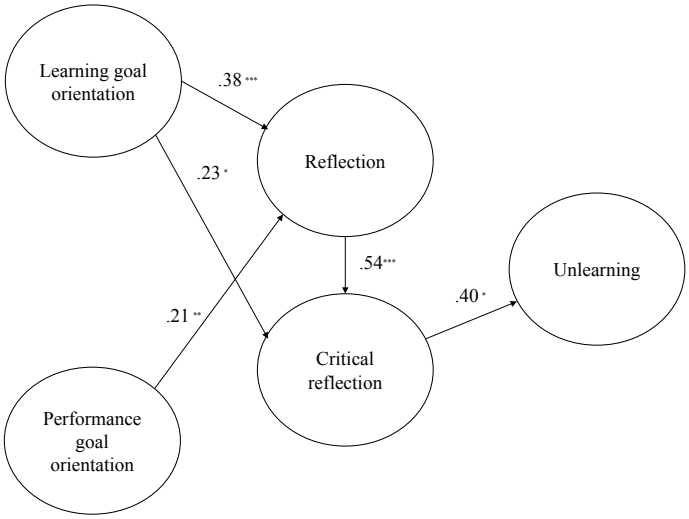

Fig. 2.2 Summary of results (Study 1). *Note* Only significant standardized estimates are reported (*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$). The effects of social desirability and profession were controlled, but are not shown

Hypothesis 2-1 states that reflection has a partial indirect effect on unlearning through critical reflection. As shown in Table 2.2 and Fig. 2.2, the results of structural equation modeling indicate that critical reflection had a positive direct effect on unlearning (0.40, $p < 0.05$), while reflection had no significant direct effect on unlearning (0.02, *n.s.*). It was also found that reflection had a positive direct effect on critical reflection (0.54, $p < 0.001$). To test the indirect effect, bootstrapping estimates were calculated, and the results showed that the 95% confidence interval (CI) for the indirect effect of reflection on unlearning through critical reflection excluded zero (indirect effect = 0.22, 95% CI [0.09, 0.45]). The results suggest that reflection had a complete indirect effect on unlearning through critical reflection. Therefore, Hypothesis 2-1 was partially supported.

Table 2.2 and Fig. 2.2 show that learning goal orientation had positive direct effects both on reflection (0.38, $p < 0.001$) and critical reflection (0.23, $p < 0.05$). The bootstrapping results on three indirect effects from learning goal orientation to unlearning suggest that the CI for the two indirect effects (learning goal orientation → critical reflection → unlearning; learning goal orientation → reflection → critical reflection → unlearning) excluded zero (indirect effect = 0.09, 95% CI [0.01, 0.22]; indirect effect = 0.08, 95% CI [0.03, 0.19]). However, the CI for the indirect effect of learning goal orientation on unlearning through reflection included zero (indirect effect = 0.01, 95% CI [−0.07, 0.13]). The results support Hypotheses 2-2b and 2-4a, but do not support Hypothesis 2-2a.

Figure 2.2 show that performance goal orientation had a positive direct effect on reflection (0.21, $p < 0.01$), yet no significant effect on critical reflection (−0.08, *n.s.*).

The bootstrapping results indicate that the CIs for the two indirect effects (performance goal orientation => reflection => unlearning; performance goal orientation => critical reflection => unlearning) included zero (indirect effect = 0.01, 95% CI [−0.04, 0.07]; indirect effect = −0.03, 95% CI [−0.10, −0.03]). The results do not support Hypotheses 2-3a and 2-3b. However, the CI for one indirect effect (performance goal orientation => reflection => critical reflection => unlearning) excluded zero (indirect effect = 0.04, 95% CI [0.01, 0.04]). The results indicate that performance goal orientation had a complete indirect effect on unlearning through reflection and, subsequently, through critical reflection, suggesting that Hypothesis 2-4b was partially supported.

2.6 Discussion

Despite its importance for personal growth, few studies have quantitatively investigated the individual unlearning process. The results of this chapter showed that there is a multi-step relationship between goal orientations and unlearning. Specifically, learning goal orientation indirectly promoted unlearning through reflection and critical reflection, as well as through critical reflection only, while performance goal orientation indirectly promoted unlearning through reflection and, subsequently, through critical reflection. Noteworthily, unlearning occurs only after critical reflection. This study contributes to the existing literature by presenting that individual unlearning was closely associated with reflective activities, which are directed by individual goal orientations.

2.6.1 Theoretical Implications

The findings of this chapter extend the previous research on individual unlearning in four important ways. First, critical reflection was found to have a direct effect on individual unlearning, while reflection was not. The results coincide with Mezirow's (1990, 1997) transformative learning theory, suggesting that challenging the validity of beliefs and assumptions obtained in prior learning enables individuals to change the structures of the assumptions or a frame of references. As prior research has suggested, critical reflection can lead us to be receptive to alternative ways of reasoning and behaving (Cunliffe, 2009; Gray, 2007; Raelin, 2001; Reynolds, 1998). Therefore, unlearning facilitated by critical reflection may initiate double-loop learning in organizations (Argyris, 1991; Cunliffe, 2004, 2016). One of the contributions of this study concerns the role of critical reflection in individual unlearning, which has not been quantitatively examined in past studies.

Second, the results show that reflection promotes critical reflection, indicating that people who reflect on their work processes and activities tend to reflect on their firmly held beliefs or assumptions. This finding suggests that ordinary or general

reflection can provide a basis for critical reflection. In other words, individuals are capable of reviewing their taken-for-granted assumptions by becoming accustomed to reflecting on their objectives, work methods and approaches. Although past research has stressed the differences between these two types of reflection (e.g., Cunliffe, 2004, 2016; Mezirow, 1990; Reynolds, 1998), this study demonstrates that reflection is always an antecedent of critical reflection.

Third, the findings indicate that there were two paths from learning goal orientation to unlearning. In the first path, learning goal orientation promotes unlearning through critical reflection only. In the second path, unlearning results from learning goal orientation promotes unlearning through reflection and, subsequently, through critical reflection. The results suggest that learning goal orientation is a main driver of critical reflection, which leads individuals to unlearn. This may be due to that learning goal orientation can activate individuals' self-regulated or metacognitive activities (Bouffard et al., 1995; Ford et al., 1998). That is, learning goals may have a directive function (Locke & Latham, 2002) for higher-order cognitive activities, such as critical monitoring and revision of individuals' behaviors or perspectives. Although Gong et al. (2009) found that learning goal orientation enhanced employee creativity, the results of this chapter suggest that reflection and critical reflection affect this relationship. This study may perhaps be the first empirical research ever to identify the process by which learning goal orientation promotes individual unlearning mediated through reflection and critical reflection.

Finally, the results indicate that performance goals, which are concerned with gaining favorable judgments of an individual's competence, can be a determinant of general reflection on his/her objectives or work methods, which leads to critical reflection and unlearning. Although many prior studies have indicated that performance goals are associated with maladaptive response patterns in which challenges are avoided (Payne et al., 2007; Porter et al., 2010), this study suggests that performance goal orientation can lead to deep learning when accompanied by reflection and critical reflection.

2.6.2 Practical Implications

The findings of this chapter have managerial implications for fostering individual unlearning in the workplace. First, in order to help employees unlearn their beliefs and work routines, organizations could facilitate critical reviews of the validity of firmly held assumptions or working styles by holding regular meetings or interviews for assessing work progress. It may be important to develop training programs through training program which participants can comprehend the difference between reflection, which emphasizes problem solving, and critical reflection, which focuses on problem posing. The "after-event reviews," which enable people to critically reflect on their behaviors (DeRue et al., 2012), may be an effective tool for promoting reflective practices in organizations. These programs may encourage organizational

members to be engaged in "double-loop learning" (Argyris, 1991) or "exploration" (March, 1991).

Second, the results suggest that the more individuals reflect on their daily work methods and objectives, the more likely they tend to critically review their assumptions, values, or beliefs. Therefore, encouraging general reflection in the workplace may be ideal for promoting critical reflection. To this end, it is important for managers to hold periodic meetings in which sophisticated group facilitation skills are used. In addition, managers may consider periodic private interviews that involve all of the above. Such practices can build a foundation for further critical reflection. Meanwhile, organizations should assist managers so that they may have an opportunity to improve their facilitation skills.

Third, it should be noted that critical reflection on experiences and activities occurs with learning goals. Thus, organizations may encourage employees to think about goals that are associated with increasing their capabilities. A "team-learning orientation" (Bunderson & Sutcliffe, 2003) may inspire individual learning orientation. Through setting learning-related goals for the team, such as "generating innovative ideas," reviews and discussions within the team should lead to critical reflection. In addition, "learning-goal orientation training" (Noordzij et al., 2013) may be beneficial to enhance employees' learning goal levels.

Finally, managers must be convinced that an individual's performance orientation, or having goals to gain favorable judgments of their competence, can promote unlearning only if the goal is combined with reflection and critical reflection. Anseel et al. (2009) reported that feedback accompanied with reflection-enhanced performance, which is an important element within an individual's "performance appraisal". Therefore, it is significant for the HR department to design a performance appraisal system in which employees are given opportunities to reflect, and possibly to unlearn.

2.6.3 Limitations

The limitations of this study should be acknowledged. First, the scale was developed in this study based on Akgün et al.'s (2006) team unlearning scale because there was no measurement scale for individual unlearning. Thus, the validity and reliability of the scale should be tested in different contexts. Second, the sample in this study consisted of government employees, HRD trainers, and hospital nurses at Japanese organizations. It is possible that the national culture may have influenced the results. Thus, the research model should be tested by conducting surveys in various industries, geographics, and cultures. Third, this study examined the unlearning process at the individual level. There must be situational factors that influence the unlearning of employees. It would be interesting to explore how supervisors' behaviors affect individual unlearning. The subsequent chapters investigated the process of individual unlearning by addressing the above limitations. Specifically, the effects of reflection and critical reflection on unlearning were examined using survey data of US

employees in Chap. 3, whereas the influence of situational factors including supervisors' exploratory activities and promotion on individual unlearning were analyzed in Chaps. 4 and 5.

2.7 Conclusions

Organizational unlearning is often triggered by individuals (Zhao et al., 2013), while individual unlearning has been neglected in past studies (Hislop et al., 2014). The analyses in this chapter identified the mechanism by which goal orientations influence individual unlearning through reflective activities. Specifically, the findings indicated that individual unlearning was inspired only through critical reflection, which was promoted by reflection and learning goal orientation. The results suggested that organizations have to promote individual unlearning, not only by providing opportunities to critically reflect on employees' assumptions and practices, but also by linking their goals to reflective activities. These practices may enable organizations to engage in double-loop learning (Argyris, 1991) or exploration (March, 1991).

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Chapter 3
Critical Reflection, Unlearning, and Engagement

Above all, the effective executive will slough off an old activity before he starts on a new one.
(Drucker, 1967, p. 107)

3.1 Highlights

- The goals of this chapter are to confirm the mediating effect of critical reflection on the relationship between reflection and individual unlearning, and to examine the effect of individual unlearning on work engagement.
- Critical reflection mediates the relationship between reflection and unlearning.
- Individual unlearning enhances work engagement.
- Critical reflection plays an important role in promoting work engagement through individual unlearning.

3.2 Typical Case

The following is the case of an employee who reflected on and reviewed his work processes when he was transferred to an unfamiliar department.

> I had belonged to the Department of General Business Operation for ten years since I entered this firm. At the department, people adopted a work style of taking much time for planning and preparation before implementing tasks. However, after I was transferred to the department in charge of developing new businesses, I realized that the previous work style did not work. At that time, while I had a sense of crisis, I tried to improve my ability and performance for the team. Then, I deeply reviewed what was wrong in my work processes and thought out how to change them. Following high-performing superiors, I tried to adopt a work style of setting hypotheses at an early stage, and tried to test them again and again. The new style reduced unnecessary reworks and enhanced my productivity and the quality of my performance. Now, I feel worthy and satisfied with my work processes.

M. Matsuo, *Unlearning at Work*, SpringerBriefs in Business,
https://doi.org/10.1007/978-981-16-3799-5_3

This case indicates that transferring to a different department forced him to critically reflect on and change his previous work processes, which resulted in high work engagement.

3.3 Theoretical Background and Hypotheses

The results of Chap. 2 indicated that reflection promoted individual unlearning mediated through critical reflection using a survey data of employees in Japanese organizations. However, there is a possibility that the Japanese culture, which emphasizes the role of reflection in work and daily life, may affect the results. In addition, little is known about the effect of individual unlearning on work-related outcomes.

To address these problems, this chapter aims to replicate the findings on the influence of reflection on individual unlearning mediated through critical reflection, and to examine the relationship between critical reflection and work engagement. This study focused on work engagement as a consequence of individual unlearning because it is believed to be a very good predictor of important employee outcomes (Bakker & Albrecht, 2018).

As reviewed in Chap. 2, critical reflection works as a higher level of reflective activity by transforming an individual's meaning framework (Kember et al., 2000). That is, reflection corresponds to single-loop learning, which stresses problem solving and correcting errors, while critical reflection corresponds to double-loop learning, which questions existing values and assumptions for evaluating new ones (Argyris, 1976; Cunliffe, 2004). Based on the arguments, employees who critically reflect on their values and assumptions may be aware of obsolete beliefs and routines that need to be abandoned. Thus, it is predicted that critical reflection promotes unlearning.

Besides, reflection is not likely to have no direct influence on unlearning, as it focuses on the immediate details of tasks or problems (Gray, 2007; Raelin, 2001; Reynolds, 1998). However, reflection may promote critical reflection, because employees who frequently reflect on their tasks or problems should have more opportunities to identify the inappropriateness of their values or assumptions. That is, frequent reflection on work objectives or processes may serve as a basis for critical reflection on values or assumptions. Given the predicted relationship between critical reflection and unlearning, the following mediation hypothesis was suggested:

Hypothesis 3-1: Critical reflection partially mediates the relationship between reflection and unlearning.

As the consequences of unlearning, this study focused on work engagement defined as a positive, fulfilling, work-related state of mind characterized by vigor, dedication, and absorption (Schaufeli et al., 2002), for two reasons. First, work engagement has been shown to be a very good predictor of important employee outcomes, including job satisfaction, organizational commitment, innovative work behaviors, citizenship behaviors, and job performance (Agarwal, 2014; Bakker & Albrecht, 2018; Christian et al., 2011; De Clercq et al., 2014; Garrick et al., 2014;

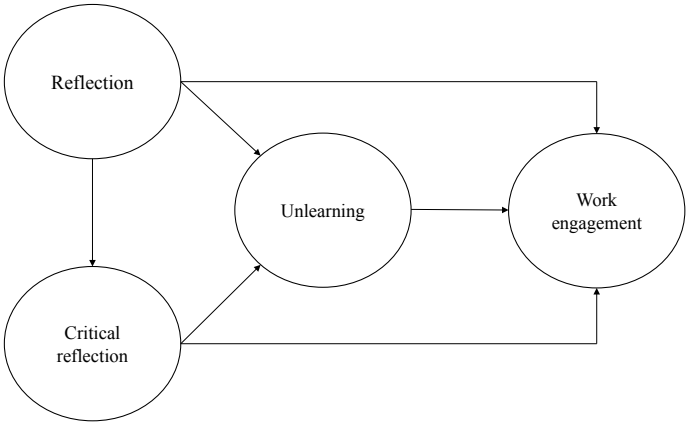

Fig. 3.1 Research model (Study2)

Lu et al., 2014; Reis et al., 2016; Schaufeli et al., 2006; Shantz et al., 2016). Second, it was found that work engagement is promoted by job crafting, or a self-initiated change to align one's responsibilities with one's preferences, motives, and passions (Bakker et al., 2012; Tims et al., 2012). Although job crafting does not necessarily involve questioning assumptions or beliefs, it may have similar characteristics with unlearning, because both are associated with changing elements of work. Thus, unlearning may promote work engagement by enhancing intrinsic motivation. Given Hypothesis 3-1 and the arguments, the following hypothesis was proposed:

Hypothesis 3-2: Unlearning partially mediates the relationship between critical reflection and work engagement.

Previous research found that self-reflection is positively associated with cognitive flexibility (Sauter et al., 2010) and subjective well-being through core self-evaluations or a basic appraisal of one's worthiness, effectiveness, and capability (Stein & Grant, 2014). Since work engagement is characterized by vigor, dedication, and absorption (Schaufeli et al., 2002), reflection may promote work engagement by inducing individuals to positively assess their capabilities. It is necessary to note, however, that reflection may have a weaker influence on work engagement, as reflection focuses primarily on solving problems rather than on posing problems (Gray, 2007; Raelin, 2001; Reynolds, 1998). Because "problem posing" may be promoted by the "problem-solving" activities, reflection may provide a fundamental basis for critical reflection. Based on the arguments, reflection may indirectly enhance work engagement mediated through critical reflection. Given Hypothesis 3-1, the following mediation hypothesis was suggested:

Hypothesis 3-3: Critical reflection partially mediates the relationship between reflection and work engagement.

Figure 3.1 shows the research model used in this chapter, which consists of the three mediation hypotheses proposed above.

3.4 Method

3.4.1 Sample and Data Collection

Data was collected using an online survey by a research company. Respondents were employees working for various organizations in the US who were registered in research pools managed by the company. Potential respondents in the pools were invited to participate in the survey, being informed that participation was anonymous and voluntary. Of the 867 questionnaires delivered, 622 usable questionnaires were returned. Because the research model had to be tested using data collected from employees with a certain amount of work experience in responsible positions, this study focused on full-time employees with more than five years of work experience by excluding responses from part-time, temporary, unemployed, and self-employed workers with less than five years of work experience. As a result of this selection, 301 responses were considered in the analysis. The final response rate was 34.7%.

An advantage of online survey-based procedure is to be able to collect data from employees who work for various kinds of organizations in different geographical locations (Ahn et al., 2007; Holland et al., 2013). Past studies using similar online surveys reported sufficient discriminant and convergent validity as well as high reliability (e.g., Ahn et al., 2007; Jiang, 2016; Parry et al., 2012).

The sample included 153 males (50.8%). The age distribution was as follows: 29 years and younger (18.6%), 30–39 (54.9%), and 40 years and older (26.5%). The mean organizational tenure was 6.50 years (SD = 4.57). With regard to education, 21.3% reported attendance at community college, 47.2% held bachelor's degrees, and 31.5% had postgraduate qualifications. Participants were employed in manufacturing (11.0%), service (58.1%), retail/wholesale (5.7%), and other (25.2%). Their responsibilities included sales (11.3%), administrative staff (43.2%), engineering (8.0%), research and development (R&D) (3.7%), production (7.6%), and other (26.2%). The sample consisted of staff (28.2%), supervisor/team leader (28.9%), junior manager (9.3%), middle-to-senior manager (27.2%), and executive officer (6.4%). The organizations for which respondents worked employed the following numbers of workers: 99 or fewer (29.2%), 100–499 (20.9%), 500–999 (14.0%), 1000–4999 (14.6%), 5000–9999 (10.0%), and 10,000 and more (11.3%).

3.4.2 Measures

Reflection. Seven items derived from West (2000) and Peltier et al. (2005) were used to measure reflection. The items are: "I often review my work objectives"; "I often reflect upon whether I am working effectively"; "I often review the methods I use to get the job done"; "I often review my approach to getting the job done"; "I often reappraise my experiences so I could learn from them"; "I often try to think about how I could do something better next time"; and "I explored my past experiences as a way of understanding new ideas." Respondents were asked to answer the questions on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree).

Critical reflection. Seven items derived from Peltier et al. (2005) and Kember et al. (2000) were used to measure critical reflection. Because these scales were developed for learning in higher education, the items were revised for learning at work. The items are: "I often rethink my assumptions about business"; "I try to explore further about myself"; "I like to rethink how I view the world"; "I often learn about my own learning process"; "I often review the way I look at myself"; "I sometimes challenge some of my firmly held ideas"; and "I often rethink my normal way of doing things." Respondents were asked to answer the questions on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree).

Individual unlearning. Eight items based on the team unlearning scale developed by Akgün et al. (2006) were used to measure unlearning. Respondents were asked to evaluate how much they had changed their beliefs (beliefs in technological improvements, external environment, and customer demand) and work routines (work methods or procedures, methods for gathering and sharing information, work plans, work tools, and decision-making processes or methods) during the past year by abandoning obsolete, outdated beliefs, or routines. Respondents were asked to answer the questions on a five-point Likert scale (1 = hardly changed, 5 = greatly changed).

Work engagement. A nine-item scale developed by Schaufeli et al. (2006) was used to measure work engagement. The items are: "At my work, I feel bursting with energy"; "At my job, I feel strong and vigorous"; "I am enthusiastic about my job"; "My job inspires me"; "When I get up in the morning, I feel like going to work"; "I feel happy when I am working intensely"; "I am proud of the work that I do"; "I am immersed in my work"; and "I get carried away when I am working." Respondents were asked to answer the questions on a five-point Likert scale (1 = never, 5 = always).

Social desirability. Six items derived from Paulhus (1991) were used to measure social desirability to prevent potential common method bias. The items are: "I never regret my decisions"; "I don't care to know what other people really think of me"; "I am fully in control of my own fate"; "I am very confident of my judgments"; "Once I've made up my mind, other people can seldom change my opinion"; and "It's all right with me if some people happen to dislike me." The average score for the

items was used for controlling the effect of social desirability on reflection, critical reflection, and unlearning. Respondents were asked to answer the questions on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree). In the analyses, the average scores of the items were used.

Control variables. Gender (1 = male, 2 = female), organizational position (1 = staff, 2 = supervisor/team leader, 3 = junior manager, 4 = middle-to-senior manager, 5 = executive officer), and age (1 = below 20, 2 = 20–24 years old, 3 = 25–29 years old, 4 = 30–34 years old, 5 = 35–39 years old, 6 = 40–44 years old, 7 = 45–50 years old, and 8 = 50 years or older) were included as control variables.

3.4.3 Validation of Measures

To assess internal consistency, Cronbach's α values were calculated. The α values for reflection, critical reflection, unlearning, work engagement, and social desirability were 0.89, 0.86, 0.94, 0.91, and 0.73, respectively, indicating that all the scores met the cut-off value of 0.70 (Nunnally, 1978).

A confirmatory factor analysis was performed with four latent constructs and a total of 34 items, to assess the convergent validity. The fit indices were: $\chi^2 = 632.05$ ($df = 428$, $p < 0.001$), $\chi^2/df = 1.48$, CFI = 0.96, SRMR = 0.044, and RMSEA = 0.040. These scores were acceptable, based on the cut-off value proposed in past research ($\chi^2/df < 2.0$; CFI > 0.90; SRMR < 0.08; and RMSEA < 0.06) (Hu & Bentler, 1999; Lance et al., 2006).

To check the common method variance, the following methods were conducted. First, Harman's one-factor method was performed. When a principal component factor analysis was conducted with items for all variables, the first factor accounted for 32.6% of the variance. Second, a partial correlation procedure (Lindell & Whitney, 2001) was performed. When the effect of a theoretically unrelated marker variable, an item ("I have a lot in common with the people around me") was partialed out from the relationships between reflection, critical reflection, unlearning, and work engagement, the partial correlation matrix was equivalent to the original correlation matrix. Third, a series of CFAs were performed. The results indicate that the fit indices of the four-factor model were better than those of the single-, two-, and three-factor models, suggesting that the effect of a common method bias was minimal in this study. Finally, social desirability has the potential to bias respondents' answers and mask true relationships between the variables (Podsakoff et al., 2003), it was included in the equation as a control variable to partial out its effects on the results.

Table 3.1 Descriptive statistics and correlations (Study 2)

Variable		Mean	Standard deviation	1	2	3	4	5	6	7	8
1	Gender	1.49	0.50	–							
2	Age	4.71	1.32	−0.06	–						
3	Position	2.54	1.32	−0.21***	0.15*	–					
4	Social desirability	3.54	0.67	−0.14*	−0.02	0.20**	(0.73)				
5	Reflection	4.08	0.64	−0.14*	0.02	0.24***	0.37***	(0.89)			
6	Critical reflection	3.83	0.65	−0.09	0.01	0.23***	0.43***	0.63***	(0.86)		
7	Unlearning	3.44	0.93	−0.14*	−0.03	0.27***	0.45***	0.46***	0.59***	(0.94)	
8	Work engagement	3.61	0.74	−0.14*	−0.06	0.29***	0.43***	0.47***	0.53***	0.58***	(0.91)

Notes Cronbach's α values are shown along the diagonal. Gender: 1 = male, 2 = female. Age: 1 ≤ 20, 2 = 20–24, 3 = 25–29, 4 = 30–34, 5 = 35–40, 6 = 40–44, 7 = 45–50, 8 ≥ 50. Position: 1 = staff, 2 = supervisor/team leader, 3 = junior manager, 4 = middle-to-senior manager, 5 = above senior manager. *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$

3.5 Results

Table 3.1 shows the descriptive statistics and correlations among variables. To test the proposed model and hypotheses, several analyses were conducted. First, to validate the hypothesized model, three models (direct-effects, partial-mediation, and full-mediation models) were tested using structural-equation modeling. The partial-mediation model involved both direct and indirect paths from reflection and critical reflection to work engagement, whereas the direct-effects model consisted of direct paths from the three variables (reflection, critical reflection, and unlearning) to work engagement. The full-mediation model excluded two paths (reflection → work engagement and critical reflection → work engagement) from the partial-mediation model. The results indicate that the fit index for the hypothesized partial-mediation model was better than the other two models. Considering the cut-off criteria (Hu & Bentler, 1999; Lance et al., 2006), the indices for the partial-mediation model indicate good adaptability ($\chi^2 = 762.29$, $df = 536$, $\chi^2/df = 1.42$, CFI = 0.96, SRMR = 0.042; RMSEA = 0.037), suggesting that the proposed model was valid.

Table 3.2 and Fig. 3.2 show the results of the proposed model (partial-mediation model). The results indicate a positive effect of reflection on critical reflection (0.63, $p < 0.001$), a positive effect of critical reflection on unlearning (0.54, $p < 0.001$), a positive effect of critical reflection on work engagement (0.23, $p < 0.05$), and a positive effect of unlearning on work engagement (0.33, $p < 0.001$).

To examine the hypothesized mediating relationships, the bootstrapping estimates using 1000 random samples were conducted with the 95% confidence interval (CI). The results show that the CIs for all three effects exclude zero (reflection → critical reflection → unlearning; 95% CI [0.24, 0.52]: critical reflection → unlearning → work engagement; 95% CI [0.10, 0.29]: reflection → critical reflection → work engagement; 95% CI [0.03, 0.27]), supporting Hypotheses 3-1, 3-2, and 3-3.

3.6 Discussion

This chapter aims to confirm the mediating effect of critical reflection on the relationship between reflection and individual unlearning, using a survey of US employees, and to investigate the effect of individual unlearning on work engagement. The results replicated the findings of Chap. 2 by showing that critical reflection mediated the effect of reflection on individual unlearning. The results also indicate that individual unlearning enhanced work engagement.

Table 3.2 Structural model estimates (Study 2)

Structural path			Standardized estimate	*t*-value
Reflection	→	Critical reflection	0.63	13.39***
Reflection	→	Unlearning	0.01	0.02
Critical reflection	→	Unlearning	0.54	6.74***
Reflection	→	Work engagement	0.10	1.31
Critical reflection	→	Work engagement	0.23	2.39*
Unlearning	→	Work engagement	0.33	4.86***
Control variables				
Social desirability	→	Reflection	0.35	6.53***
Social desirability	→	Critical reflection	0.20	3.94***
Social desirability	→	Unlearning	0.19	3.63***
Social desirability	→	Work engagement	0.12	2.28*
Gender	→	Reflection	−0.06	−1.03
Gender	→	Critical reflection	0.04	0.79
Gender	→	Unlearning	−0.04	−0.89
Gender	→	Work engagement	−0.04	−0.77
Age	→	Reflection	−0.01	−0.14
Age	→	Critical reflection	−0.02	−0.32
Age	→	Unlearning	−0.04	−0.87
Age	→	Work engagement	−0.08	−1.77
Position	→	Reflection	0.17	2.95**
Position	→	Critical reflection	0.06	1.27
Position	→	Unlearning	0.11	2.17*
Position	→	Work engagement	0.12	2.39*

Note *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$. CFI = 0.96, SRMR = 0.042; RMSEA = 0.037; $\chi^2/df = 1.42$

3.6.1 Theoretical Implications

There are three theoretical implications. First, as with the results of Chap. 2, unlearning was promoted by critical reflection but not by reflection. These results indicate that higher-order cognitive activities for examining taken-for-granted assumptions (Gray, 2007; Raelin, 2001), are critical for unlearning beliefs and routines at work, while reflecting on immediate tasks or problems has no direct influence on unlearning. As suggested in previous studies (Gray, 2007; Raelin, 2001; Reynolds, 1998), critical reflection may enable employees to replace or select their beliefs and routines by examining taken-for-granted assumptions, thus making them more receptive to alternative ways of thinking and behaving. It is important to note that the effect of critical reflection on unlearning is observed both in Japan and US data. The role of critical reflection in facilitating individual unlearning has been

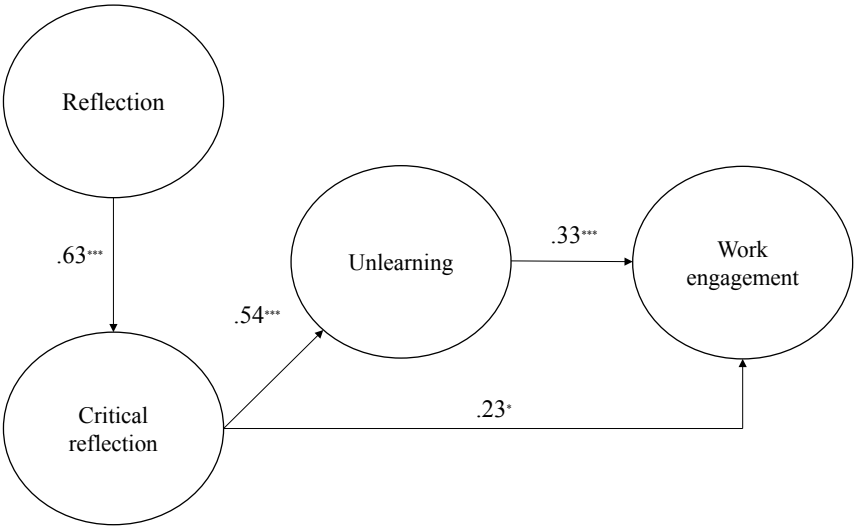

Fig. 3.2 Summary of results (Study 2). *Note* $*p < 0.05$, $***p < 0.001$. Only significant path are shown. Gender, age, positions, and social desirability were controlled in this model

examined qualitatively in the transformative learning research (e.g., Durant et al., 2016; Mezirow, 1990, 1991; Sherlock & Nathan, 2008), this study contributes to the existing literature by quantitatively confirming the insufficiently proven relationship using multi-cultural survey data.

Second, it was found that unlearning enhanced work engagement. As work engagement is a good predictor of employee outcomes (Bakker & Albrecht, 2018), the results indicate that unlearning plays an important role in promoting employees' well-being and performance. Past studies stated that unlearning must involve emotional challenges, stress, and anxiety (Cotter & Cullen, 2012; Visser, 2017), while intrinsic motivation stimulated by unlearning may overcome such negative psychological states. This study extends the literature by clarifying the consequences of individual unlearning, which has received less attention.

Third, the findings show that critical reflection directly enhanced work engagement, suggesting that employees can be engaged with their work without unlearning. This may be because employees' positive, fulfilling, work-related states of mind (Schaufeli et al., 2002) are stimulated by cognitive activity at a deeper level, including critiquing and raising questions regarding the validity of their assumptions (Mezirow, 1991). As work engagement constitutes a mode of intrinsic motivation (Demerouti et al., 2015; Reis et al., 2016), critical reflection may stimulate employees to be more deeply absorbed in their work. Although self-reflection has been found to promote individuals' well-being, cognitive flexibility, and positive self-evaluation (Sauter et al., 2010; Simsek, 2013; Stein & Grant, 2014), this study may be the first to find that deeper levels of reflection directly promote work-related well-being.

Finally, this study found that reflection facilitates unlearning and work engagement through *critical* reflection. Although past research has stressed the role of critical reflection in promoting employee learning and performance (e.g., Cunliffe, 2004, 2016; Gray, 2007; Mezirow, 1991, 1997), general reflection is actually a preparatory step for further critical reflection that facilitates unlearning and work engagement. The results correspond to the psychological research suggesting that self-reflection enhances cognitive flexibility (Sauter et al., 2010). That is, individuals can be aware of their taken-for-granted assumptions by reflecting on their methods or approaches in their daily work environment. This study contributes to the existing literature by showing the close linkage between reflection and critical reflection.

3.6.2 Practical Implications

The findings have some practical implications. First, to help employees engage in their work, organizations need to encourage them to abandon obsolete or outdated beliefs and work routines. It may then be beneficial to provide employees with training programs or workshops in which they reflect critically on their work approaches, to identify which beliefs or routines must be given up. "After-event reviews" may be effective for employees to reflect on their practices in the workplace (DeRue et al., 2012). In terms of balancing exploitation and exploration (Mom et al., 2007, 2015), participants need both to improve their work processes through general reflection and to unlearn beliefs and routines through critical reflection.

Second, it may be difficult for ordinary employees to conduct critical reflection, because they need to reassess taken-for-granted assumptions, which is implicit knowledge. Indeed, managers should be aware that general reflection tends to promote critical reflection. Specifically, if employees are engaged in periodical reflection of their work processes, they are likely to have opportunities to reflect critically on the frameworks or assumptions within their approaches. Thus, it is necessary for organizations to encourage managers to develop practices of periodic reflection on work during regular meetings or interviews. Such communication practices can be a basis for critical reflection at work.

Finally, formal training programs must also be developed to improve skills for appropriate reflection and unlearning. In particular, because critical reflection is closely associated with unlearning, such programs need to stress the connection. Specifically, in such programs, participants should learn how to reflect on the deeper levels of their beliefs and knowledge as well as how to identify obsolete and outdated ones that should be abandoned. As mentioned above, it is also important to train participants to balance exploration through unlearning and exploitation in terms of organizational ambidexterity (Lavie et al., 2010; Raisch & Birkinshaw, 2008; Raisch et al., 2009).

3.6.3 Limitations

As with the results of Chap. 2, it is possible that external or situational factors affect critical reflection and unlearning. Thus, it is important to examine the effect of situational factors, such as leadership (Greve, 1998; Silverman et al., 2005), on individual unlearning. With regard to this problem, the effect of supervisors' behaviors on subordinates' learning goal orientation, reflection, and unlearning are examined in the next chapter.

3.7 Conclusion

This chapter aimed to confirm that reflection promotes individual unlearning mediated through critical reflection, using a survey of employees working in US organizations. Consistent with the results in Chap. 2, it was found that critical reflection mediated the relationship between reflection and unlearning. In addition, critical reflection directly and indirectly promoted work engagement through unlearning. These findings suggest the important role of critical reflection in the individual unlearning process across cultures. In the next chapter, the influence of supervisors' behaviors on subordinates' learning goal orientation, reflection, and unlearning are explored.

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Chapter 4
Managers' Exploration Activities and Individual Unlearning

How can I understand unless someone explains it to me?
(New Testament. Acts of the Apostles, Chapter 8, Verse 31)

4.1 Highlights

- The main goal of this chapter is to investigate the influence of managers' exploration activities on the learning goal orientation, reflection, and unlearning of team members.
- Managers' exploration activities promote team members' learning goal orientations, which subsequently promote their unlearning, with or without the mediation of reflection.
- The results suggest that subordinates' unlearning is driven by managers' activities through motivational and cognitive processes.

4.2 Typical Case

The following is the case of a female employee in the Department of Public Relations, who changed her work style under the influence of her new supervisor.

> In the Department of Public Relations, there was a policy in which we should check the details of the communiques before presenting them for publication. However, the policy changed after a new department head came into position. He emphasized the importance of devising headings and the main body of the communiques so that journalists and readers can easily understand. Under this transformation, I changed my mindset so that I took priority to take my own initiatives to propose suggestions rather than receiving approval from others. As a result, it became much easier for me to receive approval from the company. In addition, the new policy can maximize the effect of our communiques by printing articles and appearances in the media.

M. Matsuo, *Unlearning at Work*, SpringerBriefs in Business,
https://doi.org/10.1007/978-981-16-3799-5_4

This case shows that her learning motivation was activated by the influence of an innovative superior, who encouraged her to review the style of public relations.

4.3 Theoretical Background and Hypotheses

The results of Chaps. 2 and 3 confirmed that reflection promotes individual unlearning mediated through critical reflection, using survey data of employees in Japanese and US organizations. However, few studies have investigated the effect of supervisors' behaviors on subordinates' unlearning.

To address this research gap, this chapter focuses on managers' exploration activities (Mom et al., 2007, 2015), drawing on March's (1991) exploitation–exploration model, which has dominated organizational analyses of diverse topics (Gupta et al., 2006). Because managers' exploratory activities include experimenting with new business approaches and reconsidering existing beliefs and decisions (Mom et al., 2007), such activities may directly and indirectly influence subordinates' unlearning through their learning goal orientation and reflective activities.

This chapter contributes to the existing literature by revealing the effect of manager behaviors on individual unlearning processes, an aspect that has been absent in past studies. In this chapter, multi-level analyses of survey data were used to examine how managers' exploration activities can indirectly enhance team members' unlearning through the mediating effects of learning orientation and reflection. Critical reflection was not included in the research model because its measurement did not have sufficient reliability and validity in the analyses.

4.3.1 Reflection and Learning Goal Orientation

As discussed in previous chapter, individuals need to reflect on their practices to be aware that certain knowledge and skills are obsolete. Employees who periodically review their work objectives or efficiency of work methods or approaches are likely to be aware that occupational routines are not always effective for solving certain problems. Therefore, the following hypothesis was proposed:

Hypothesis 4-1: Reflection is positively related to unlearning.

As shown in Chap. 2, reflective activities may be stimulated or driven by learning orientation. Past studies suggest that learning goal orientation may promote reflection by enhancing intrinsic motivation for self-improvement and self-regulation (Bouffard et al., 1995; Ford et al., 1998; Hirst et al., 2009; Janssen & Prins, 2007). That is, employees who have high learning goals are likely to reflect on their work practices for their personal growth and improvement. Therefore, the following hypothesis was proposed:

Hypothesis 4-2a: Learning goal orientation is positively related to reflection.

As learning goal orientation is characterized by challenge seeking, acquisition of knowledge, and mastery of uncertain environments (Porter et al., 2010), such "challenge-seeking behaviors" may direct employees to replace old knowledge and skills with new ones to improve their capabilities, enable them to take on further challenging tasks. Thus, the following hypothesis was proposed:

Hypothesis 4-2b: Learning goal orientation is positively related to unlearning.

4.3.2 Managers' Exploration Activities

In researching for the influence of a manager's activities on subordinates' unlearning, this chapter focuses on the role of the manager's style of exploration. The concept of "exploration" was originally studied at the organizational level. The exploration and exploitation trade-off (March, 1991) has been a central part of the discourse in organization studies (Fang & Levinthal, 2009). Although both exploitation and exploration are types of learning, the former focuses on the refinement and extension of existing knowledge, whereas the latter involves attempts to obtain new knowledge through experimentation (Gupta et al., 2006; Laze & Friedman, 2007; March, 1991). Specifically, organizations focusing on exploitation tend to build on existing knowledge resources and extend existing products and services for current markets, while organizations stressing exploration are inclined to pursue new knowledge and develop products and services for potential customers and markets (Jansen et al., 2009). Past studies suggested that many firms overemphasize exploitation at the expense of exploration as exploitation provides immediate and certain returns (Fang et al., 2010).

The notions of exploration and exploitation have been studied at various levels of analysis, including the individual, group, organizational, inter-organizational, and industry levels (Lavie et al., 2010), while limited studies have examined personal ambidexterity (Bonesso et al., 2014). The study of this chapter is built on the works of Mom et al., (2007, 2009, 2015), which investigated exploration and exploitation at the managerial level. They stated that managers' exploration activities consist of searching for new organizational norms and routines, experimenting with new approaches to technologies, business processes, or markets, and reconsidering existing beliefs and decisions. In contrast, managers' exploitation activities include using and refining existing knowledge, and then applying it, improving it, and extending current competences, technologies, processes, and products, and finally elaborating on existing beliefs and decisions. Mom et al. (2007) reported that managers' exploitation activities are related to top-down knowledge inflows, while managers' exploration activities are associated with bottom-up and horizontal knowledge inflows. The results indicate that managers who focus on exploration tend to encourage their subordinates to generate and share knowledge within a unit. Mom et al. (2015) also reported that managers' ambidexterity promotes performance when work context is uncertain and interdependent.

Of the two types of activities, this chapter examined the role of managers' exploration activities in promoting subordinates' learning goal orientation, reflection, and unlearning in the following ways: First, as manager's exploration activities include searching for new knowledge, subordinates may selectively absorb such learning-oriented preferences through social learning processes (Bandura, 1977), assuming that individual behavior is determined by a person's motivation to learn from important role models. Accordingly, Lam et al. (2010) reported that middle managers become role models for market-oriented behavior among frontline employees. Therefore, the following hypothesis was proposed:

Hypothesis 4-3a: Managers' exploration activities are positively related to members' learning goal orientation.

Second, a manager's exploration activities, usually conducted by transformational leaders (Jansen et al., 2009), stress searching for new possibilities and experimenting with new approaches on the job; therefore, such activities may stimulate members to reflect on their work processes. Hammedi et al. (2011) found that transformational leadership was positively associated with team reflexivity, suggesting that transformational leaders promoted reflexivity by facilitating discussion and evaluation of procedures, criteria, and tools. As exploration activities are closely related to transformational leadership in terms of providing intellectual stimulation, the following hypothesis was proposed:

Hypothesis 4-3b: Managers' exploration activities are positively related to members' tendencies toward reflection.

Third, since managers who engage in exploration activities emphasize the reconsideration of current beliefs and decisions, it may simultaneously encourage members to further examine whether some beliefs and knowledge should be deemed obsolete. Such stress may cause members to adjust themselves according to managers' behaviors without reflection. Therefore, the following hypothesis was generated:

Hypothesis 4-3c: Managers' exploration activities are positively related to members' unlearning.

These three hypotheses suggest that managers' exploration may influence subordinates' unlearning through the social learning of goals, stimulation of reflection, and adjustment through inducement. It is crucial to examine the types of relationships that exist between managers' exploration activities and subordinates' unlearning behaviors.

4.3.3 Indirect Effects

The research model shown in Fig. 4.1 suggests that there are the following three mediating relationships among variables: (1) manager's exploration activities → learning goal orientation → individual unlearning; (2) manager's exploration activities →

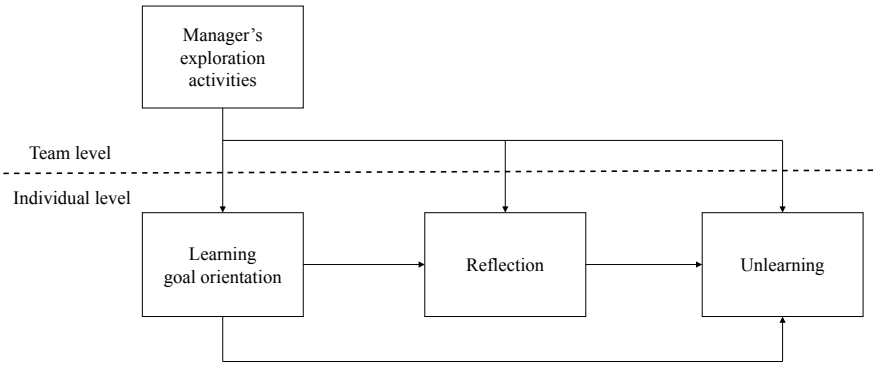

Fig. 4.1 Research model (Study 3)

reflection → individual unlearning; and (3) learning goal orientation → reflection → individual unlearning.

The first relationship indicates that learning goal orientation mediates the effect of managers' exploration activities on unlearning. The rationale for this relationship is that employees may absorb learning-oriented preferences from role-model managers (Lam et al., 2010) who engage in exploration activities, and that highly learning-oriented employees are likely to seek challenges for acquiring knowledge and achieving high performance goals (Dweck & Leggett, 1988; Porter et al., 2010), which may lead to unlearning. Because multiple paths were hypothesized between managers' exploration activities and individual unlearning, the indirect effect is partial. Thus, the following hypothesis was generated:

Hypothesis 4-4a: Managers' exploration activities have a partial and positive indirect effect on individual unlearning through learning goal orientation.

The second indirect relationship suggests that reflection mediates the relationship between manager's exploration activities and individual unlearning. That is, managers who engage in exploration activities may promote members' reflexivity by providing intellectual stimulation, or by stimulating discussion and evaluation of present work processes (Hammedi et al., 2011; Jansen et al., 2009); such reflection may then change the employees' frame of reference (Mezirow, 1997), resulting in abandoning obsolete knowledge and skills. Thus, the following hypothesis was proposed:

Hypothesis 4-4b: Managers' exploration activities have a partial and positive indirect effect on individual unlearning through reflection.

The third indirect relationship indicates that reflection mediates the relationship between learning goal orientation and unlearning. This can be rationalized that learning goal orientation may promote reflection by activating self-regulation (Bouffard et al., 1995) and metacognitive activities (Ford et al., 1998), inspiring employees to change their frame of reference (Mezirow, 1997), which subsequently results

in unlearning behaviors. As the direct effect of learning goal orientation on individual unlearning was hypothesized (Hypothesis 4-2b), the indirect effect is partial. Therefore, the following hypothesis was proposed:

Hypothesis 4-4c: Learning goal orientation has a partial and positive indirect effect on individual unlearning through reflection.

4.3.4 Research Model

Based on the hypotheses described above, the research model is shown in Fig. 4.1, positing that a manager's exploration activities directly and indirectly influence team members' unlearning through their learning goal orientation and reflection. This framework suggests that manager behaviors have an influence on their team members' situational goal preferences, practices of reviewing work processes, and changes in beliefs and work routines. Since the model involves both team-level (managers' exploration activities) and individual-level (learning goal orientation, reflection, and unlearning) factors, a multi-level analysis that simultaneously examined factors at both levels was adopted.

4.4 Methodology

4.4.1 Participants and Procedure

The data were collected from a medium-sized Japanese pharmaceutical company that is part of an affiliated organization of a large-scale pharmaceutical company in Japan. Questionnaires were delivered using the online system to 147 employees by the head office of the organization. The response rate was 78.2%, with 115 usable responses. Respondents belong to 23 teams in seven departments. Respondents who work for sales departments made up 59.7% of the sample, whereas others work for administrative departments, including human resources, customer services, procurement, and product security. The average number of respondents per team was 6.20 (SD = 2.63). The sample was 79.8% male. The age distribution was as follows: 29 years and younger (6.2%), 30–39 (17.1%), 40–49 (28.7%), 50–59 (42.6%), and 60 years and older (5.4%). The rank distribution was as follows: staff (20.9%), junior manager (33.3%), middle manager (31.0%) and others (14.8%).

4.4.2 Measures

Since this study used the existing measures adapted from previous studies, back-translation was performed to minimize discrepancies between the original and the translated questionnaires. First, I translated the English version of the questionnaire into Japanese. Then, a bilingual language professional back-translated this version into English. If the back-translation was not equivalent to the original items, the translated Japanese items were revised.

Managers' exploration activities. Managers' exploration activities were assessed using the five-question scale developed by Mom et al. (2007). Team members rated their superiors' exploration activities using a five-point scale (1 = strongly disagree, 5 = strongly agree). Sample items are: "Searching for new possibilities with respect to products/services, processes or markets" and "Evaluating diverse options with respect to products/services, processes or markets". Cronbach's alpha was 0.84.

Individual unlearning. Individual unlearning was evaluated by using a modified scale of team unlearning developed by Akgün et al. (2006). Individual unlearning during the past year was assessed by three items relating to belief changes, and three items relating to routine changes. Changes in beliefs about the following areas were addressed: "technological improvements", "the external environment", and "customer demand". Changes in routines related to the following were addressed: "work methods or procedures", "methods for gathering and sharing information", and "decision-making process or methods". Items were rated on a five-point scale (1 = hardly changed, 5 = greatly changed), $\alpha = 0.79$, and the average scores on the items were used in the analyses.

Learning goal orientation. Individual learning goal orientation was assessed with respect to the following five items, which were drawn from Vandewalle (1997) and Bunderson and Sutcliffe (2003): "I look for opportunities to develop new skills and knowledge"; "I like challenging and difficult assignments that teach new things"; "I like to work on things that require a lot of skill and ability"; "I am willing to take risks on new ideas in order to find out what works"; and "I see learning and developing skills as very important." Items were rated on a five-point scale (1 = strongly disagree, 5 = strongly agree), $\alpha = 0.91$, and the average scores on the items were used in the analyses.

Reflection. Individual reflection was assessed with five items derived from West (2000). The items are: "I often review my work objectives"; "I often reflect upon whether I am working effectively"; "I often review the methods I use to get the job done"; "I modify my work objectives in the light of changing circumstances at work"; and "I often review my approach to getting the job done." Each item was measured on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree). Cronbach's alpha was 0.83. The scores for each item were used as observable variables.

Control variable. As control variables, this study included dichotomous dummy variables for gender (1 = female; 2 = male), job type (1 = administrative staff; 2 =

sales staff), team size, and age (1 = 20s, 2 = 30s, 3 = 40s, 4 = 50s, 5 = over 60s) in the equation.

4.4.3 Validation of Measures

To evaluate within-team agreement on managers' exploration activities, the intra-class correlation coefficient $r_{wg(j)}$ was calculated (James et al., 1984). Between-team variance for managers' exploration activities was significant ($F = 2.77$, $p < 0.001$). The $r_{wg(j)}$ averaged 0.92, which was greater than the cut-off score of 0.70 (George, 1990). In addition, the inter-class correlation coefficients (ICC1 and ICC2) were assessed. The ICC1 value was 0.26, which was greater than the cut-off score of 0.12 (James, 1982), whereas the ICC2 value was 0.64, which was greater than the cut-off score of 0.50 (LeBreton & Senter, 2008). The scores indicate that the team members had relatively uniform perceptions of managers' exploration activities.

To assess the convergent validity of the model constructs, a confirmatory factor analysis (CFA) was performed with four latent learning constructs (managers' exploration activities, learning goal orientation, reflection, and individual unlearning) and all 22 items. The results showed that all items loaded significantly on the respective constructs; the goodness-of-fit statistics for the model were as follows: $\chi^2/df = 1.64$, comparative fit index (CFI) = 0.91, standardized root mean square residual (SRMR) = 0.07, and root mean square error of approximation (RMSEA) = 0.07. Considering the cut-off value criteria ($\chi^2/df < 2.0$; CFI > 0.90; RMSEA < 0.06; and SRMR < 0.08) (Hu & Bentler, 1999; Lance et al., 2006), the fit indices of the model were acceptable.

4.4.4 Assessment of Common Method Bias

As the data were collected from self-reported questionnaires from a single source, there is a possibility that the results suffer from common method bias. To assess the likelihood of this bias, the following two diagnostic analyses were conducted. First, Harman's one-factor test was performed. This method assumes that a substantial amount of common method variance is present if a single factor emerges from a factor analysis, or one general factor accounts for the majority of the covariance among the measures (Podakoff et al., 2003). A principal component factor analysis was performed on question items for all the variables, including control variables, and seven factors were extracted. Factor 1 accounted for 27.9% of the variance, suggesting that there was no serious common method bias in the results. Additionally, the partial correlation procedure (Lindell & Whitney, 2001) was performed. An item of the revised UCLA loneliness scale (Russell et al., 1980) was used as the theoretically unrelated marker variable to partial out from the relationships between studied constructs. As the original correlations matrix between variables was found

to be similar to the partial correlation matrix, common method bias may not affect the results.

4.5 Results

Table 4.1 presents distractive statistics and correlations among the variables under study, with the individual scales at level 1, and team size and managers' exploration activities measured at level 2. The results of multi-level analyses are reported in Table 4.2. Team size, gender, age, and job type were controlled in the analyses. As predicted by Hypothesis 1, reflection had a positive effect on individual unlearning ($\gamma = 0.34$, $p < 0.001$). The results show that learning goal orientation had a positive effect on reflection ($\gamma = 0.45$, $p < 0.001$) and unlearning ($\gamma = 0.23$, $p < 0.01$), which support Hypotheses 4-2a and 4-2b. Hypotheses 4-3a, 4-3b, and 4-3c predicted that managers' exploration activities would be positively related to learning goal orientation (3a), reflection (3b), and unlearning (3c). The effect of managers' exploration activities was significant for learning goal orientation ($\gamma = 0.36$, $p < 0.05$), but it was not significant for reflection ($\gamma = 0.13$, *n.s.*) and unlearning ($\gamma = 0.09$, *n.s.*). Therefore, the results support Hypothesis 4–3a, but do not support Hypotheses 4-3b and 4-3c.

To examine three indirect effects, the Sobel test (Sobel, 1982) was performed (MacKinnon et al., 2002). The results suggest that the partial and positive indirect effect of a manager's exploration activities on unlearning through learning goal orientation was significant (1.77, $p < 0.05$), while the partial and positive indirect effect of a manager's exploration activities on unlearning through reflection was not significant (1.22, *n.s.*). The results also showed that the partial and positive indirect effect of learning goal orientation on unlearning through reflection was significant (3.48, $p < 0.001$). Thus, Hypotheses 4-4a and 4c were supported, while Hypothesis 4-4b was not supported (Fig. 4.2).

4.6 Discussion

This chapter investigated the individual unlearning process in terms of managers' exploration activities, learning goal orientation, and reflection. The results suggest that managers' exploration activities promoted individual unlearning through the mediating effects of learning goal orientation and reflection. This implies that subordinates' unlearning was stimulated by managers' exploration activities mediated through motivational and cognitive processes. Considering the current, relatively limited research on individual unlearning and managers' exploration activities, the results may be valuable theoretical and practical contributions to existing literature.

Table 4.1 Descriptive statistics and correlations (Study 3)

Variable		Level	Mean	Standard deviation	1	2	3	4	5	6	7	8
1	Team size	2	6.20	2.63	–							
2	Gender	1	1.81	0.40	0.18*	–						
3	Age	1	3.25	1.03	0.04	0.50***	–					
4	Job type	1	1.62	0.48	0.42***	0.17	−0.14	–				
5	Exploration activities	2	3.57	0.56	−0.16	−0.13	−0.08	−0.06	(0.81)			
6	Learning goal orientation	1	3.80	0.68	0.15	0.13	−0.04	0.10	0.22*	(0.91)		
7	Reflection	1	3.76	0.50	0.12	0.05	−0.10	0.06	0.25**	0.63***	(0.83)	
8	Unlearning	1	3.62	0.51	0.07	0.15	0.03	0.20*	0.32***	0.54***	0.54***	(0.78)

Notes Cronbach's α values are shown along the diagonal. Reliabilities are reported along the diagonal. Gender: 1 = female, 2 = male. Age: 1 = 20s, 2 = 30s, 3 = 40s, 4 = 50s, 5 = over 60s. Job type: 1 = administrative, 2 = sales. *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$

Table 4.2 Results of multi-level analyses (Study 3)

Variable	Learning goal orientation	Reflection	Unlearning
	γ	γ	γ
Team level			
Manager's exploration activities	0.36*	0.13	0.09
Individual level			
Learning goal orientation		0.45***	0.23**
Reflection			0.34***
Control variables			
Team size	0.04	0.01	−0.01
Gender	0.31	0.02	0.05
Age	−0.09	−0.04	0.04
Job type	0.01	−0.03	0.21*

Notes *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$

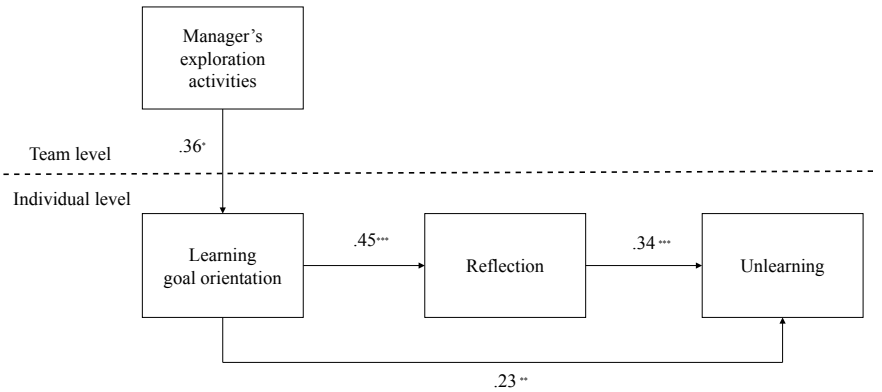

Fig. 4.2 Summary of results (Study 3). *Note* *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$. Only significant paths ($p < .05$) are shown. Team size, gender, age, and job type were controlled

4.6.1 Theoretical Implications

The findings of this chapter provide meaningful theoretical contributions regarding the individual unlearning process in two important areas. First, the results indicate that there was no direct impact of managers' exploration activities on unlearning, whereas learning goal orientation and reflection mediated between managers' exploration activities and unlearning. The findings suggest that the exploration activities of managers, which include searching for new routines and experimenting with new approaches to business processes (Mom et al., 2007, 2009), may stimulate members' desires or concerns for increasing their own competence (Dweck & Leggett, 1988),

leading to reflective activities. In other words, subordinates may set higher learning goals through social learning processes (Bandura, 1977) in which managers become role models. This is consistent with Lam et al.'s (2010) findings that middle managers can become role models of market orientation to frontline employees. Considering that there are only limited empirical studies on managers' exploration activities (e.g., Abebe & Angriawan, 2014; Mom et al., 2007, 2009), the findings contribute to existing literature by clarifying the mechanisms by which managers' exploration activities influence members' unlearning.

Second, the results indicate that there are two paths from learning goal orientation to unlearning: direct and indirect, through reflection. That is, unlearning may be driven by both motivational and cognitive factors. The direct effect implies that learning goal orientation emphasizing "seeking challenges" (Dweck & Leggett, 1988; Gong et al., 2009) intrinsically motivates members to discard obsolete knowledge and skills for acquiring new ones. Regarding the findings, Hirst et al. (2009) reported that learning goal orientation enhanced the intrinsic motivation to acquire and improve skills.

On the other hand, the indirect effect indicates that unlearning is cognitively inspired by learning goal orientation, which facilitates members' reflection on their work processes. Learning goal orientation may promote reflection because the learning goals are closely associated with self-improvement (Janssen & Prins, 2007), self-regulation (Bouffard et al., 1995), and metacognitive activities (Ford et al., 1998). As previous studies suggested, employees with high learning goals tend to seek challenging tasks. To effectively meet these challenges, employees are required to regulate themselves and use metacognition, which may lead to reflection about the kind of knowledge and skills that should be retained or purged. It is notable that unlearning is facilitated by both reflective and non-reflective activities.

4.6.2 Practical Implications

The findings of this chapter have several practical implications. First, managers need to be aware that their exploration activities cannot directly stimulate members to unlearn their work processes and that the only way to promote unlearning is through enhancing learning goal orientation. In particular, managers should help subordinates absorb learning-oriented beliefs by demonstrating exploratory activities. Managers also need to be educated via training programs to learn methods for enhancing their exploration activities, which can influence employees' learning goal orientation.

Second, organizations should note that learning goal orientation plays a key role in promoting individual unlearning. It may be beneficial for organizations to assess the learning goal orientation of job candidates and use the data for selecting new employees. In addition, periodical internal surveys are effective in monitoring employees' learning goal orientation and giving feedback to them for improvement. By hiring and developing employees with high learning goals, organizations can activate unlearning in the workplace.

Third, managers should note that unlearning is promoted by reflection. Thus, it is critical to provide employees with opportunities to reflect on their work processes and unlearn obsolete and outdated knowledge. There are several methods for facilitating members' reflection, including periodical personal interviews, review meetings, workshops, and journals. "After-event reviews," proposed by DeRue et al. (2012), are also interesting approaches to promote reflection at work. Such reflective practices may be effective for employees to examine which knowledge and skills should be retained or abandoned during reflection.

4.7 Conclusion

This chapter explored the effect of managers' activities and behaviors on employees' unlearning, which was not examined in Chaps. 2 and 3. The results showed that managers' exploration activities promoted team members' learning goal orientations, which directly and indirectly facilitated their unlearning through reflection. The findings suggest that team members' unlearning is stimulated by managers' exploratory activities through motivational and cognitive processes. In the next chapter, the influence of promotion on executives' unlearning is examined using qualitative analyses.

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Chapter 5
The Unlearning of Managerial Skills: A Qualitative Study of Executive Officers

Sacrifice oneself for the good of the majority others.
(Kamiya, 1966, p. 260)

5.1 Highlights

- The goal of this chapter is to qualitatively investigate the managerial unlearning process during promotion from senior manager to executive officer, based on the upper echelons perspective and leadership pipeline model, using interview data from 46 executive officers.
- The results indicate that they unlearn and learn their managerial skills in relation to "decision-making," "delegation and motivation," and "collecting information," and that the unlearning process is discontinuous.
- Specifically, decision-making skills are transformed from "short-term, analytic, and partial" to "long-term, intuitive, and holistic." Skills in delegation and motivation are switched from "directive" to "dedicated and entrusting." Skills in collecting information are changed from "direct collection" to "network-based collection."

5.2 Typical Case

The following is the case of the manager of a manufacturing firm who unlearned his management style after being promoted from senior management to an executive position.

> When I was a senior manager, my management style was to focus on the tasks at hand and to try to commit myself to every single point within the unit. However, this approach does not work in executive positions. It is important for us to have a clear vision from a holistic and long-term viewpoint, place the right people in the right posts, entrust them, and

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> prepare ourselves for any consequential responsibility. Besides, as executives always seem to be isolated from subordinates within the organization; we should attempt to build external networks with wise men and elites within the industries, in order to gather information on multiple sources, so as to establish our confidence and non-collapsible axis.

This case suggests that the executive officer discarded the previous management skills that he used in his senior management position and adopted a new approach that involves "a clear vision from a broad viewpoint," "entrusting subordinates," and the "establishment of external networks."

5.3 Theoretical Background and Research Question

As discussed in previous chapters, individual unlearning is necessary for unlearning at the organizational level, because organizations ultimately learn via their members (Kim, 1993). In particular, unlearning is critical for top executives because they have a strong influence on organizational performance through their values, personalities, behaviors, and the strategic choices, as suggested by the upper echelons perspective (Hambrick, 2007; Hambrick & Mason, 1984). Therefore, the success of organizational unlearning depends on the top management team, because enacting such changes requires decision-making authority (Hutzschenreuter et al., 2012).

Despite its importance, the individual unlearning process in the upper echelons has been neglected in past studies (Hislop et al., 2014; Klein, 1989). Previous research on executive managers' capabilities have examined necessary skills and capabilities for their positions (e.g., Adner & Helfat, 2003; Helfeat & Peteraf, 2015; Kor & Mesko, 2013). However, few studies have investigated the transition in managerial skills from senior managers to executive directors, during which they are required to transform their skills substantially, because executive directors typically have to handle multiple businesses (Charan et al., 2001). Although some models of managerial skills and capabilities have been proposed (Adner & Helfat, 2003; Katz, 1955; Mintzberg, 1973), differences in managerial skills between senior management and executive levels have not been explored sufficiently. The purpose of this chapter was to investigate the unlearning process of managers by comparing their managerial skills before and after their promotions to executive positions, using interview data with male managers at medium- and large-sized Japanese firms.

5.3.1 Upper Echelon and Pipeline Model

The upper echelon perspective postulates that top executives affect organizational performance through their personal characteristics and behaviors (Hambrick, 2007; Hambrick & Mason, 1984; Sosik et al., 2012), and that top management teams collectively possess the skills that influence their performance (Coad & Timmermans, 2014). Therefore, the capabilities of executive officers to unlearn may have a

major impact on organizational unlearning, as they have decision-making authority to enact and acknowledge changes in organizational routines (Hutzschenreuter et al., 2012). Changes in managers' frames of reference and mental models can stimulate exploration that enriches innovation (Zahra et al., 2011). Vera and Crossan (2004) stated that this mode of leadership on the part of CEOs and executive officers facilitates learning that challenges institutionalized learning. Despite the importance of the executive officers' unlearning, there are few empirical studies that analyze how executive managers unlearn and what factors may influence such unlearning.

According to the leadership pipeline model proposed by Charan et al. (2001), executive officers need to unlearn, especially after being promoted from senior manager positions. This model postulates that there are six leadership passages or transitions, especially in large organizations: (1) from managing self to managing others; (2) from managing others to managing managers; (3) from managing managers to functional manager; (4) from functional manager to business manager; (5) from business manager to group manager; and (6) from group manager to enterprise manager. The leadership pipeline model has some support in academic literature (Kaiser, 2011).

Charan et al. (2001) stated that each passage requires managers to acquire a new way of managing and to leave old ways behind. As this chapter focused on the learning processes of executive managers, passages five and six are described here briefly, based on Charan et al. (2001). At passage five, when a manager is promoted from business manager to group (executive) manager, he or she needs to be aware of valuing the success of other employees and helping them and businesses to succeed. If a group manager does not value the success of others, he or she may fail to inspire and support the performance of the business managers who report to him or her. A group manager also has to help the development of business managers using coaching skills. During the sixth passage, there is a subtle but significant shift in his/her responsibilities, from strategic to visionary thinking, and from an operations perspective to a global one. This is why this chapter focused on the unlearning of managerial skills during this passage. The new leadership role requires managers to have well-developed external sensitivities including managing external constituencies, sensing significant external shift, and doing something about such insights proactively. To negotiate any career crossroad effectively, managers-in-transition need to decide which elements in their previous role they should omit or minimize, preserve or continue to use, and supplement or do more or better (Freedman, 2011). Although the roles of new positions require managers to transform, upgrade, and refine their skills, most of them tend to stick with previous, but no longer appropriate, skills.

Reviewing the literature, Meuse et al. (2011) pointed out that there are two perspectives on management transition: the continuous versus the discontinuous. The continuous or continuity perspective assumes that all levels of effective leaders need to possess the same behavioral repertoire, and that promotion requires managers to perform more of those behaviors. Conceivably, the assumption suggests that managerial skills used at the level of lower positions can be applicable to the tasks of higher positions, and that managers need to periodically brush up their skills when they are promoted. In contrast, the discontinuity perspective posits that leadership behavior positively related to effectiveness at a lower level may become negatively related to

effectiveness at higher levels. Thus, managers have to stop performing those behaviors that are not contributing to effectiveness after being promoted (Meuse et al., 2011). Obviously, the leadership pipeline model (Charan et al., 2001) adopts the discontinuity perspective of management transition.

Notably, Kaiser and Craig (2011) found that managerial behaviors associated with effectiveness were different at the bottom, middle, and top and that these differences were often discontinuous, reflecting qualitative differences by level. Specifically, middle manager effectiveness is a function of more directive and less empowering leadership, whereas executive effectiveness is characterized by more empowering and less directive leadership. The findings support the leadership pipeline model and discontinuity perspective of management transition. Dai et al. (2011) also reported that when managers move to different position levels in an organization, the requirement for successful job performance changes. The results correspond to the pipeline model, suggesting that managers must unlearn obsolete skills and learn new ones to be effective in new positions. However, previous studies have only focused on interpersonal skills, and thus further investigations are necessary to comprehend cognitive and decision-making perspectives.

5.3.2 Managerial Skills of Executive Officers

There are two traditional models that have been often used in research on managerial roles or skills. One is Katz's (1955) model of managerial skills, and the other is Mintzberg's (1971, 1973) model of managerial roles. Recently, a newer model, "dynamic managerial capabilities" (Adner & Helfat, 2003), has attracted attention in the strategic management literature. These three models are reviewed here.

Katz (1955) classified managerial skills into technical, human, and conceptual skills. Technical skill refers to proficiency in a specific kind of activity, such as methods, processes, procedures, or techniques. Human skill involves the ability to work effectively as a group member and to build cooperative effort within the team. Conceptual skill is the ability to recognize how the various functions of the organization depend on one another, and how changes in any one part affect the others. According to Katz (1955), conceptual skill becomes increasingly critical in more responsible executive positions.

Based on Katz's (1955) model, Dierdorff et al. (2009) suggested that there are three general categories of managerial work role requirements: technical/administrative; interpersonal; and conceptual requirements. Technical/administrative requirements involve managerial work dealing with the traditional functions of business, whereas interpersonal requirements include interacting, influencing, and leading others. Conceptual requirements involve knowledge, skills, characteristics, and behaviors associated with cognitive processes. Importantly, Dierdorff et al. (2009) stated that although technical/administrative, interpersonal, and conceptual requirements appear to broadly underlie all managerial work, these requirements are likely to vary

across different managerial occupations with regard to their relative significance to role enactment.

Furthermore, Mintzberg (1971, 1973) proposed a different model of managerial roles based on research that considered the chief executives of five medium- to large-sized organizations. He classified the manager's role into interpersonal, informational, and decisional roles, which can be further divided into ten distinct roles. The interpersonal role consists of three roles relating to interpersonal contact: "figurehead" (performing a number of ceremonial, legal, and social duties as a symbolic head); "leader" (motivating, encouraging, and training employees); and "liaison" (establishing a network of contacts to bring information and favors to the organization).

The informational role includes three roles involving the processing of information: "monitor" (receiving internal and external information with a view to understanding the organization and environment); "disseminator" (transmitting information received from outsiders or from other subordinates to members of the organization); and "spokesperson" (transmitting information to outsiders on the organization's performance, policy, and plan).

The decisional role encapsulates four roles relating to the organization's important actions: "entrepreneur" (being an initiator and designer of much of the controlled change in the organization); "disturbance handler" (handling important, unexpected disturbances that the organization faces); "resource allocator" (allocating organizational resources of all kinds for significant organizational decisions); and "negotiator" (participating in important negotiation sessions). The replicating studies have supported Mintzberg's (1973) model (e.g., Martinko & Gardner, 1990; Pavett & Lau, 1983, 1985), and it has been used as an important source of reference in management research and education (Gibbs, 1994; Tengblad, 2006).

More recently, Adner and Helfat (2003) proposed a model of dynamic managerial capabilities, i.e., a manager's capacity to build, integrate, and reconfigure organizational resources and competencies. This concept is built on "dynamic capabilities" (e.g., Teece et al., 1997), and postulates that management intent in the upper echelons has an impact on organizational outcomes (Martin, 2011). Specifically, the capabilities focus on managers' resource-related decisions (Sirmon & Hitt, 2009), including managerial cognition, managerial human capital, and managerial social capital (Adner & Helfat, 2003). "Managerial cognition" refers to managerial beliefs and mental models that serve as a basis for a manager's decision-making. "Managerial human capital" consists of learned skills and knowledge that managers develop through their work experience, training, and education, whereas "managerial social capital" includes goodwill derived from formal and informal relationships with others (Helfat & Martin, 2015). Previous empirical research indicates that the dimensions of dynamic managerial capabilities influence firm performance and strategic change (Helfat & Martin, 2015; Sirmon & Hitt, 2009). Kor and Mesko (2013) argued that the CEO influences the absorptive capacity of the executive team in achieving an evolutionary fit, through the configuration and orchestration of senior executive dynamic capabilities.

Comparing these three models, conceptual skills (Katz, 1955), decisional roles (Mintzberg, 1973), and managerial cognition (Adner & Helfat, 2003) are closely related. However, because each model has its own unique configuration of these dimensions, there is no consensus as to which model is the most appropriate for upper-echelon managers. Additionally, the models of Mintzberg (1973) and Adner and Helfat (2003) do not adopt a discontinuity perspective, which assumes that managerial jobs change dramatically as managers ascend the hierarchy.

5.3.3 Research Question

The unlearning of individual executive officers is important for firms because it may have a major influence on unlearning at the organizational level (Hutzschenreuter et al., 2012). According to discontinuous perspectives of management transition (Charan et al., 2001; Meuse et al., 2011), executive officers need to unlearn their managerial skills when being promoted from senior management. However, the appropriate configuration of managerial skills for the upper echelon remains unclear. Therefore, the following research question was proposed:

> **Research Question**: What managerial skills do managers abandon and acquire when they are promoted from senior manager positions to executive officers?

It is notable that a senior manager handles a single business, while an executive officer may be in charge of multiple businesses. Charan et al. (2001) stated that executive officers who handle multiple businesses have to prepare themselves for bigger decisions, and greater risks and uncertainties. The transition in managerial responsibility may require executive officers to unlearn previously acquired skills.

5.4 Methods

5.4.1 Research Strategy

The methodological approach was characterized by the following three features. First, I analyzed interview data collected by senior managers as interviewers. The senior managers were asked to identify a high-performing executive officer in their firms, and interview him or her. An advantage of this method is that the interviewers occupied senior positions and therefore had the opportunity to find and communicate with high-level executive officers, who were successful in unlearning their knowledge and skills. Specifically, the interviewers were able to observe and assess how true interviewees' comments were, and how well their management skills had worked in their executive positions. Second, the grounded-theory approach (Strauss & Cobin, 1998) was adopted for developing and integrating the categories related to

the unlearning of executive officers. Third, the interview data were analyzed using qualitative content analysis, which has been used to transform interview transcripts into categories (Molina-Azorin, 2012).

5.4.2 Data Collection

Interviews were carried out in 46 medium and large-sized Japanese firms in various industries. The interviewers were senior managers of the firms who participated in a management training program in which I was a lecturer. The program was aimed at developing the leadership skills of the participants, who were candidates for CEOs of their firms.

In the program, I asked the senior managers to conduct interviews with excellent executive officers they considered as role models, and to submit interview reports. There are two reasons why this method was adopted. First, most of the senior managers may have maintained good relationships with the interviewees, allowing them to extract frank opinions throughout the interviews. In particular, many Japanese managers like to convey their past experiences to their subordinates, suggesting that more substantial interviews would be possible when the interviewers were internal managers rather than external researchers. The second reason is that as the senior managers were CEO candidates, they had networks and capabilities for identifying and selecting excellent executive officers in their organizations.

The main question in the interview was, "What managerial skills should be changed, revised, or discontinued when you are promoted from senior manager to executive officer?" Interviewers were instructed to conduct semi-structured interviews based on this question for more than an hour, and to write down the comments of interviewees as field notes as accurately as possible. In the management training course, the interviewers had received training on field work including interview methods by professional scholars and had conducted several field work initiatives. Although the interviews were not tape-recorded as that might have hindered an open conversation, they were encouraged to record interviewees' remarks and voices in a realistic manner in their reports.

All of the executive officers were men. Most of the organizations the 46 interviewees belonged to were top-level companies in a variety of industries. They worked for manufacturing firms, including electronics (8), machine (5), food (3), automotive (2), chemicals (2), pharmaceuticals (2), commodities (2), others (2) (56.5%), as well as non-manufacturing firms, including IT/communications (6), transportation (6), construction (4), insurance (2), and trading (2) (43.5%). Regarding numbers of employees, 8.7% had 999 or fewer, 6.3% had 1000–4999, 38.2% had 5000–9999, and 46.8% had 10,000 or more. Interviewees' ages ranged from 50 to 65 years old.

5.4.3 Analysis

The research in this chapter adopted mixed methods, or the collection and analysis of both quantitative and qualitative data in a single study in which the data were collected concurrently or sequentially (Creswell et al., 2003). Interview data were analyzed using primarily a grounded-theory approach (Glaser & Strauss, 1967; Strauss & Corbin, 1990, 1998). Then, content analysis (Babbie, 2001) was used to supplement the results. This method has been called "qualitative-dominant mixed-methods research" (Johnson et al., 2007).

First, a grounded theory approach (Glaser & Strauss, 1967; Strauss & Corbin, 1990, 1998) was used to extract categories of managerial skills unlearned, as the approach is a qualitative research method for developing an inductively derived grounded theory about a phenomenon (Strauss & Cobin, 1998). Strauss and Corbin (1990) stated that the elements of grounded theory are concepts, categories, and propositions. Concepts are the basic unit of analysis, emerging from the conceptualization of actual data, whereas categories are higher in level and more abstract than the concepts. Propositions refer to generalized relationships between a category and its concepts and between discrete categories. Because the main goal of the analysis was to categorize managerial skills learned and unlearned, the focus was on concepts and categories among the three elements.

According to Strauss and Corbin (1998), the analysis consists of three steps: open coding, axial coding, and selective coding. Open coding is the process through which categories are identified and their properties and dimensions are discovered in data. Axial coding is the process by which categories are systematically developed and related. Selective coding is the process of integrating and refining the theory whereby categories are organized around a central explanatory concept. From among the three steps, I conducted open and axial coding to extract categories of unlearned managerial skills, and did not use selective coding because the main purpose of the analysis was to categorize unlearned and learned managerial skills rather than finding central concepts or categories of the skills.

Specifically, I (1) compared the interview data collected from participants to generate the theoretical properties of the unused or acquired skills (open coding), (2) reduced the list of properties for coding to formulate a smaller and more highly abstract set of theoretical properties, and (3) repeated steps (1)–(2) until no new property of the unused or acquired skills emerged (axial coding). Considering the definition of individual unlearning, which assumes the simultaneous occurrence of relinquishing the use of obsolete knowledge and acquiring new knowledge, I analyzed the finding that managers unlearned some skills when they adopted new skills or ways of thinking. The analysis generated the following three categories: decision-making, delegation and motivation, and collecting information.

To supplement the analysis of grounded theory approach, content analysis was performed to examine the extent to which the three categories were referred to in the interviews. That is, coding in content analysis was conducted after completing the analysis using the grounded theory approach. Following the standard procedure

(Babbie, 2001), two coders (doctoral students) who did not know the goal of the study were asked to check whether interviewees had any comments on the unlearning of three managerial skills (decision-making, delegation and motivation, and collecting information) using 0 (no comment) or 1 (comment). If coders did not agree on coding, they discussed the issue to decide the coding. The coding agreement was 81.7%, which is above the agreement criterion of 0.70 (Lombard et al., 2002).

5.5 Results

As shown in Table 5.1, the results indicate that when promoted from senior business manager to executive officer, the participants' knowledge and skills changed, with 87.0% of the managers experiencing "unlearning." For the three categories, the managerial skills most referred to were "decision-making" (61.5%), "delegation and motivation" (59.0%), and "collecting information" (35.9%). These figures refer to the percentage of utterances that executive officers made on related managerial skills or capabilities. As suggested earlier, unlearning occurs simultaneously with learning. That is, managers tend to unlearn their knowledge and skills when they acknowledge that these are no longer valid or useful and they need to acquire new ones.

5.5.1 Decision-Making

Decision-making is a skill concerned with managerial judgment and the ways decisions are made. With stakeholders, including stockholders and analysts, some officers stressed the importance of having management principles:

> After becoming a director, I was in the position of having to listen to the opinions of stockholders and analysts, etc., directly. Also, I have to undertake the responsibility of decision-making from new perspectives that differ from those of the past, such as taking into consideration dividend levels. In order to deal with these new tasks, it is imperative to possess a knowledge of principles with regard to management and operations, and always to be consistent.

This comment indicates that the manager stopped using internally concentrated decision-making skills in learning to make decisions from broader viewpoints, based on management principles. Another officer also emphasized the importance of having a broad perspective in taking a long-term, versus a short-term, view, and in dealing with customers and competitors:

> Nowadays I have to think not only of today and tomorrow but also of the "future," from a long-term perspective, when I act. Compared to my former position, as a senior manager, now I am required to have a broader perspective in order to consider matters such as customers, competitors, and technology, in the context of domestic and global markets.

There were also officers who shifted from analytical to intuitive decision-making after their promotions. For example:

Table 5.1 Unlearned and learned managerial skills

Categories		Unlearned managerial skills		Learned managerial skills	
		Characteristics	Examples	Characteristics	Examples
Decision-making	61.5%	Short-term Analytic Partial	Thinking of today and tomorrow Using in-depth analysis and quantified indicators Micro organizational focus	Long-term Intuitive Holistic	Thinking of the future Having a broader perspective Relying on intuition in leadership
Delegation and motivation	59.0%	Directive	Being recognized as the top person Deciding direction and directing implementation Keeping track of what is happening	Dedicated Entrusting	Ensuring everything goes smoothly even when I am away Fostering the people who require minimum supervision Give authority to my subordinate managers
Collecting information	35.9%	Direct collection	Expecting information from the operational level Collecting workplace information directly	Network-based collection	Designating a key person at each division for collecting information Enhancing my network of 'brains' inside and outside the organization

Note The figures refer to the percentage of utterances that executive officers made comments on related managerial skills or capabilities

> When I was a senior manager, my management style was based on in-depth analysis and quantified indicators for all levels, from individuals to customers, as well as business concerns. By doing so, my decisions were more convincing to those around me and, thus, consensus was smoothly established. However, now I am an executive officer, I think it is important to rely heavily on my intuition in my leadership, and to be fluent with regard to a descendent hierarchic approach.

This comment illustrates that he stopped using analytical decision-making skills that were based on quantitative data in favor of acquiring intuitive and top-down decision-making skills. Another officer explained the significance of change: from thinking about what is most beneficial to the individual unit, to what is most beneficial for the entire organization:

> When I was in operational management, it was natural for me to devote myself only to my department and staff, including getting involved in personnel issues like promotions, and securing the maximum budget for my department. If I had not done so, I would not have been able to win my subordinates' trust. However, now I am in corporate management, I have to set aside any "micro" organizational focus, and act in the best "macro" interests for the entire corporation.

These remarks suggest that executive officers unlearned the decision-making approach of their operational management years, and learned a new approach appropriate to corporate management. Specifically, "micro" organizational focus refers to short-term, analytical concerns, and concentrating on what was best for their business unit, whereas "macro" interests indicate long-term, intuitive concerns, and being focused on what is best for the entire company.

5.5.2 Delegation and Motivation

Although it is always necessary for managers to delegate to staff, an executive officer has control over multiple aspects and is required to manage more indirectly. One officer explained this as follows:

> In my experience, what has been most fulfilling about working in an organization is to be given responsibility and authority for an area, to accumulate knowledge and experience of it, and to be recognized as the top person. However, as the breadth of my responsibility widens and the number of my staff increases, I can no longer stay in my comfort zone. Rather, I need to give up such a mentality. This is because the expectations from the organization have changed: I have to transform myself into one of the corporate leaders, not remain as operational staff. In other words, my responsibility has come to mean thinking about how to build teams, while providing my staff with the feeling of satisfaction. Some people may find such responsibility difficult.

This comment suggests that, after being promoted to executive officer, managers need to undertake a transition from the operational management perspective to the corporate management perspective. The officer seems to have discarded a mentality in which he becomes a "hero," and has learned, instead, to make subordinates the main characters. Similarly, another officer made the following comment:

> Retaining the "direct chain of command" style for defining issues, deciding direction, and directing implementation, is practically impossible; and I think it may further harm the initiative of senior managers. As information and opinions from operational managers and below can only be obtained from the workplace, problems may emerge with regard to how the reception of ideas can remain consistent.

In the remarks, the "direct chain of command" indicates directive management style in which managers tells subordinate staff what they are expected to do and how to perform the expected tasks. His comments indicate that he gave up the directive management style, and adopted an entrusting and dedicated style, emphasizing delegation. How do executive officers deal with delegation on a larger scale? One officer made the following comments:

> It is important to ensure everything goes smoothly even when I am away. In order to make it possible, I share my ideas and discuss issues with my subordinates. That way, they have the same sense of approach to the decision-making criteria when something comes up unexpectedly. Thus, I can empower them with confidence, and they can play things "by ear," and make appropriate judgments. This is also beneficial for fostering the people who require minimum supervision.

This is a good example of how executive managers empower subordinates by sharing decision-making criteria. The officer's comment below stressed the significance of clearly interpreting the different policies at operational and corporate levels.

> After I became an executive officer, the range of my departmental responsibilities expanded and my previously valuable expertise became useless. When my area of responsibility expands, I am no longer able to keep track of what is happening at the operational level. As a result, there is always a delay in acquiring information from such a level. Without a choice in the matter, I have to give authority to my subordinate managers and, as for myself, business plans must be conducted in a descendent hierarchic approach; each business line works on its own as long as it is on the right track. As per the descendent hierarchic approach, the vision and strategies of the entire organization and its head office have become a "bible." However, I can't always be in the dark about the operational level. So, I take the initiative and observe operational staff meetings so that I have a better vision for the status review.

In the comments, the descendent hierarchic approach refers to a top-down management style in which the process of decision-making and goal setting is kept at the senior level. These remarks suggest that executive officers unlearn the management style acquired during their years as senior operational managers, when they were the lead characters and directed implementation. After promotion, the officers have shifted to an entrusting management style in which they make their staff the lead characters, while ensuring that decision-making criteria are shared, and exert control via the business plan.

5.5.3 Collecting Information

The third category, collecting information, is closely associated with delegation, discussed above. As executive officers find themselves detached from operations, and it is more difficult to acquire timeline information, they need to devise other ways of collecting such information. One officer made the following observation:

> I think that the higher the position I am in, the more I should stop expecting information. I think it is inappropriate to get frustrated if information doesn't reach me, and I have begun to think it is natural. Executive officers often expect information from the operational level, but

> the closer we get to the operational level, we find that information is mostly in the form of "requests." However, the requests differ from department to department, so it is imperative to amalgamate all these requests and tackle them as issues.

"Request" means a demand from the subordinates about solving problems in the workplace. The comments suggest that he gave up expecting precise information from subordinates in making decisions. Instead, he learned to identify management issues based on subordinates' requests. In a different approach, another officer deals with this difficulty by designating a key person directly between the operational level and corporate level:

> Because executive officers are isolated, it is always difficult for information to reach them. Therefore, a key person should be designated at each division for collecting information.

The term "isolated" refers to a situation in which there are few people to consult with when in trouble. This officer abandoned the direct approach of collecting information, while he learned to gather information through networks in the organization. In the following comment, which also relates to management decision-making, an officer makes it a point to have mentors inside and outside of the company, serving as his "brains":

> After I became an executive officer, the range of issues where I make decisions based on my experience has become limited. I frequently encounter cases where I am prompted to use foresight to make decisions proactively. Such experience encourages me to learn more in areas that I am unfamiliar with, and to enhance my network of "brains" inside and outside the organization.

These comments suggest that executive officers need to unlearn their methods of directly collecting information from the operation, and devise other effective and efficient ways for this that complement their positions; for example, by designating key persons for transmitting information from the operational level and by building a network of mentors inside and outside the company. As executive officers face difficulties obtaining information directly from the units they handle, opportunities to acquire information from other units or the external environment may increase.

5.6 Discussion

Executive officers are known to have an impact on unlearning at the organizational level (Hutzschenreuter et al., 2012); however, few studies have investigated management transitions in the upper echelons of an organization (Hambrick, 2007; Hambrick & Mason, 1984). The findings of this chapter suggest that executive officers unlearned the managerial skills of "decision-making," "delegation and motivation," and "collecting information" in a discontinuous manner. The main contribution of this research is to demonstrate the discontinuous nature of management transitions from an unlearning perspective.

5.6.1 Theoretical Implications

There are two theoretical contributions to the literature on unlearning and managerial skills. First, the results identify the types of managerial skills that upper-echelon managers should unlearn. As shown in Fig. 5.1, newly promoted executive managers need to substantially transform their skills in "decision-making," "delegation and motivation," and "collecting information," which correspond to Mintzberg's (1973) model of managerial roles: decisional, interpersonal, and informational, although these two models are not identical. The findings suggest that Mintzberg's (1973) model is useful for explaining the managerial transitions of managers in the upper echelon. This may be because informational roles are significant for executive officers in making decisions, while the models of Katz's (1955) and Adner and Helfat's (2003) do not clearly include the informational roles. The results indicate that researchers in organizational behavior should be aware of the importance of a manager's information-related capabilities in theorizing managerial skills.

Second, the results show discontinuous transitions in managerial skills before and after promotions to executive positions. Although the pipeline model (e.g., Charan et al., 2001) and other related research (e.g., Kaiser & Craig, 2011) assume that there is discontinuous management transition when promoting senior managers to executive officers, previous findings have tended to be partial, fragmented, or not empirical. As shown in Fig. 5.1, decision-making skills were changed from "short-term, analytic, and partial" to "long-term, intuitive, and holistic," whereas skills in delegation and motivation were transformed from "directive" to "dedicated and entrusting." Skills in collecting information were changed from "direct collection" to "network-based collection." This may be because executive officers have to handle multiple businesses with bigger decisions, and greater risks and uncertainties (Charan et al., 2001). Notably, the unlearning of "decision-making" (61.5%) and "delegation and motivation" (59.0%) were more substantial than that of "collecting information" (35.9%). The results indicate that unlearning by executive officers may influence the

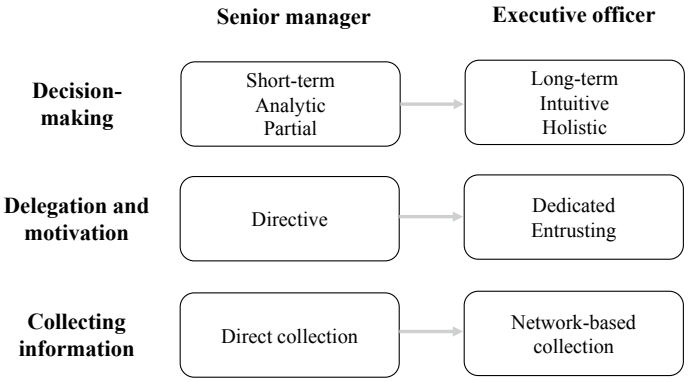

Fig. 5.1 Summary of findings

nature of organizational visions or objectives, which guide and direct employees' behaviors and performance. Although some studies on dynamic managerial capabilities have stressed the importance of cognitive capabilities for executive officers (e.g., Helfeat & Peteraf, 2015), the findings of this chapter also indicates that they have to unlearn not only cognitive or decision-making skills but also human or interpersonal skills.

5.6.2 Practical Implications

There are some implications for management development. First, managers who become executive officers have to review all aspects of their managerial skills, including "decision-making," "delegation and motivation," and "collecting information," rather than considering only partial improvement. Specifically, executive officers need to have long-term, intuitive, and holistic viewpoints, to empower subordinates, and to collect information through inside and outside networks. To promote the managerial transition, it may be effective to provide candidates for executive officers with training programs that help them prepare for unlearning obsolete skills and learning necessary ones after they are promoted to executive positions.

Second, managers should understand that the changing skill requirement is discontinuous. It is ineffective for executive officers to stick with managerial skills that have worked well in the previous position, such as short-term and partial decision-making, directive leadership, and direct collection of information. These skills may hinder staff development and performance in the unit. After being promoted to executive positions, managers need feedback on their leadership styles from superiors, colleagues, and subordinates to improve their leadership performance. Additionally, executive coaching by external professional coaches or an apprenticeship within top management teams is beneficial for improving managerial skills when managers fail to deal with discontinuities in transitions.

Third, organizations should introduce several systems and practices to make managers at all levels aware of discontinuities in managerial transitions and the need for unlearning their managerial skills when they are promoted to higher positions. It may be desirable for managers to acquire unlearning capabilities when they are lower or middle managers. To facilitate this, organizations can introduce not only formal systems such as 360-degree appraisals and management training programs but also informal systems including apprenticeships and mentor networks in which senior managers coach their junior managers.

5.7 Conclusion

Although executive officers have an impact on organizational unlearning, little is known about unlearning processes in the upper echelon. This chapter identified

discontinuous unlearning flows in managerial skills before and after promotions to executive positions. The findings suggest that managers need to substantially unlearn their decision-making managerial skills as well as delegation and motivation when they are promoted from senior managers to executive officers.

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Chapter 6
Individual Unlearning Processes

To survive in a competitive and turbulent environment, not only organizations but also individuals have to "unlearn" because organizational unlearning is often triggered by individuals (Akgün et al., 2007; Becker, 2010; Fernandez et al., 2012; Hedberg, 1981; Rebernik & Sirec, 2007; Tsang, 2008; Zhao et al., 2013). However, unlearning has been mainly investigated at the organizational level (Becker & Bish, 2021; Hislop et al., 2014; Klammer & Gueldenberg, 2019), whereas only a few studies have explored individual unlearning processes (e.g., Kmieciak, 2020). The purpose of this book was to investigate how situational and personal factors influence individual unlearning.

6.1 Individual Unlearning Model

To explore how individuals unlearn at work, I analyzed quantitative and qualitative research data from Chaps. 2–5. Based on these findings, I developed a model of the individual unlearning process, as shown in Fig. 6.1. The model consists of five factors: (1) triggering experience, (2) reflection, (3) unlearning, (4) learning goal orientation, and (5) outcomes.

The model generally corresponds to Kolb's (1984) experiential learning cycle model, including concrete experience, reflective observation, abstract conceptualization, and active experimentation. Specifically, when employees have a triggering work experience related to supervisors' exploratory activities or promotions to higher positions, which stimulate them to generally and critically reflect on it, they unlearn their beliefs, routines, and skills if necessary, which results in professional growth and higher work engagement. In this process, employees with high learning goals are likely to reflect deeply on their experiences of unlearning.

Compared with Kolb's (1984) model, this model has four unique characteristics. First, the reflection includes both general and critical reflections. Although previous

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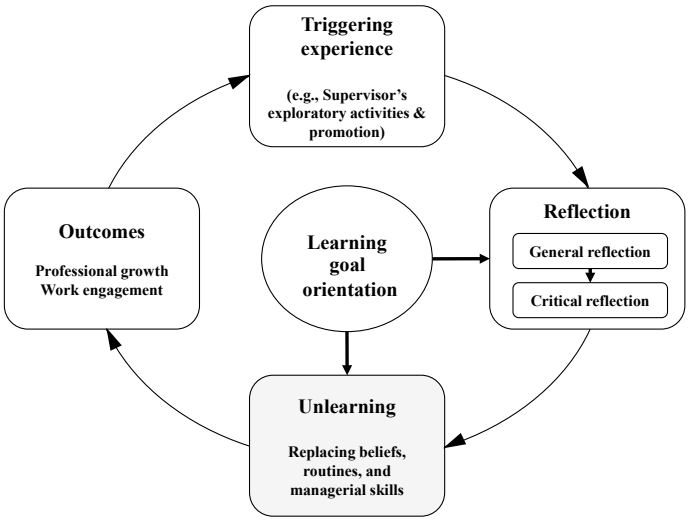

Fig. 6.1 Individual unlearning process model

studies have emphasized the role of critical reflection rather than general reflection in promoting deep learning (e.g., Cope, 2003; Cunliffe, 2004; Mezirow, 1990; Reynolds, 1998), this model provides new insights by assuming that general reflection leads to critical reflection.

Second, unlearning is not just a result of abstract conceptualization (Kolb, 1984), but the replacement of knowledge and skills with new ones (Becker, 2005; Hislop et al., 2014; Tsang & Zahra, 2008). The findings of this book suggest that employees unlearn work-related beliefs and routines (Akgün et al., 2006), as well as managerial skills (Mintzberg, 1971, 1973), through reflection after triggering experiences such as working with explorative supervisors and promotions to higher positions.

Third, the model postulates that learning goal orientation plays an important role in facilitating general reflection, critical reflection, and unlearning. This may be because learning goal orientation has a directive function for higher-order cognitive and learning activities (Bouffard et al., 1995; Ford et al., 1998; Locke & Latham, 2002). Specifically, it was found that employees with high learning goals tend to be concerned about increasing their competence (Dweck & Leggett, 1988), seek information (Janssen & Prins, 2007), and self-regulate their behaviors for self-improvement (Bouffard et al., 1995).

Fourth, the model postulates that unlearning leads to positive work-related outcomes, including professional development and work engagement, which is a very good predictor of important employee outcomes (Bakker & Albrecht, 2018). Although previous studies argued that unlearning involves emotional challenges, anxiety, and stress (Cotter & Cullen, 2012; Visser, 2017), the findings of this book found a positive effect of unlearning on work engagement, which corresponds

to Kmieciak (2020), who also reported a positive relationship between individual unlearning and innovative work behaviors.

6.2 Insights for Organizations

Based on the individual unlearning model and the findings of this book, some insights are provided for organizations promoting unlearning. There are five recommendations for managing unlearning within organizations.

Promotion as an opportunity for unlearning

As the leadership pipeline model (Charan et al., 2001) suggests, a promotion to higher positions is a good opportunity for unlearning, because managers at different levels are required to perform different managerial skills. Notably, this transition is not continuous but discontinuous (Kaiser & Craig, 2011; Meuse et al., 2011). That is, managerial skills that are effective at a lower level sometimes hinder performance at higher levels. Thus, organizations must be aware that promotions can be opportunities for managers to unlearn their skills, which may provide training that helps them assess their managerial skills, discard obsolete ones, and acquire new ones.

Utilizing explorative managers

The findings indicate that managers who adopt exploratory activities have a positive impact on their employees' unlearning through learning goal orientation and reflection. Thus, organizations need to utilize explorative managers as role models of unlearning for employees. The first step is to distinguish explorative managers, who try to obtain new knowledge through experimentation, from exploitative managers, who emphasize refining and extending existing knowledge (Gupta et al., 2006; Laze & Friedman, 2007; March, 1991). The second step is to place them in a unit where unlearning is required. The third step is to encourage and train explorative managers to act as role models that promote subordinates' unlearning.

Two-stage model of reflection

Organizations should adopt the two-stage model of reflection by combining "general reflection," focusing on problem solving and the immediate details of tasks, with "critical reflection," examining taken-for-granted assumptions and beliefs (Gray, 2007; Raelin, 2001; Reynolds, 1998). As the findings indicate that general reflection leads to critical reflection, employees need to understand that they can be aware of the problems of taken-for-granted assumptions while reviewing ordinary work processes and objectives in periodic meetings. To promote the two-stage model of reflection within the organization, managers or team leaders must acquire facilitation skills for both general and critical reflection on the programs. The techniques of "after-event reviews," which enable participants to critically reflect on their behaviors (DeRue et al., 2012), may be effective for the two-stage model of reflection.

Assessing unlearning: Beliefs, routines, and skills

The direct approach to promoting unlearning is to assess the extent to which employees are engaged in unlearning. A periodical survey should be conducted to evaluate the changes in employees' work-related beliefs and routines using the questionnaire in Chaps. 2 and 3. It is necessary to compare the results among units and different hierarchical levels to identify the problematic units and positions and to improve the problems. It is also imperative for organizations to evaluate managers' unlearning after being promoted to higher positions. If managers are reluctant to unlearn, unlearning programs in which participants learn how to unlearn should be provided. Organizations need to understand the risks of leaving managers using ineffective skills for their positions, as Charan et al. (2001) suggested.

Learning goals as drivers of unlearning

The findings of Chaps. 2 and 4 suggest that employees' learning goal orientation is a strong driver for promoting unlearning by stimulating general and critical reflection. There are three approaches to enhancing the learning goal orientation. First, organizations hire employees with the potential for achieving high learning goals. Measurement scales and job interviews can be used to assess relevant learning goal orientation. Second, "learning goal orientation training" (Noordzij et al., 2013), in which participants learn the importance of learning goals and skills for setting learning goals, would be beneficial. Third, increasing the number of explorative managers may be helpful for enhancing subordinates' learning goal orientation, as suggested by the results of Chap. 4.

6.3 Implications for the Post-COVID-19 Era

As I am writing this book during the COVID-19 pandemic, there are some implications for the post-COVID-19 era. First, considering that discontinuous transitions are good for unlearning, we should utilize the drastic changes brought about in response to the pandemic to unlearn unproductive work practices. To limit the number of infected cases, many employees have been forced into "mandatory work from home," where they have to engage in virtual teamwork and lead others via e-communications to implement tasks (Kniffin et al., 2021). Such discontinuous changes provide us with good opportunities to discard our outdated skills and knowledge, and acquire new, innovative ones. Even when the pandemic is over, the capabilities and functionalities of virtual teamwork and leadership will prove advantageous for organizations.

Second, explorative managers may invent advanced practices on how they communicate and solve problems during virtual meetings. Therefore, knowledge managers need to collect information on the best practices of explorative managers' unlearning and share them by using knowledge database throughout their organizations. In addition, human resource managers may develop training programs so that managers learn from these best practices. In order to improve employees' unlearning capabilities, it

is important to promote collaboration between knowledge management and human resource management units for sharing and utilizing information.

Third, organizations should try not to rely solely on explorative managers but also encourage conventional managers and employees to learn from the pandemic experience. As suggested earlier, the drivers for unlearning are employees' critical reflection and learning goal orientation. Even if the spread of COVID-19 ends, there may be an outbreak of some other pandemic in the near future. To deal with such unexpected situations, employees need to be trained to unlearn their beliefs, routines, and skills. In the training programs, participants should learn how to critically reflect on their work processes. Furthermore, selecting employees with high learning goals, as well as learning goal orientation trainings are necessary to prepare them for dealing with similar pandemic-like situations in the future.

6.4 Future Research Topics

To promote the understanding of individual unlearning processes, there are several future research topics. First, some parts of the model (reflection → critical reflection → unlearning) were examined by analyzing data from Japan and the US, and the whole model should be tested using data from various occupations and cultures, including other parts of Asia, Europe, and other regions. It would be interesting to conduct cross-cultural research that examines the differences and similarities in the unlearning process among various cultures.

Second, this study investigated the effect of promotions and supervisors' exploratory activities, but there must be other situational factors that trigger employees' unlearning. For example, future research should analyze the influence of types of leadership (e.g., transformational leadership) and organizational climate (e.g., learning climate) on employees' unlearning.

Third, considering that unlearning has mainly been studied at the organizational level (Becker, 2010; Hislop et al., 2014), it is worth investigating how organizational or team level unlearning affects individual unlearning, and how individual unlearning stimulates team and organizational unlearning using both qualitative and quantitative research.

Fourth, although this study focused on the role of learning goal orientation in facilitating unlearning, there may be other personal factors that trigger individual unlearning. For example, some personality traits of the Big-Five model such as "openness to experience" are predicted to promote individuals' unlearning, because openness to experience was found to enhance creativity (Tan et al., 2019).

Fifth, since unlearning can be regarded as "self-change," future research needs to examine individual unlearning processes from the viewpoint of transformative learning (Mezirow, 1990, 1991, 1997, 2003). Qualitative research should be conducted on how employees unlearn their beliefs, routines, and skills through critical reflection in the transformative learning process.

Finally, this study analyzed the relationship between individual unlearning and work engagement, whereas there must be other consequences of unlearning, such as creativity and job performance. As previous research has stated that unlearning may enhance anxiety and stress (Cotter & Cullen, 2012; Visser, 2017), it is imperative to analyze the negative effects of unlearning on employees.

6.5 Conclusion

Unlearning is an issue for professionals, because it is necessary for them to escape the "competency trap" (Cumming, 2018; Levinthal & March, 1993). However, individual unlearning has been neglected in previous research (Becker & Bish, 2021; Hislop et al., 2014; Klammer & Gueldenberg, 2019). To address this research gap, this book quantitatively and qualitatively explored how employees unlearn at work and proposed a model of the individual unlearning process. The main contribution of this study is its revelation of the mechanism by which employees unlearn their beliefs, routines, and skills through general and critical reflection, which are driven by learning goal orientation under the influence of supervisors' exploratory activities or higher positions. The model provides several insights into organizational interventions to promote employees' unlearning. Future research should replicate and develop a model to deepen the understanding of individual unlearning processes.

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