

Unlearning at the Individual Level: An Exploratory Case Study in a High Power Distance Country

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Abstract. This paper presents a case study that addresses factors that influence unlearning at the individual level. These factors were studied in a public sector organization located in a country characterized by high power distance. The case organization went through a change process of a daily routine caused by the introduction of a new technology. Data were collected through semi structured face-to-face interviews with shop floor agents in the state of Santa Catarina/Brazil. The results highlight the strong influence of the support of formal leaders on the unlearning process of individuals, suggesting that managers operating in a high power distance environment have to make bigger efforts compared to their counterparts in small power distance settings to promote unlearning processes of employees. The study advances the limited body of knowledge regarding unlearning in general and unlearning at the individual level in particular. It also stresses the influence of the national cultural dimension on the unlearning process of individuals.

Keywords. Unlearning; Routine Change; Knowledge Management; National Power Distance.

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1 Introduction

Changes in organizations have become more and more frequent in the 21st century. In fact, many changes in organizations have their origin in the advancement of technology (Mehrizi and Lashkarbolouki, 2016). The increasing internationalization has also been a driving force behind a number of changes in organizations (Casillas et al., 2010). Thus, a shorter half-life of organizational knowledge is found in many areas (Leal-Rodríguez et al., 2015), and employees are in continuous learning processes for new procedures and routines. However, learning sometimes requires unlearning. This occurs frequently when existing processes change. Moreover, the capacity to discard obsolete knowledge is associated with innovative behavior in organizations (Rebernik and Sirec, 2007; Becker, 2008; Leal-Rodríguez et al., 2015). Consequently, the ability of individuals to unlearn, meaning to eliminate obsolete knowledge, can be deemed crucial for adapting to new and more complex environments (Griffith and Hoppner, 2013). This, in turn, means that an inability to unlearn may be considered a significant weakness of organizations (Leal-Rodríguez et al., 2015).

So far, very few studies have had the topic of unlearning at their core (Akgün et al., 2006; Tsang, 2008; Tsang and Zahra, 2008; Brook et al., 2016), even though unlearning has been studied as a sub-process of organizational learning for the last three decades (Akgün et al., 2006; Brook et al., 2016). As unlearning prepares the ground for innovation (Cepeda-Carrión et al., 2012; Leal-Rodríguez et al., 2015) it should be studied in more depth (Tsang and Zahra, 2008; Becker, 2010;).

Among practitioners, unlearning appears to be underestimated or even non-existent. One reason might be that unlearning is perceived as opposite to learning. If learning is understood as a positive attribute for an organization – “organizational learning” sounds like being associated with a better organizational performance – unlearning may be interpreted as a negative issue. Thus, this negative connotation may prevent people from tackling the topic. In Brazil, for instance, the concepts of “organizational learning” and “learning organization” are known at the leadership level; the term “unlearning” is rarely mentioned, if not completely unknown (Rodrigues et al., 2015).

Previous studies have suggested that unlearning in organizations for managerial purposes can be better understood by considering the phenomenon at the individual level. Several researchers (e.g. Becker, 2008, 2010; Navarro and Lario, 2011; Gutiérrez et al., 2015; Brook et al., 2016;) also state that the context in which unlearning takes place plays a significant role.

Discarding current knowledge may vary according to mental models, concepts, and ideas influenced by national culture and reality (Zahra et al., 2011). However, few studies have investigated environmental factors, such as organizational culture (e.g. Leal-Rodríguez et al., 2015) that might influence unlearning at the individual level. Moreover, a possible influence of national culture on individual unlearning is an underdeveloped field of research.

Even though some papers (e.g. Heizmann et al., 2018; Wang and Guan, 2018) have shown the effect of national culture on learning processes in organizations at the individual level, we did not identify similar studies that connected unlearning with national culture.

Against this background, in the present paper, the following research question was addressed: What factors influence unlearning at the individual level in a company located in a high power

distance country that changes a routine? To answer the question a case study in Brazil was carried out. The present study was inspired by a similar research conducted in Australia, a small power distance country, by Becker (2010). We use Hofstede's (1991) approach of national cultures to understand the phenomenon. A series of semi structured interviews was conducted in a Brazilian public organization to identify barriers and enablers in the unlearning process of a routine operated by shop floor agents due to a change that was triggered by the introduction of a new technology.

Our research aims to better understand unlearning at the individual level and thereby extends the underdeveloped body of knowledge regarding unlearning with an empirical study of the unlearning process in an organization located in a high power distance country.

This paper is structured as follows. In the next section, the relevant literature is outlined. Then, section 3 describes the methodology of the study. Thereafter, section 4 presents the results followed by a discussion. The final section outlines the conclusion of the research and highlights some suggestions for future research.

2 Literature Review

This section presents studies on unlearning in organizations. It starts with presenting an overview of unlearning at the organizational level in order to underline that individual unlearning in this paper refers to the organizational context.

2.1 Organizational Unlearning

In this paper, we understand organizational unlearning as the intentional abandonment of knowledge by the organization after questioning current beliefs and actions (Mehrzi and Lashkarbolouki, 2016). Unlearning aims to eliminate obsolete knowledge, assumptions, or routines (Hislop et al., 2014) from the organizational memory (Akgün et al., 2006) by discarding old logics and making room for new ones (Sinkula, 2002; Cegarra-Navarro et al., 2010; Leal-Rodríguez et al., 2015).

Unlearning as a process is commonly studied in the same context as the learning process (Akgün et al., 2007; Yeo, 2007; Yildiz and Fey, 2010; Leal-Rodríguez et al., 2015). Even though "little consideration has been given to unlearning" (Becker, 2008, p. 89), some researchers highlight the importance of the process of unlearning as an antecedent to new learning related to innovation and organizational change (McGill and Slocum Jr., 1993; Lei, Slocum and Pitts, 1999).

There are also authors who understand the unlearning process as a phenomenon that is separated from the learning process (e.g., Tsang and Zahra, 2008), suggesting that these processes require different skills (Zahra et al., 2011).

Thus, the concept of unlearning may vary slightly according to the approaches of the above-mentioned authors. However, the literature suggests that there is a general agreement among authors that unlearning relates to a conscious or intentional "abandoning", 'eliminating', 'rejecting', 'discarding' or 'giving' up something" by organizations or individuals" (Hislop et al., 2014, p. 12).

At the organizational level, once a specific knowledge is discarded, it can disappear through deleting contents from knowledge repositories. In contrast, at the individual level, it may be retrievable (Hislop et al., 2014). Thus, the challenge of unlearning processes is to remove old undesirable content from the human storage system (Tsang and Zahra, 2008). This implies that one needs to look more closely at individuals.

2.2 Individual Unlearning

Sinkula (2002) underlines that unlearning at the organizational level occurs only if it first occurs at the individual level. Therefore, understanding the unlearning process at this level makes sense if we want to understand the phenomenon at the organizational level (Becker, 2008; Tsang and Zahra, 2008; Hislop et al., 2014).

At the individual level, we understand unlearning as a conscious release of particular values, assumptions, knowledge, behavior (Hislop et al., 2014), and actions (Becker, 2008) by individuals in an organization.

Thereby, it is important to distinguish unlearning from forgetting (Azmi, 2008; Tsang and Zahra, 2008; Cegarra-Navarro et al., 2013). Unlearning means an intentional loss of knowledge stored in an individual's long-term memory, i.e. to make room for accepting new knowledge when new learning is required. While forgetting can be accidental (bad memory), unlearning has to be an intentional withdrawal by an individual from what he/she knows (Cegarra-Navarro et al., 2013). Forgetting is not examined in the present paper.

Unlearning at the individual level is associated with psychological phenomena such as changing belief structures, mental models, frames of reference, or mental maps (Akgün et al., 2007). Anxiety (Akgün et al., 2006) or feelings of nostalgia and attachment to current procedures may be obstacles for an individual to unlearn old knowledge and to learn new knowledge (Azmi, 2008). Thus, unlearning should be managed with great care in organizations (Rushmer and Davies, 2004).

Individual unlearning can be categorized into three types: fading, wiping, and deep unlearning (Rushmer and Davies, 2004; Hislop et al., 2014). Fading occurs due to a lack of knowledge application. Wiping occurs when unlearning is generated by factors external to an individual, for example, changes imposed by the company where the individual works. Wiping relates to strategic changes at the organizational level, affecting routines at the operational level (Hislop et al., 2014). Deep unlearning is generated by experiences that change ones' frames of reference or belief structures and can be a reason for anxiety, fear, and confusion (Hislop et al., 2014).

Considering the importance of unlearning at the individual level for successful change management, we focused on enablers and barriers of individual unlearning in organizations.

2.3 Factors that Influence Individual Unlearning

In the literature review, we identified some barriers and enablers that influence the unlearning processes at the individual level. They were classified into two categories: personal characteristics (Table 1) and (predominantly) external factors that influence individual unlearning (Table 2). These categories were assigned based on the influence on the individual unlearning process either

coming from the individual personal characteristics or from elements external to the individual. We assume that an organization can act on some factors of the second category to facilitate individual unlearning processes.

Table 1. Personal Characteristics for Individual Unlearning

Enablers
[A] Willingness to face novelties (Sinkula, 2002).
[B] Open-mindedness, receptivity, and willingness to listen (Rushmer and Davies, 2004).
[C] Tolerance for uncomfortable feelings like vulnerability, uncertainty, embarrassment, humiliation, loss of status or of credibility (Rushmer and Davies, 2004).
[D] Willingness to be brave and to shoulder personal risks (Rushmer and Davies, 2004).
Barriers
[E] Fixed beliefs like established mindsets, frames of reference, or convictions about the current methods (Starbuck, 1996; Rushmer and Davies, 2004; Akgün et al., 2006; Azmi, 2008; Becker, 2008; Tsang, 2008; Hislop et al., 2014).
[F] Anxiety (Akgün et al., 2006).
[G] Expertise (turned into tacit knowledge) as perceptual filters (Starbuck, 1996; Becker, 2008, 2010).
[H] Emotional traits like reactions against imposed changes, routine seeking, fear of the unknown, or short-term focus (Rushmer and Davies, 2004; Becker, 2008, 2010).
[I] Age as a resisting factor to changing routines due to long-time usage (Zahra et al., 2011).
[J] Fear of hierarchy (Azmi, 2008).
[K] “Local patriotism” - employees at lower levels that misunderstand the intentions of the upper-level management (Becker, 2008).
[L] Prior training and experience (Brook et al., 2016).
[M] Lack of awareness about the need for unlearning: “If it ain’t broke don’t fix it” (Rushmer and Davies, 2004, p. ii13).

From Table 1 some issues emerge we will reflect on in the following. Not only psychological aspects specific to an individual seem to play a role in unlearning processes, but also factors related to the age of the individual (Starbuck, 1996; Zahra et al., 2011). Older people may be more resistant to unlearn processes, as they normally have been following the same routine for many years (Tsang and Zahra, 2008). Williams van Rooij (2012), however, states that human beings do not lose their learning-unlearning skills with increased age. Elements that can influence cognitive and behavioral changes in older people may be found in the ways in which new knowledge is presented. This also includes the omission of contexts (Williams van Rooij, 2012).

Sometimes resistance for relinquishing “the old” is related to critical reasoning: does unlearning always induce positive results for an organization? Brook et al. (2016) mention the negative

side of unlearning processes when political interests in organizations are concerned. And Tsang (2008) reminds: “even when unlearning is intentional, the new routines are not always better than the old ones they replace” (p. 7). Older people and persons with large experience in old routines might be more aware of what the cited author refers to.

External influences on unlearning at the individual level are discussed in the literature as highlighted in Table 2. According to Becker (2008), external influences can either encourage or discourage unlearning by people.

Table 2. External Factors for Individual Unlearning

Enablers
[N] Leadership behavior for an appropriate unlearning context, openness to new ideas, awareness of environmental changes (Cegarra-Navarro et al., 2010; Hislop et al., 2014; Gutiérrez et al., 2015; Brook et al., 2016), and motivation for the teams for changes (Cegarra-Navarro et al., 2010; Gutiérrez et al., 2015) acting as “change leader” (Sinkula, 2002).
[O] Team reflexivity and constant self-reflection of its members for information sharing inside the group and a revision of current routines and beliefs (Lee and Sukoco, 2011).
[P] Supportive environment for openness, creativity, and vulnerability (Rushmer and Davies, 2004).
[Q] Crisis or turbulent environments (Sinkula, 2002; Akgün et al. 2006).
Barriers
[R] Attachment of managers to old routines in which they gained authority (Tsang and Zahra, 2008; Becker, 2010).
[S] Senior managers with vested interests in the current situation (Starbuck, 1996).
[T] Existing organizational policies, structures, procedures, practices, and processes, which no longer contribute to organizational progress (Becker, 2008).
[U] Organizational memory (Becker, 2008; Zahra et al., 2011).

The content of Table 2 also provides room for some reflections. A crisis and dynamic environments (Sinkula, 2002; Akgün et al., 2006) often generate in individuals the awareness of a need for changes and consequently a readiness to abandon old ways of working. In our time, the implementation of new technologies frequently triggers routines to be modified. Sometimes individuals have no alternatives but to unlearn the old ways of working/doing things and to adopt a new one if they wish to keep their jobs. They face wiping unlearning (Rushmer and Davies, 2004) which can require an additional effort from the individual to abandon a known routine.

As stated in Table 1, cognitive and emotional aspects can influence individual unlearning processes. As shown in Table 2, there are also external aspects that can be managed by the organization to eliminate barriers and to promote a positive attitude to unlearning by the individuals. Thus, unlearning requires an appropriate context and environment which can be provided by the management (Brook et al., 2016; Hislop et al., 2014). One example of how managers can create a favorable environment to unlearning is to promote intense communication, which stresses the

benefits of the newness to be implemented. While resistance to unlearning can happen when people do not understand its advantages (Hislop et al., 2014). Another example of how managers can promote a supportive environment is by starting discussions about the abolition of a current situation with the whole group to support team reflexivity (Lee and Sukoco, 2011).

Akgün et al. (2006) stressed the groupthink phenomenon as a possible barrier to unlearning at the individual level. “Groupthink refers to a deterioration of mental efficiency, reality testing, and moral judgment that results from in-group pressures” (p. 9) (Janis, 1982 cited by Whyte, 1998). This negative attitude towards novelties can be avoided when managers act as “change leaders”, which are individuals whose mindset is oriented to a “why not?” mentality showing an open attitude toward changes.

Established organizations, in particular, have difficulties with promoting unlearning because withdrawing things that made the entity successful is not easy (Mehrizi and Lashkarboluki, 2016); thus, being attached to past successes can be one more factor that hinders unlearning. Another situation that can make unlearning more difficult for individuals is when they learn new knowledge at the same time they discard the old one. However, when the old and the new practices are similar, unlearning the old and adopting the new practice is less difficult (Tsang, 2016).

Having investigated the unlearning process during the implementation of new technology in an Australian government-owned corporation of the energy industry, Becker (2010) proposed seven factors that influence unlearning at the individual level.

Table 3. Becker’s Factors that Influence Unlearning at the Individual Level (Source: Becker (2010, p. 260))

Factor	Description
1. Positive prior outlook	Relating to the outlook of the individual prior to the change; positive overall view and understanding of why the change was needed, and an expectation that they would be well prepared for the new way by the time it was introduced.
2. Feelings and expectations	Relating specifically to feelings of apprehension toward the change, levels of comfort with the prior system, and expectations that changes would be difficult.
3. Positive experience and informal support	Relating to experiences during the change; in particular the level of support from manager and colleagues, and the impact of their own level of experience on their ability to unlearn and accommodate the change.
4. Understanding the need for change	Relating to the understanding of the need for the new way, why the organization chose the new way and the level of comfort with the decision to change.
5. Assessment of the new way	Relating to the views about the difficulty of the new way and the level of comparison still being done between the old way and the new way.

Factor	Description
6. History of organizational change	Relating to how well change had been handled in the past and the perception of previous change efforts.
7. Organizational support and training	Relating to the quality, timeliness, and applicability of the written documentation and the training provided to support the change.

The connections between Becker's (2010) factors with the barriers or enablers presented in the Tables 1 and 2 are presented below.

1. Positive prior outlook - [A]; [B]; [E]; [I]
2. Feelings and expectations - [A]; [B]; [C]; [D]; [E]; [F]; [H]; [J]
3. Positive experience and informal support - [E]; [G]; [I]; [L]; [N]; [O]
4. Understanding the need for change - [B]; [C]; [D]; [E]; [G]; [H]; [I]; [K]; [M]; [Q]
5. Assessment of the new way - [A]; [B]; [C]; [D]; [E]; [G]; [H]; [I]; [L]; [T]
6. History of organizational change - [P]; [U]
7. Organizational support and training - [N]; [O]; [P]; [R]

The letters in parenthesis represent the topics highlighted in the Tables 1 and 2. Thus, Becker's (2010) factors for the Australian context appropriately summarize the content of the tables. Therefore, we chose to apply Becker's (2010) model in the Brazilian context for the purpose of the present paper.

2.4 National cultures and unlearning

Hofstede (1991) states that individuals belong to groups, to organizations, and to a society and they carry within themselves mental programming from different levels of culture: a national level according to the country, a regional and/or ethnic and/or linguistic affiliation level, a gender level, a generation level, a social level, and an organizational level when applicable.

Motivated by the research conducted by Becker (2010) in Australia, we studied a case in Brazil. We chose the national culture layer as a suitable approach to understanding unlearning at the individual level in conjunction with the implementation of a new technology. The question in the background was whether in the Brazilian case study different factors would emerge when compared to the Australian case study.

Hofstede (1991) explains that aspects of a national culture can be measured relative to other cultures in four dimensions: the degree of inequality (Power Distance Index- PDI), individualism (Individualism Index - IDV), masculinity-femininity (Masculinity Index - MAS), and tolerance ambiguity (Uncertainty Avoidance Index - UAI). All these national culture dimensions have an influence on organizations as well as on individuals. Table 4 summarizes the index and their scores for the two countries:

Table 4. Indexes of Dimensions of National Cultures

Index	Description	Australia	Brazil
PDI	Dependence of relationships in a country.	36	69
IDV	Looseness of ties between individuals in a society.	90	38
MAS	Clearly defined gender roles.	61	49
UAI	The extent to which individuals feel threatened by uncertainty or unknown situations.	51	76

Regarding the indexes presented in Table 4, we argue that PDI and IDV are related to the external factors on unlearning at the individual level (see Table 2) whereas UAI is associated with the individual factors (see Table 1). Consequently, in companies, the higher the PDI the more dependent are the employees on their bosses. According to the PDI presented in Table 4, it is expected that managers in Brazil make bigger efforts as their Australian counterparts to lead the required processes of relinquishing old knowledge. In addition, based on the scores for IDV, the groupthink phenomenon might be stronger in Brazil than in Australia. The UAI in Brazil is higher than in Australia, thus, we may expect in our case study to see an externalization of feelings of fear about upcoming changes.

In line with Tsang and Zahra (2008), we adopted a routine-oriented approach to investigate unlearning at the individual level. For this reason, in the following, some issues about unlearning old routines are presented.

2.5 Routines

Organizational routines can be understood as “repetitive patterns of interdependent actions carried out by multiple organizational members involved in performing organizational tasks” (Tsang and Zahra, 2008, p. 7).

Feldman (2000) argues that “unlearning in organizations” leads to the management of routines, which becomes a source of continuous change as knowledge progresses. Old knowledge embedded in routines needs to be unlearned and new knowledge needs to be developed with the aim of improving performance (Tsang and Zahra, 2008) and of keeping an organization flexible and agile (Hislop et al., 2014).

The concepts of ostensive and performative aspects of routines should also be taken into account to verify whether unlearning has occurred (Tsang and Zahra, 2008). Ostensive aspects of routines are related to the structured procedures adopted by an organization that can be stored by human beings and by artifacts. Performative aspects are related to the routines executed by a specific individual in a specific place at a specific time (Tsang and Zahra, 2008).

It may occur that ostensive aspects of a routine are removed, but individuals keep the old aspects of the performative routine. In such a case, one cannot assert that the process of unlearning

is complete. The unlearning process is considered successful only when both ostensive and performative routines have been relinquished (Tsang and Zahra, 2008).

3. Research Methodology

We chose a case study approach as the research method. A case study enables researchers to have a holistic view of real life events aiming at exploring processes of contemporary issues (Yin, 2010).

The routine change in the process P at Alphabeta Logistics (a fictitious name thereafter abbreviated as AL) was selected as a case for the present study. AL is located in Santa Catarina, a state in the southern part of Brazil, and employs ca. 2000 persons. AL is a public sector organization characterized by a high power distance. The unit of investigation was the parcel delivery agents at the shop floor level.

The suitable process in AL selected for the empirical research was determined after discussions with several managers of the company in April 2016.

Hereafter, the process P at the shop floor level is briefly explained. AL has standardized procedures for agents to deliver parcels. After a sorting process at a local storage center, of which there are hundreds all over Brazil, each parcel is delivered to the recipient. The present investigation covered two storage centers (SC1 and SC2) located in the state of Santa Catarina.

In the old process P, each delivery agent organized manually his/her delivery route completing a paper sheet called List of Objects to Deliver (LOD).

Due to the adoption of a new technology, the process for preparing the LOD changed. Now an IT program defines automatically the delivery routes and prints the LOD for the agent. Then, each agent organizes the parcels he/she has to deliver according to the LOD issued from the computer program. Additionally, the program prints the document which will be signed by the recipient. This document also includes a bar code that identifies the parcel, a significant change from the old procedure. We observed that the agents experienced an incremental change and they had to relinquish the old way of working. Thus, the delivery agents experienced an unlearning process.

To understand which factors did influence the unlearning involved in the process P at the individual level, the questionnaire of Becker (2010) was the selected instrument to be sent to over a hundred delivery agents who worked in process P. We chose Becker's (2010) model because she studied the unlearning process for the implementation of a new technology in companies and conducted the research at the operational level. Additionally, Becker's (2010) factors are connected to factors identified by other authors (please refer to Tables 1 and 2) which made her instrument suitable for the present study.

We took the questionnaire in its totality (please refer to Becker, 2010, pp. 258-259) and added one final open question to the instrument ("This space is yours, please write down additional comments about the process experienced"). With this open question, we intended to capture possible additional elements that were considered relevant in the process undertaken.

The questionnaire was translated into Portuguese. We conducted a semantic validation with

eight experts in the routine of process P, who recommended to apply the questionnaire through personal face-to-face interviews because shop-floor employees are not used to answering questionnaires sent by mail. Thus, we changed the original data collection strategy and decided to run a series of semi structured interviews in a few delivery centers using the questionnaire as a guide. Each question was posed in the same sequence to all the interviewees. However, they were free to comment on their answers.

The researcher who conducted the interviews also works for AL in the administrative sector but without direct contact neither with the research object nor with the interviewees. It should also be mentioned that the interviewer is an ISO Audit trained professional used to obtain and analyze data impartially.

After adjusting schedules with managers, appointments for the interviews were set. To increase the likelihood of obtaining free and sincere answers, the researcher stressed in each interview the anonymity. In addition, the interviewer clarified the academic purpose of the research and highlighted that no report would be made to any level of the company.

Ten agents of the storage center SC1 were interviewed within three days. The questionnaire supported the interviews. The interviewer read each statement of the questionnaire noting by hand the answers and additional comments of the interviewee to each question. Each interview lasted up to 30 minutes.

About one week after the data collection at the storage center SC1, we received the agreement from the manager of the storage center SC2 for running interviews. There, six agents were interviewed within two days, following the same procedures as in the storage center SC1.

After contacting some more storage centers to gather further data, the interviewer was informed that it was not possible to continue the data collection, as the agents were going on strike. Because of the arising difficulties in pursuing the data collection, we decided to work with the data they had obtained up to this point.

In the following, we would like to make some remarks about three aspects related to the data collection. First, the questionnaire proposed by Becker (2010) with subdivisions related to time (before the change, during the change, and after the change) provided difficulties to the interviewees, as they could not easily determine the exact moment of their perception. Second, the interviews were conducted in an extraordinary situation: AL is a public-sector organization and political instabilities have affected managerial practices in the organization. The organizational climate is influenced by the general political situation in the country, according to a few informal complaints obtained from some interviewees. This specific context made us think about giving up the research and waiting for a more stable situation within AL. However, according to Yin (2010), a case study is suitable to depict phenomena the way they occur at a specific snapshot of time. Since the research was conducted in a natural environment, we decided to investigate the events the way they occurred. The third aspect that has to be discussed is the fact that the researcher who executed the interviews is an employee of AL. On the one hand, this facilitated access to the organization. On the other hand, the risk of biases either in positive or in negative answers has to be taken into account when analyzing the results. Some interviewees may have reinforced negative aspects because the interviewer was a colleague, and the interviewees could have taken the interview as a moment of expressing feelings. But they could also have stressed

positive aspects under the fear that otherwise, the interviewer would report to managers the identity of the agent, even though the researcher guaranteed anonymity.

Some of the interviewees mentioned that some colleagues who did not accept the implemented change had to be removed from the activity. The interviewer tried to talk to them, but they refused to talk about the matter.

The data collected from the sixteen interviewees were transcribed to an Excel Sheet. The factors of Becker's (2010) model were adopted as categories for the subsequent data analysis.

4 Results and Discussion

As mentioned, we interviewed sixteen delivery agents: twelve males and four females (Table 5).

Table 5. Profile of Interviewees

Interviewee	Age range (years)	Time worked in the organization (range/ years)
A	46-60	< 5
B	31-45	6-10
C	46-60	11-15
D	31-45	16-20
E	< 30	< 5
F	31-45	6-10
G	< 30	< 5
H	< 30	< 5
I	31-45	16-20
J	31-45	11-15
K	46-60	>20
L	31-45	11-15
M	31-45	11-15
N	46-60	>20
O	31-45	11-15
P	46-60	>20

The sample represents mainly individuals that were introduced to computers during adulthood or in their middle age. More than 60% of the interviewees have been working for AL for over 10 years, which suggests that they know the company culture and have had experience with prior changes.

Noteworthy, and in contrast to the findings of Tsang and Zahra (2008) and Becker (2008), we noticed that the interviewed senior agents were as receptive to abandon the old way of working as their younger colleagues. They were aware that technology adoption is a critical issue for a better performance of the company. In line with Williams van Rooij (2012), they also expressed to be open to changes, which makes processes more efficient and helps in increasing the likelihood of success.

However, it must be stated that it was also reported to the interviewer that there were senior agents who did not accept the changes and therefore were removed from the process P. It also needs to be mentioned that the removed employees were close to retirement, according to the interviewees.

In the following, the findings, which were categorized based on the seven factors proposed by Becker (2010), are presented.

a) Positive prior outlook: In this study, more than 60% of the interviewees expressed positive expectations for the upcoming changes in the routine of process P. Statements were expressed in this sense:

It was high time to progress... There is technology like biometry... we have to progress. (Interviewee A).

The company must invest in technology! (Interviewee B).

I think that progress was little. More technology should be implemented at AL. (Interviewee D).

Some agents said that they did not have any expectations (either positive or negative). Some interviewees expected to have more work in their routines after the implementation of changes. Some others expressed fear for the company losing market share because the competitors were already using more advanced technology for similar processes.

The interviewees expressed awareness of external factors like technological development and behavior of competitors. The agents mentioned that these factors push individuals to accept changes. This suggests that the agents had a positive prior outlook related to the upcoming change. Middle-aged agents had a very positive opinion towards technological gadgets ("*my grandson explained this to me...*"), and they perceived the adoption of technology as positive.

Through the statements of the interviewees, we understood that when a novelty already exists outside the company and it has a positive general reputation, individuals can be more comfortable in unlearning old ways and in learning new ones.

b) Feelings and expectations: About half of the interviewees expressed their apprehensions with the new procedures, e.g. fearing that the new routine would make their work more difficult than before.

In each new process, there is anguish and fear of the unknown. It makes the learning process more difficult. At AL, where many employees have been working for the company for over 30 years, this situation is more critical. The manager must be able to guide the team. (Interviewee D).

However, some interviewees commented that they did not fear the complexity of the new technology because they heard that the colleagues from other delivery centers (who were already working with the novelty) were happy with the changes. The level of agreement among the employees on the need for implementing the new routine was rather high. In spite of the expressed apprehensions prior to the changes, more than 75% of the interviewees said that they were curious and wished to try the new routine.

We cannot stay attached to the past. We have to innovate. (Interviewee F).

Many of the interviewees expressed that technology adoption was necessary and that the company should have already done it a long time ago

The new procedure would facilitate my work, as the [delivery] route is readily prepared for me. (Interviewee E).

[The change] is positive. The company has to adopt new technologies (Interviewee F).

Yet, also unease was expressed

I had some fear about the new procedures... (Interviewee C).

A high level of communication and a positive prior outlook in a group can help to control the anxiety level of individuals. Managers who have answers to questions related to an upcoming change give confidence and assurance to the group.

The words of some agents suggest that the strategy of implementing change in progressive steps proved to be appropriate, as it gives time to individuals to reflect and to prepare for the upcoming change.

There was not much of a problem with most of the colleagues because the new procedures were implemented in steps, one workplace at a time. (Interviewee E).

The awareness of changes in the environment expressed by the interviewees has to be underlined. In spite of the fear of the unknown, the majority perceived technology as a necessary evil.

c) Positive experience and informal support: All the interviewees stated that their superiors (especially at the level $n+1$) guided them during the change process, which facilitated the acceptance of the technology introduction in their routine. The statements confirm that leadership can powerfully influence the replacement of the old by the new in a group.

The training activities were conducted by the manager and by the supervisors. We were lucky because one of the supervisors knew the new system very well.... (Interviewee F).

The managers and the supervisors of both storage centers personally conducted training sessions for the new process, and they were very committed to introducing the new routine as quickly as possible. For the management of the company, the change should mean a productivity increase in the process P.

During the interviews, the interviewer observed an open management style in both delivery centers, without hierarchical distance between managers and employees. The informality allows people to talk openly both with their peers and their managers to exchange opinions and perceptions.

In the present study, the progressive implementation of the routine change apparently enabled the communication among agents of different centers. Regarding group support, the favorable informal information from the agents, who had experienced the change, influenced positively the attitude of the agents for whom the change was still to come. However, some of the interviewees mentioned that there still were a few colleagues who were skeptical about the change process.

d) Understanding the need for change: After experiencing the adoption of the technology, the interviewees had a clearer understanding of why the company was implementing the changes. They could realize the performance improvement by adopting technological issues in the process.

The level of confidence in the company's decision increased after the implementation of the new routine with the employees.

Currently writing by hand does not make any sense! (Interviewee G).

In spite of the high positive prior outlook, the complete acceptance of the changes in the routine by the agents occurred only after a gain of productivity became evident.

e) Assessment of the new way: After implementing the new routine, some of the interviewees found that the new way was not as difficult as they had thought before the implementation, and they soon got used to the new procedures.

The new way brought much time savings. We save about 20 minutes per day. (Interviewee B).

Manual [procedure] is a lot more work. (Interviewee H).

We saved time with the new procedures... (Interviewee C).

Nevertheless, some of the agents revealed that in the beginning there were many errors which required continuous corrections. It took some time until everyone incorporated the new procedures. The acceptance of failures during the implementation process of the new routine allowed agents not to be ashamed of admitting them. This motivated them to keep trying until they unlearned the old procedure and learned the new one.

There were also some agents who mentioned their negative perception of the new way of running the process P. To them when they were writing the delivery route list LOD they could pay attention to each parcel individually. Receiving a completed LOD from the system makes the process rather impersonal in their view.

... but there have been negative impacts on ergonomics for the agents (Interviewee C).

We save time, but the final quality of the service was better before. (Interviewee I).

With the manual process, there were fewer errors. (Interviewee H).

It should be mentioned that interviewees H and I can be viewed as younger agents. Unexpectedly for someone of this age group, they have manifested advantages in manual procedures. Their remarks were interesting because they focused on the quality of service instead of the perception by the majority of the interviewees, who highlighted the relief that the new procedures brought to the agents' work, irrespective of the effect on the quality of service.

f) History of organizational change: The case of process P can be understood as unlearning through wiping (Hislop et al., 2014) and the unlearning process was generated by changes imposed by the organization. Such changes have not been unusual at AL.

About half of the interviewees expressed that changes in the company have often been without prior announcements. Some of the interviewees did not give an answer to this question, but they did express themselves with sighs and head-shakings. We interpreted the signs as melancholic and uncomplaining answers. We noticed that when the interviewees wanted to give negative answers, they expressed their dissatisfaction with body language.

Even though most of the interviewed agents mentioned that previous change processes in the company had not always been implemented smoothly, they did not consider this fact as a barrier to try new changes. One may suggest that such a reaction could be a cultural trait of AL agents.

According to them, last minute changes in the company are not unusual and the employees know that this is the way it is. “At the end, everything goes fine; when something does not go well, it means that this is not the end, yet” - this is a Brazilian popular saying that was expressed by some interviewees.

At this point, one may go back to the factor “positive prior outlook” of the process and conclude that the positive perception towards the nature of change - the introduction of a new technology - was stronger than the skeptics of the agents related to the management of such a change. Here, we may conclude that the nature of the change influences the acceptance of the novelty. According to the interviewees, they had already heard about the new technology and this facilitated the adoption of new procedures in the process P.

g) Organizational support and training: Formal training procedures were conducted mainly by the supervisor or by the manager of both storage centers. The training method consisted of speeches and explanations on site. The opinion of most of the interviewees about the training was very positive.

The manager conducted frequent training sessions [about the upcoming change] because a novelty always scares. (Interviewee C).

Some of the managers prepared written material or presentations on their own initiatives, which was considered useful and helpful. The agents found that the time gap between planning and implementing the change was satisfactory for this specific change of routine. The guidelines by the managers and their positive advertising about the new routine prior to the implementation facilitated the upcoming change process. However, more than 50% of the interviewees argued that opinions of their immediate superiors did not influence their personal decision to adapt to the new routine, which showed a contradiction with the emphasis on the positive behavior of the managers expressed by the interviewees. It might have been that the agents wanted to stress to the interviewer that they were able to think and decide for themselves about their engagement with the novelty and not simply follow hierarchical orders.

During the interviews, it was perceptible that the agents practiced the new routine without regrets. Recalling Tsang and Zahra (2008), in the present study it was realized that the agents unlearned both performative and ostensive aspects of the old routine. Even though the old routine still remains in the memories of some agents, it is discarded in practice.

Furthermore, it became clear that the actions of the supervisors and managers emerged to be crucial for each factor in Becker’s model. Although more than half of the interviewees argued that they were not influenced by the opinions of their superiors, some of them stressed the role of managers and supervisors before, during, and after the change.

The factors that influence the unlearning process at the individual level presented in the literature were also found in process P. Yet, we found that not all of them are of equal influence. The leaders’ formal training sessions - which were mentioned recurrently and many times by the agents - appeared to be the most relevant step for understanding and accepting the introduction of the new technology in process P. The study’s findings also suggest that in addition the formal support provided by managers and supervisors in the form of training, their daily and spontaneous behaviors and attitudes toward the upcoming changes stood out as supporting aspects for the workers’ ability to readily discard the old routines.

It is generally acknowledged that leadership is crucial in every organizational management process. The case study in AL organization confirmed that too. Particularly in unlearning processes relating to routines, managers and supervisors have to take the role of “change leaders”. The strong need for leadership as stressed by the interviewees reinforces the role of cultural aspects that might be influencing unlearning processes at the individual level too.

We learned from Becker’s research that in an Australian context the role of leadership was present as informal support provided by the managers to the employees. In AL, however, the interviewees highlighted that the formal training sections were conducted by the managers and not by instructors or Training & Development professionals. By recalling Hofstede (1991), we assume that the greater importance of leadership at AL may be explained by the different countries involved: Australia (in Becker’s context) and Brazil (the context of the present study). Societies with a high Power Distance Index (PDI) stress the role of managers, whilst societies with a low PDI seem to focus on the role of employees. In the latter case, there is less dependence of the employees on their superiors. Hofstede (1991) mentions that in countries where Romance languages are spoken one finds a medium to high PDI, while in countries where Germanic languages are spoken one finds a low PDI. Indeed, the PDIs presented by Hofstede (see Table 4) depict Australia as a country with a small power distance and Brazil as a society with a high power distance. Hence, the power distance seems to be a factor that explains the heavier weight put on managers by the individuals in the unlearning process.

In Brazil with a PDI higher and an IDV lower than in Australia, we expected pronounced collective thinking. However, based on the interviews conducted we could not find a confirmation for it. Individual opinions about the changes were expressed based on individual points of view.

Concerning the Uncertainty Avoidance Index, most of the interviewees expressed simultaneously fear and confidence about the upcoming change. On the one hand, they expressed fear of novelties. On the other hand, the nature of the change was an implementation of an already known technology. Besides, as mentioned before, colleagues who have already experienced the change have spread positive opinions about the matter. Thus, for the present case study, UAI did not show a relevant impact on the unlearning process of the individual.

5 Conclusions

In this study, we addressed an under-researched field of study, namely unlearning. Unlearning is rarely employed in organizations and relatively little is published about this phenomenon in the scientific literature in general. Based on the body of knowledge available, we identified barriers and enablers on unlearning. Among the external factors that may influence individual unlearning, we stressed the national culture as a promising lens for exploring unlearning at the individual level. We used Becker’s instrument (2010) developed from an Australian study in a similar unlearning process as an inspiration to look into an unlearning process executed in a public sector organization situated in a high power distance country. Recalling Hofstede’s (1991) national cultural dimensions, we can conclude that in the study conducted, the high power distance in Brazil might explain the important role of managers in unlearning processes. Interviewees involved emphasized the key role of managers at the n+1 level. Thus, the study

indicates that the managers must highly engage themselves in continuous communication and training actions for mitigating the difficulties in the unlearning processes at the individual level. It seems the role of the manager is decisive for the success of unlearning in the context of a high power distance culture in particular.

Our findings further highlight that developments coming from outside the organization affect the successful implementation of changes in routines. For example, individuals tend to accept more easily an alteration of a routine, when the change relates to a new technology, which they have already experienced in their daily lives. Managers in charge of running unlearning processes that are similar to the one presented in this study are invited to continuously promote an innovation-oriented mindset, e.g., by encouraging team reflexivity with regard to novelties and newness.

Some managerial implications can be drawn from the study's findings. Even in situations of incremental change employees working in a high power distance organization are rather likely to expect formal support from their superiors, like training sessions. The idea of training is directly connected with the acquisition of new knowledge. However, successful learning is often preceded by pouring out old knowledge that acts as a barrier for the new one. A Chinese saying states: "it is necessary to empty the cup before filling it up with new beverage". Consequently, in training sessions managers will need to start with techniques that can support employees with abandoning the old way. By convincingly demonstrating the advantages of doing things differently, managers might help the detachment from the past and promote the required unlearning process as a preparation for new learning, when required. Additionally, the findings indicate that an intense preparation of the managers at the n+1 level for change management in organizations operating in a high power distance context is required. Hence, we suggest the selection of managers who are "change leaders" with good communication abilities to neutralize feelings of anxiety in the group. A manager operating in a high power distance context should demonstrate the acceptance of errors during the acquisition of the new routine. He/she should also teach and support the employees.

Regarding future research, we suggest that further studies should be conducted about the influence of national cultural factors on unlearning in general and unlearning of routines in different countries. More rigour investigations based on Hofstede's approach to cultural differences could bring promising contributions to the field of unlearning. Some authors (e.g. Becker, 2008) argue that unlearning is a driver for innovation. Thus, research on the possible influence of national cultural dimensions on the unlearning at the individual level could also help in developing our understanding of the innovation capability of different countries. Future research could also examine factors that influence unlearning in routine changes that are not related to technology. Another issue to be investigated could be the influence of the individual's age on the effectiveness of unlearning processes.

A limitation of this study is the small number of interviewees involved. Also, the entire environment with an adverse organizational climate has to be stressed, which constituted the biggest barrier to the study and its execution. Thus, the findings presented in this paper cannot be extrapolated to the entire AL Company. It is clear that the results cannot be generalized but this was not the aim of the study. Instead, it aimed at contributing to the small number of empirical studies on unlearning. Finally, this exploratory research draws the attention to contextual

differences that could be useful to be taken into account when studying unlearning processes in organizations in different parts of the world.

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Biographies



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