

Copyright Undertaking

This thesis is protected by copyright, with all rights reserved.

By reading and using the thesis, the reader understands and agrees to the following terms:

1. The reader will abide by the rules and legal ordinances governing copyright regarding the use of the thesis.
2. The reader will use the thesis for the purpose of research or private study only and not for distribution or further reproduction or any other purpose.
3. The reader agrees to indemnify and hold the University harmless from and against any loss, damage, cost, liability or expenses arising from copyright infringement or unauthorized usage.

IMPORTANT

If you have reasons to believe that any materials in this thesis are deemed not suitable to be distributed in this form, or a copyright owner having difficulty with the material being included in our database, please contact lbsys@polyu.edu.hk providing details. The Library will look into your claim and consider taking remedial action upon receipt of the written requests.

**NAVIGATING THE UNDULATING PATH: UNRAVELING THE IMPACT OF
PLANNED AND UNPLANNED EVENTS DURING THE SOCIALIZATION PROCESS**

WEI WU

PhD

The Hong Kong Polytechnic University

2023

The Hong Kong Polytechnic University
Department of Management and Marketing

**Navigating The Undulating Path: Unraveling The Impact of Planned and Unplanned
Events During The Socialization Process**

Wei Wu

**A thesis submitted in partial fulfillment of the requirements for the degree of
Doctor of Philosophy**

August 2023

CERTIFICATE OF ORIGINALITY

I hereby declare that this thesis is my own work and that, to the best of my knowledge and belief, it reproduces no material previously published or written, nor material that has been accepted for the award of any other degree or diploma, except where due acknowledgement has been made in the text.

_____(Signed)

Wei Wu (Name of student)

ABSTRACT

Socialization is a complex, dynamic process that might be disrupted by both planned and unplanned events. However, the literature is sparse regarding the impact of these events on the socialization process, especially from the dynamic perspective. This dissertation provides a two-study exploration of the dynamics of planned and unplanned events that punctuate the newcomers' socialization process.

The first study conceptualizes job rotation as a planned disruptive event to the newcomer adjustment process. Using a field quasi-experiment with twelve waves of longitudinal data, I tracked changes in newcomers' task mastery and social integration before, during, and after job rotation. I found that newcomers with job rotation experienced an immediate decrease in task mastery after job rotation; newcomers without job rotation experienced an increase in social integration after rotation compared to newcomers with job rotation. I also found that newcomers with higher learning orientation experienced a smaller disruption in task mastery during job rotation and that newcomers with a more proactive personality experienced an increase in social integration during job rotation. Newcomers with initial challenging work experience had a quicker recovery in task mastery after job rotation but not in social integration.

The second study conceptualized the outbreak of the COVID-19 pandemic as an unplanned and positive profession-spotlighting event to newcomers' identity construction process. Using 10-wave longitudinal data (five waves before and five after the outbreak of COVID-19), I use discontinuous growth modeling to explore the impact of the pandemic as a positive profession-spotlighting event on their increase in professional identification. I found that new graduate nurses' professional identification gradually fell during their initial months in

professional practice but rose dramatically after the onset of COVID-19. I also found that sensegiving and moral elevation during the event led to an increase in professional identification.

Together, this dissertation extends the existing socialization literature by illuminating the significant influence of both planned and unplanned events on the socialization process and offers practical insights into how to manage such events effectively.

TABLE OF CONTENTS

CERTIFICATE OF ORIGINALITY	I
ABSTRACT.....	II
TABLE OF CONTENTS	IV
LIST OF TABLES	VII
LIST OF FIGURES	IX
CHAPTER 1: INTRODUCTION.....	1
Research Background.....	1
Research Needs and Objectives	3
Research Overview	6
Research Contributions	7
CHAPTER 2: LITERATURE REVIEW	10
Review of Socialization and Adjustment	10
Definition of Socialization.....	10
Indicators of Adjustment	11
Socialization and Onboarding Tactics as Antecedents of Adjustment.....	13
Newcomers Proactivity as Antecedents of Adjustment	16
Review of Time and Socialization	18
Longitudinal Studies of Socialization.....	18
Event Studies of Socialization.....	21
Review of Job Rotation	24
Definition of Job Rotation	24
Consequences of Job Rotation.....	26
Conclusions of the Literature Review	31
CHAPTER 3: STUDY 1	34
Hypotheses Development.....	37
Newcomers' Adaptation Process During Job Rotation	37
Newcomers' Adaptation to Disruption and Recovery from Disruption after Job Rotation ..	38
Functions of Individual Differences on Newcomers' Adaptation to Disruption after Job Rotation	40
Functions of Initial Challenging Experience on Newcomers' Recovery from Disruption after Job Rotation.....	43

Methods	47
Sample and Procedure	47
Measures	50
Analytic Strategy	52
Results	54
Discontinuous Growth Model for Task Mastery and Social Integration.....	55
Effects of Job Rotation on Task Mastery and Social Integration	57
Effects of Learning Orientation and Proactive Personality	59
Effects of Job Complexity and Social Undermining in the First Department.....	62
Discussions.....	64
Theoretical Implications	64
Practical Implications	68
Limitations and Future Directions	70
CHAPTER 4: STUDY 2	73
Hypotheses Development.....	75
Identity Construction Process and Positive Profession-Spotlighting Events	75
Professional Identification Trajectory and Change	76
The Role of Sensegiving and Moral Elevation.....	78
Methods	80
Sample and Procedure	80
Measures	82
Analytic Procedures.....	84
Results	85
Supplementary Analysis	88
Discussions.....	89
Implications for Theoretical Development.....	89
Practical Implications	93
Study Limitations and Future Directions.....	94
CHAPTER 5: CONCLUSION.....	97
APPENDICES	100
Appendix 1: Measures Used in Study 1	100
Appendix 2: Analytic Models of Task Mastery And Social Integration	102

Appendix 3: The Results without Control Variables in Study 1	106
Appendix 4: The Influence of Proactive Personality on the Trajectory of Task Mastery in Study 1	107
Appendix 5: Discontinuous Growth Model for Role Clarity in Study 1	108
Appendix 6: Robustness Check of COVID-19 in Study 1	110
Appendix 7: Robustness Check of Three Items of Social Integration in Study 1	112
Appendix 8: Robustness Check of Three Items of Job Complexity in Study 1	113
Appendix 9: Analytic Models of Professional Identification in Study 2	114
Appendix 10: Supplementary Analysis of Turnover Intention and Job Satisfaction in Study 2	119
Appendix 11: Alternative Coding for Discontinuous Growth Model in Study 2.....	121
Appendix 12: Robustness Check in Study 2	123
Appendix 13: Scale Validation in Study 2	124
Scale Validation for Sensegiving	124
Scale Validation for Moral Elevation.....	127
Scale Validation for Professional Identification.....	128
TABLES AND FIGURES	132
REFERENCES.....	181

LIST OF TABLES

TABLE 1.1: Coding And Interpretation Of Change Variables In The Discontinuous Growth Models (Study 1)	132
TABLE 1.2: Mean, Standard Deviations, Reliabilities, and Correlations (Study 1)	133
TABLE 1.3: Discontinuous Growth Model Results for Baseline Model and Differential Effects of Job Rotation on Task Mastery (Study 1).....	137
TABLE 1.4: Discontinuous Growth Model Results for Baseline Model and Differential Effects of Job Rotation on Social Integration (Study 1)	138
TABLE 1.5: Discontinuous Growth Model Results for Baseline Model and Differential Effects of Learning Orientation and Job Complexity on Task Mastery for Study 1	139
TABLE 1.6: Discontinuous Growth Model Results for Baseline Model and Differential Effects of Proactive Personality and Social Undermining on Social Integration (Study 1)	141
TABLE 2.1: Coding and Interpretation of Change Variables in the Discontinuous Growth Models (Study 2)	143
TABLE 2.3: Discontinuous Growth Model Results for Baseline Model and Differential Effects of Sensegiving and Moral Elevation on Professional Identification (Study 2)	146
TABLE A1.1: Discontinuous Growth Model Results for Baseline Model and Differential Effects of Learning Orientation and Job Complexity on Task Mastery with No Control Variables (Study 1).....	148
TABLE A1.2: Discontinuous Growth Model Results for Baseline Model and Differential Effects of Proactivity and Social Undermining on Social Integration without Control Variables (Study 1).....	150
TABLE A1.3: Discontinuous Growth Model Results for Baseline Model and Differential Effects of Proactivity on Task Mastery (Study 1)	152
TABLE A1.4: Discontinuous Growth Model Results for Baseline Model and Differential Effects of Job Rotation on Role Clarity (Study 1)	153
TABLE A1.5: Measurement Invariance of Repeated Measures in Task Mastery (Study 1).....	154
TABLE A1.6: Measurement Invariance of Repeated Measures in Social Integration (Study 1)	154
TABLE A1.7: Confirmatory factor analysis of variables measured at T3 (Study 1).....	155
TABLE A1.8: Confirmatory factor analysis of variables measured at T4 (Study 1).....	156
TABLE A1.9: Confirmatory factor analysis of task mastery and social integration measured at T12 (Study 1)	157
TABLE A1.10: Coding And Interpretation Of Change Variables In The Discontinuous Growth Models based on the COVID-19 (Study 1).....	158
TABLE A1.11: Discontinuous Growth Model Results for Baseline Model and Differential Effects of the Outbreak of the COVID-19 Pandemic on Task Mastery (Study 1).....	159
TABLE A1.12: Discontinuous Growth Model Results for Baseline Model and Differential Effects of the Outbreak of the COVID-19 Pandemic on Social Integration (Study 1)	160
TABLE A1.13: Discontinuous Growth Model Results for Baseline Model and Differential Effects of Job Rotation on Social Integration of Three Items (Study 1).....	161

TABLE A1.14: Discontinuous Growth Model Results for Baseline Model and Differential Effects of Learning Orientation and Job Complexity of Three Items on Task Mastery (Study 1).....	162
TABLE A2.1: Discontinuous Change Level 1 Model Building for Professional Identification for New Graduate Nurses (Study 2).....	164
TABLE A2.2: Discontinuous Growth Model Results without Control Variables and with POST Interaction (Study 2)	165
TABLE A2.3: Discontinuous Change Level 1 Model Building for Turnover Intention (Study 2)	167
TABLE A2.4: Discontinuous Change Level 1 Model Building for Job Satisfaction (Study 2)	168
TABLE A2.5: Absolute Coding and Interpretation of Change Variables in the Discontinuous Growth Models (Study 2).....	169
TABLE A2.6: Discontinuous Growth Model Results for Baseline Model in Absolute Coding	170
TABLE A2.7: Robustness Check of Setting T4-T5 as Turning Point (Study 2)	171
TABLE A2.8: Robustness Check of Setting T6-T7 as Turning Point (Study 2)	171
TABLE A2.9: Model Fit of Invariance Test for Professional Identification, Turnover Intention and Job Satisfaction (Study 2).....	172

LIST OF FIGURES

FIGURE 1.1: Hypothesized Baseline Model (H1): How Job Rotation Impacts Adjustment Trajectories (Study 1)	173
FIGURE 1.2a: New nurses' task mastery as a function of job rotation (Study 1)	174
FIGURE 1.2b: New nurses' social integration as a function of job rotation (Study 1)	174
FIGURE 1.3a: New nurses' task mastery as a function of learning orientation (Study 1)	175
FIGURE 1.3b: New nurses' social integration as a function of proactive personality (Study 1)	175
FIGURE 1.4: New nurses' task mastery as a function of job complexity in the first department (Study 1)	176
FIGURE 1.5: New nurses' task mastery and social integration as a function of job rotation based on the raw data (Study 1).....	177
FIGURE 2.1: General Trajectory of Professional Identification from Time 1 to Time 10 Without Any Predictor (Study 2).....	178
FIGURE 2.2a: Trajectory of Professional Identification as a Function of Sensegiving (Study 2)	179
FIGURE 2.2b: Trajectory of Professional Identification as the Function of Moral Elevation (Study 2) .	179
FIGURE A2.1a: General Trajectory of Turnover Intention from Time 1 to Time 10 (Study 2).....	180
FIGURE A2.1b: General Trajectory of Job Satisfaction from Time 1 to Time 10 (Study 2).....	180

CHAPTER 1: INTRODUCTION

Research Background

Effective socialization is pivotal to both organizations and newcomers. First, the 21st century work context, fraught with economic turbulence, rapid technological evolution, and increasing worker mobility, presents myriad challenges for organizations in terms of effectively integrating new employees and facilitating their socialization process (Ashforth, 2012; Ellis et al., 2015; Klein & Polin, 2012; Wanberg, 2012). For example, employees commonly change organizations such that the median tenure for all wage and salary workers ages 25 or older in 2018 stands at 5 years (Copeland, 2019). Therefore, effective socialization may be a key source of competitive advantage for organizations in the marketplace (Fang et al., 2011). Second, high attrition rates underscore the financial implications of ineffective socialization. Organizations failing to socialize employees often incur substantial turnover costs. This is because effective socialization reduces newcomers' turnover (Kammeyer-Mueller et al., 2013; Saks et al., 2007; L. Zhou et al., 2021), as well as improves newcomers' perceived fit with the job or the organization (Cable & Parsons, 2001; Saks et al., 2007). Finally, effective socialization sets the stage for a committed and productive workforce. Effective socialization has been found to relate to increased job satisfaction, organizational commitment, and job performance (Bauer et al., 2007; Ellis et al., 2015; Saks & Ashforth, 1997b; Saks et al., 2007). From the newcomers' perspective, beginnings are not easy. Individuals face a lot of uncertainty as newcomers of the organizations. Early socialization experiences appear to strongly affect the course of long-term adjustment, triggering either a success cycle or a failure cycle (Ashforth, Sluss, & Saks, 2007). Given the importance of socialization to both organizations and newcomers, examining the socialization process has important theoretical and practical implications (Ashforth, 2012; Bauer et al., 2007; Ellis et al., 2015).

Examining the socialization process should consider the role of time because socialization is dynamic inherently, involving a series of experiences shaping newcomers' development within their new roles or organizations (Ashforth, 2012; Ashforth et al., 2018). According to George and Jones (2000), "the role of time must be explicitly incorporated into a theory (and not just treated as a boundary condition) if a theory is to provide an ontologically accurate description of a phenomenon" (p. 658). Therefore, increasing socialization research has focused on dynamic changes of newcomers. Evidence highlights dynamic changes in various domains. These include adjustment indicators such as task mastery, role clarity and social integration (Chan & Schmitt, 2000; L. Zhou et al., 2021), along with work adjustment (Firth et al., 2014; Zhu et al., 2016). Changes are also noted in newcomers' social environment, including support and social undermining from supervisors or coworkers (Jokisaari & Nurmi, 2009; Kammeyer-Mueller et al., 2013) and network positions (L. Zhou et al., 2021). Newcomer attitudes, including job satisfaction (Boswell et al., 2005; Boswell et al., 2009), organizational identification (Zhu et al., 2017), organizational commitment (Maia & Solinger, 2016; Solinger et al., 2013), and turnover intention (Vandenberghe et al., 2011) also exhibit changes over time. Lastly, changes have been observed in newcomer behaviors, including proactive behaviors (Song et al., 2017), performance (Chen, 2005), and high-risk drinking (Liu et al., 2022). In essence, socialization is a fundamentally dynamic process, as evinced by the evolving landscape of newcomers' experiences over time. There is an implicit assumption in the majority of the socialization research that time is linear, with changes unfolding at a relatively steady pace. Consequently, such studies often rely on occasional snapshots of newcomers. For example, task mastery would be expected to improve progressively, being less at Time 1 (T1) than at T2, and less at T2 than at T3. This suggests a presumed steady and consistent influence of the work

context on the newcomer, resulting in gradual change.

However, the assumption that time is linear is problematic because newcomers often encounter events that dramatically disrupt the gradual change patterns (Ashforth, 2012; Ashforth et al., 2018). This widely held assumption in the majority existing literature that socialization unfolds as a seamless and uninterrupted process neglects the potential disrupting or supporting role of events punctuating a newcomer's journey. In fact, newcomers' learning and adjustment are susceptible to disruption. Events, ranging from structured or planned socialization tactics to unstructured or unplanned incidents such as the outbreak of a pandemic or workplace achievements, can significantly impact newcomers. Learning and adjustment are episodic, often driven by moments that prompt new experiences, reflection, and possibly a reevaluation of past events (Ashforth, 2012). Newcomers may encounter surprises (Louis, 1980), turning points (Bullis & Bach, 1989) and critical incidents (Gundry, 1993). The occurrence of an event can lead to dramatic and discontinuous changes in learning and adjustment. The meaning that newcomers driven by early events and the stories they construct and reconstruct can significantly influence their learning and adjustment trajectories. Yet, the influence of discrete events on newcomers' socialization process remains relatively unexplored. Little is known about what actually goes on in real-time—what specific practices and events enact the socialization tactics and how newcomers experience them. For a comprehensive understanding of the role of time in socialization dynamics, it is imperative to delve into the nature, flow, and impact of events. This will augment our understanding of what actually happens between snapshots and reveal the nuanced dynamics of the socialization process.

Research Needs and Objectives

Recognizing the criticality of investigating the nature and impact of events during the socialization process, this dissertation specifically addresses two central research questions: (1)

How and why do events influence the newcomers' socialization process? (2) What factors might shape newcomers' responses to events during the socialization process?

In addressing the first question, I try to focus on various event types that newcomers might encounter throughout the socialization process. Morgeson et al. (2015) suggest two types of environmental events: events that are planned, anticipated, and actively sought by a given community and events that are exogenous. This bifurcation also applies to events that newcomers may encounter. On the one hand, newcomers might engage with planned events. For example, organizations use socialization tactics—methods employed to facilitate the socialization process (Van Maanen & Schein, 1979)—to assist newcomers during onboarding. Socialization tactics include numerous planned events for newcomers. For example, newcomers might experience job rotation as part of the socialization tactics. Job rotation, as a planned event created by organizations, can significantly impact newcomers, given its transformative effects on newcomers' work environments. On the other hand, newcomers may encounter exogenous, unforeseen events. For example, the outbreak of the COVID-19 pandemic will cause newcomers to reevaluate themselves and their work roles and to reconsider who they are and what the right thing is for them to do (Ashforth, 2020). Despite their unplanned nature, such events can have substantial impacts on newcomers. Therefore, my dissertation aims to incorporate both event types, examining how both planned and unplanned events could shape newcomers' socialization processes. For the planned event, I focus on the influence of job rotation. For the unplanned event, I focus on the influence of the outbreak of the COVID-19 pandemic.

In addressing the second question, I try to focus on influential factors from varying perspectives. Both individual differences and contextual factors can shape newcomers' responses to events. First, I focus on individual differences or dispositional antecedents. Different

newcomers might respond divergently to the same events. Therefore, I focus on how individual differences equip them to manage the disruption caused by these events. Particularly, I explore the influence of newcomers' learning orientation and proactive personality on their adaptation to disruption following job rotation. Although previous research has investigated how individual differences affect newcomers' adaptation outcomes, limited research is devoted to understanding how individual differences help newcomers cope with disruptive events.

Second, since events have created disruption into newcomers' experiences, by dividing the experiences into initial experiences (before the happening of the event) and later experiences (after the happening of the event), I focus on the influence of early work experiences on newcomers' later experiences. In other words, I delve into how early work experiences impact newcomers' recovery from disruption. Initial work experiences in an organization are important because they influence how later experiences will be interpreted (Ashforth, 2012; Kammeyer-Mueller et al., 2013; Lindsley et al., 1995; Qureshi & Fang, 2010). As Ashforth (2001) suggested, "the initial steps largely shape the direction of subsequent ones" (p.204). Among all early events, initial challenging experiences are particularly important (Ashforth, 2012), serving as the foundation for later performance gains (i.e., recovery from disruption) among newcomers. Specifically, when evaluating the influence of job rotation on newcomers' task mastery and social integration, I explore how the initial challenging task experience influences the recovery from disruption of task mastery and how initial challenging social experience influences the recovery from disruption of social integration.

Finally, experiences during events also matter. The occurrence of an event generates various experiences for newcomers. Leaders might assist newcomers in making sense of events via sensegiving (referring to the attempts of management to "influence the sensemaking and

meaning construction of others”, Gioia & Chittipeddi, 1991, p. 442). This will help newcomers to understand, interpret, and create sense for themselves based on the information surrounding the events provided by the leaders (Rouleau, 2005; Weick, 1988), thereby influencing how newcomers respond to the events. Concurrently, events might present opportunities for different affective experiences. For example, newcomers might experience moral elevation (referring to a positive emotion of warmth and expansion when observing others’ morally exemplary behaviors, Aquino et al., 2011; Haidt, 2003). Moral elevation might stimulate newcomers’ psychological process and influences how newcomers respond to the events.

Research Overview

Two studies (Chapter 3 and Chapter 4) in my dissertation endeavor to address the aforementioned limitations in the literature, striving to respond to the two research questions. The first study is a quasi-experiment longitudinal study on how job rotation might influence newcomers’ adjustment process. The second study is a longitudinal study on how a positive profession-spotlighting event (i.e., the outbreak of the COVID-19 pandemic) influences newcomers’ development of professional identification. Below I provide an overview of these two studies.

The first study (Chapter 3) aims to investigate the influence of job rotation as a planned disruptive event on newcomers’ adaptation process. I theorize that job rotation triggers two adaptation processes: disruption adaptation (newcomer adaptation process to minimize performance decrease) and recovery adaptation (newcomer adaptation process to quickly regain their performance levels). I contend that job rotation can cause a discontinuity in newcomers’ adaptation processes in terms of two important socialization outcomes—*task mastery* (i.e., newcomers’ performance and mastery of their job tasks) and *social integration* (i.e., newcomers’ development of personal relationships with coworkers and integration into the work group)

(Chan & Schmitt, 2000). I also explore the influence of newcomers' learning orientation and proactive personality on their adaptation to disruption following job rotation and the influence of newcomers' initial challenging experience on newcomers' recovery from disruption after job rotation, including both cognitively challenging experience—job complexity and socially challenging experience—social undermining.

The second study (Chapter 4) aims to investigate how a positive profession-spotlighting event, along with the experiences during such an event, changes the professional identification of novices in essential professions (Ashforth, 2020; van Zoonen et al., 2022). I theorize that a positive profession-spotlighting event can trigger identity reconstruction, thus influencing novices' professional identification. Moreover, I argue that the top-down process triggered by receiving *sensegiving* and the bottom-up boundary process triggered by experiencing *moral elevation* lead to changes in professional identification. Understanding the influences of these experiences can help to resolve the puzzles of the divergent effect of a positive profession-spotlighting event on changes in novices' professional identification.

Research Contributions

This dissertation intends to contribute to the socialization, literature in the following ways. By taking a adopting a discontinuous dynamic perspective, I enhance the understanding of socialization as an inherently dynamic process and address the emerging call for research into the discontinuous socialization process (Ashforth, 2012; Ashforth et al., 2018) by exploring how critical events may transform the entry or socialization process into a discontinuous one. The previous socialization research on the entry process tends to view time as essentially continuous (Chan & Schmitt, 2000; Jokisaari & Nurmi, 2009; Song et al., 2017). I challenge the traditional continuous socialization assumption by contending that the entry process is likely interrupted or altered by unexpected events that precipitate new experiences, reflection, and, perhaps,

reinterpretation of previous experiences (Ashforth, 2012; Ashforth et al., 2014). I enrich the newcomers' socialization processes by identifying newcomers' socialization influenced by job rotation, a planned event, and the outbreak of the COVID-19, an unplanned event. Such discontinuous socialization processes are largely unheralded in the previous newcomers' socialization process but necessary to fully understand newcomers' true adjustment and socialization processes as adjustment is typically driven by events (Ashforth, 2012). Many events simply arise without any deliberate planning, other events can be created strategically to create a desired effect. Understanding the influence of events on newcomers' socialization process helps us to have a more comprehensive picture of employees' development over time.

Second, I expand the socialization literature by exploring factors influencing newcomers' adaptation to disruptions during the socialization process. I advance the understanding of the role of individual differences in responding to the interruption or disruption of newcomers' adaptation process. Such disruptions may occur due to critical events like job rotation, necessitating that newcomers cope with disturbances in the newcomers' adaptation process (Ashforth, 2012). Furthermore, I offer theoretical insights into the effect of early experience on newcomers' later adaptation, specifically their recovery from disruptions. With the disproportionate impact of early events such as initial challenging work experience (Ashforth, 2012), there is a need for more systematic efforts are needed to understand how initial work experience influences newcomers' later adaptation processes.

I also contribute to the theory of the individual adaptation process (Chan, 2014). Adaptation research using a task change paradigm relies heavily on lab experimental research and cognitive tasks. A frequent critique of research on adaptation is that it often remains unclear which specific changed task components required adaptation (Niessen & Lang, 2021). To better understand the

individual adaption process, “researchers must specify aspects of the situation to which adaptation is required” (Chan, 2000, p. 32). To address this issue, I investigate how job rotation causes changes in newcomers’ task environment and social environment, thus requiring newcomers’ adaptation in task mastery and social integration. In summary, by understanding newcomers’ adaptation process with job rotation, I contribute to the theoretical and empirical development of the individual adaptation process.

I also contribute to understanding how a positive profession-spotlighting event and the experiences during that event change the professional identification of novices in essential professions, that is, professions that are highlighted as relevant during the event (Ashforth, 2020; van Zoonen et al., 2022). Identity construction, including reconstruction, can be triggered by critical events (Ashforth & Schinoff, 2016). However, these events' specific role in shaping professional identification remains unclear. By addressing this ambiguity, I answer the call by Ashforth (2020) to shed light on how positive critical events affect individual professional identification. Moreover, I provide a more nuanced understanding of how experiences during positive profession-spotlighting events may influence employees’ professional identification as they trigger different identity construction processes. Understanding the influences of these experiences can help to resolve the puzzles of the divergent effect of a positive profession-spotlighting event on changes in novices’ professional identification.

CHAPTER 2: LITERATURE REVIEW

Review of Socialization and Adjustment

Definition of Socialization

Socialization is defined as the process through which individuals acquire the knowledge, skills, attitudes, and behaviors required to adapt to a new work role and function effectively within an organization (Fisher, 1986; Saks et al., 2007; Wanberg, 2012). Van Maanen and Schein (1979) conceptualize it as a process of learning the ropes within a new organization. It is also the process by which newcomers make the transition from being outsiders to being insiders (Bauer et al., 2007). In practice, socialization refers to the extent to which newcomers acquire the knowledge, skills, and functional understanding of their new jobs, make connections with others in the organization, and garner insight into the culture, processes, and people in their new organizations (Bauer & Erdogan, 2014; Ellis et al., 2015).

The duration of the socialization period, however, lacks consistent interpretation in the literature. Socialization may range from the initial 90 days to as long as 2 or 3 years. Some socialization research focuses on the first 3 to 4 months. For example, one research investigates newcomers' socialization process over the first 90 days of a new job (Kammeyer-Mueller et al., 2013). Other research explores newcomers' experiences over the first 100 days (Chen, 2005; Ostroff & Kozlowski, 1992; Wang et al., 2011) because they believe adjusting is a big part of a new employee's first 100 days (Bradt, 2012). Other studies collect data for the first 4 months (Chan & Schmitt, 2000; Firth et al., 2014; Song et al., 2017; Zhu et al., 2017). Some research argues that socialization can span anywhere from six to nine months (Louis, 1980). For example, some research uses a 9-month data collection window (Zhang et al., 2017; Zhu et al., 2016). Some research suggests that the socialization process unfolds over a newcomer's first year, with

the first 30 days typically involving more intense transitions than the period between 180 days and one-year postentry (Ellis et al., 2015). For example, research has studied newcomers' job satisfaction for the first year (Boswell et al., 2009). Other research also uses a one-year study window (Vandenberghe et al., 2011). Some research efforts focus on members who have been in the organization for less than 2 to 3 years (Rollag, 2004). For example, research has investigated the change in newcomers' received help within the first 6 to 21 months (Jokisaari & Nurmi, 2009). Another research focuses on newcomers' affective commitment for the first 3 years (Maia & Solinger, 2016).

Indicators of Adjustment

Given that socialization entails acquiring knowledge about and settling into one's work context, learning, and adjustment are critical outcomes of socialization. There are several indicators studied in the socialization literature as the proximal indicator of newcomer adjustment. Scholars have developed distinct theoretical frameworks to investigate these indicators. One widely recognized framework by Chan and Schmitt (2000) highlights three critical dimensions of adjustment: task mastery, role clarity, and social integration. The framework is concurred by the meta-analysis in Bauer et al. (2007), using task mastery, role clarity, and social integration as proximal indicators of newcomers' socialization process. Task mastery refers to learning the tasks of the new job and gaining confidence in the role (Bauer et al., 2007; Bauer & Green, 1998; Morrison, 1993a). Resolution of role demands (Feldman, 1981), or role clarity, refers to understanding job tasks to perform and understanding task priorities and time allocation (Bauer et al., 2007), effectively dealing with the ambiguity of one's role (Bauer & Green, 1998). Facets of employees' roles include both content—what the duties are, and process—how effective performance on the duties should be achieved (Schaubroeck et al.,

1993). Social acceptance or social integration refers to coming to feel liked and accepted by peers (Bauer et al., 2007) and developing relationships with co-workers (Morrison, 1993a). It indicates the extent to which one feels a part of and integrated into the social fabric of the environment (Ellis et al., 2015).

Identity construction is also an important indicator. Through socialization, individuals identify with collectives to the extent that they feel similar to other members, they feel a sense of belonging, and they consider themselves to be members (Bullis & Bach, 1989). Newcomers need to establish a sense of the situation and their role within it, that is, to develop and gain a situated sense of self (a sense of who they are)—the process of becoming (Ashforth et al., 2018). Identification has been discussed as both the process of accepting a given identity as a (partial) definition of self and the outcome of forming a stable sense of self (Ashforth & Schinoff, 2016). For example, research has focused on how newcomers experience changes in their organization identification after entry and how these changes are influenced by the changes in the perceived prestige of the organizations and psychological contract fulfillment (Zhu et al., 2017). The becoming process not only exists in the organizational socialization process but also exists in the socialization or identification of any other targets or collectives, such as professions. For example, one qualitative research of junior professionals (consultants and investment bankers) has revealed how people adapt to new roles by experimenting with provisional selves that serve as trials for possible but not yet fully elaborated professional identity by understanding the social and psychological processes by which people construct or modify their professional image and identity (Ibarra, 1999). Another qualitative research has shown that medical residents (newcomers to the professions) might experience work-identity violations, that is, an experienced mismatch between what physicians did and who they were, which triggers the

identity construction process of newcomers' professional identity (Pratt et al., 2006). Another qualitative study using data from an ethnographic study of first-time hospital nurses to investigate how a professional identity persists when it is mismatched with the reality of work demands in one's first job and develop the concept of idealized professional identities—identities rooted in the image and history of an occupation rather than in reality and depict how these identities can persist through client interactions despite negative consequences. For example, nurses with idealized identities infantilized patients and purposefully avoided patients who denied their idealized identities even though these practices ran counter to the patient satisfaction and empowerment goals of the organization and nursing profession. This paper suggests that socialization into a professional role comes from the internalization of idealized professional identities that may be kept alive through interactions with and about one's clients (DiBenigno, 2022).

Socialization and Onboarding Tactics as Antecedents of Adjustment

Organizations have increasingly begun to realize that they can enhance newcomer onboarding and socialization by regulating the formal training and work experiences that newcomers receive early in the socialization process (Saks et al., 2007). First, organizations have different organizational tactics to help newcomers to adapt to the new environment. This is first raised by Van Maanen and Schein (1979), highlighting six dimensions of organizational tactics. These include: 1. Collective or individual: Collective tactics engage newcomers as part of a group, going through common experiences, whereas individual tactics allow newcomers to accumulate unique experiences separate from other newcomers; 2. formal or informal: Formal tactics segregate newcomers from others for off-the-job training, whereas informal tactics mean that newcomers are seldom separated from existing employees; 3. Sequential or random:

sequential tactics clarify the phases newcomers need to go through, whereas random tactics leave the process ambiguous; 4. Fixed or variable: Fixed tactics set a timetable of when the socialization process is complete for newcomers, whereas variable tactics provide no specified timetable; 5. Serial or disjunctive: Serial tactics mean that newcomers are socialized with the help of insiders, whereas disjunctive tactics involve no help of a role model; 6. Investiture or divestiture: Investiture tactics affirm newcomers' identities with feedback from insiders, whereas divestiture tactics disaffirm their identities (Bauer et al., 2007).

Based on the six dimensions, newcomers experience two main types of socialization: institutionalized and individualized socialization. Institutionalized socialization offers structured forms of modeling and social support, common learning experiences as part of a cohort, and timed and sequenced training and orientation activities. Individualized socialization exposes newcomers to individual, informal, and sporadic learning experiences without help and feedback from experienced insiders (Bauer et al., 2007; Fang et al., 2011; Jones, 1986). The socialization literature indicates that institutionalized socialization tactics are more beneficial for newcomers' adjustment. Saks et al. (2007)'s meta-analysis showed that institutionalized socialization tactics reduce role ambiguity, role conflict, and intentions to quit and enhance fit perceptions, job satisfaction, organizational commitment, and job performance. Institutionalized socialization tactics work by decreasing newcomers' uncertainty, lessening anxiety associated with the reality shock of a new environment, and providing information and guidance for requiring desired or necessary attitudes, behaviors, and knowledge (Allen, 2006; Kim et al., 2005; Saks et al., 2007). Furthermore, institutionalized socialization tactics can facilitate newcomers' adjustment because institutionalized socialization tactics enhance newcomers' person-environment fit, particularly person-organization fit and person-job fit (Saks & Ashforth, 1997a; Saks et al., 2007).

Among the various socialization tactics, social tactics (serial and investiture) show the strongest effect on newcomers' adjustment (Saks et al., 2007), subsequently content tactics and then context tactics (Jones, 1986). Cable and Parsons (2001) found that social tactics were most strongly related to newcomers' person-organization fit perceptions, and Allen (2006) found that social tactics were mostly strongly related to newcomers' turnover.

In addition to socialization tactics, organizations can also apply onboarding tactics to aid newcomer adjustment, which refers to formal and informal practices, programs, and policies enacted or engaged in by an organization or its agents to facilitate newcomer adjustment (Klein & Polin, 2012). Onboarding tactics are different from socialization tactics because socialization tactics concern the general approach, not the specific activities that organizations can offer to help socialize newcomers. Onboarding tactics pinpoint exactly what is done—the practices, programs, and policies implemented by an organization. Onboarding tactics focus on specific activities, while socialization tactics focus on how these activities are provided or the delivery of these activities. For example, many onboarding activities could be structured and delivered using a variety of socialization tactics (e.g., giving newcomers a tour of the facility could be done collectively or individually, formally or informally, sequentially or randomly). Furthermore, the different onboarding practices experienced by a newcomer may reflect a mix of different socialization tactics (e.g., some serial activities, others disjunctive; some formal, others informal) (Klein & Polin, 2012). In terms of what activities are included in onboarding tactics, the Inform-Welcome-Guide framework has been proposed to capture these onboarding tactics (Klein & Polin, 2012; Klein et al., 2015) with the aim of ensuring newcomers' success in their new roles and within the organization. INFORM tactics refer to the efforts aimed at providing newcomers with information, materials, and experiences to help them learn what they need to know to be

successful in their new roles and in the organization. The INFORM tactics include: communication efforts, providing resources and training programs. WELCOME tactics refer to practices, programs, and policies aimed at acknowledging and celebrating a newcomer's arrival and providing newcomers with opportunities to meet and socialize with their new coworkers. GUIDE tactics refer to efforts aimed at providing a more "hands-on" personal guide to help the newcomer navigate the transition.

Newcomers Proactivity as Antecedents of Adjustment

In socialization research, significant attention has also been paid to newcomers' proactive behaviors that facilitate their adjustment. Proactive behaviors are essential as organizations may not provide all the information that newcomers need for their socialization, leading newcomers to actively manage their socialization process to reduce uncertainty (Ashford & Black, 1996; Morrison, 1993a).

One key proactive behavior is information seeking, where newcomers proactively seek information about their work roles and organizations (Ellis et al., 2015). To achieve task mastery, newcomers seek technical information—information about how to perform their job tasks—to gain necessary job skills and knowledge (Bauer & Green, 1998; Morrison, 1993a). To achieve role clarity, newcomers seek referent information—information about job requirements and expected role behaviors (Morrison, 1993a). To achieve acculturation, newcomers seek normative information—information about the organization's norms and values—to gain knowledge of the behaviors and attitudes that are expected and rewarded within the organization (Morrison, 1993a). In a meta-analysis, Bauer et al. (2007) synthesized previous literature and categorized newcomers' information seeking into three types: referent information, referring to understanding what is needed to function on the job; appraisal information, referring to

information on how well the newcomer is able to function in relation to role requirement; relational information, referring to information that relates to the quality of relationships with organizational insiders.

Newcomers also actively seek feedback to facilitate adjustment. Feedback seeking represents the active attempt to understand how others in the work environment view a newcomer's behavior (Ellis et al., 2015). To achieve role clarity and task mastery, newcomers seek performance feedback (Morrison, 1993a). To achieve social integration and acculturation, newcomers seek social feedback (Morrison, 1993a).

Ashford and Black (1996) proposed three commonly studied proactive socialization tactics: sense-making, relationship-building, and positive framing. Relationship building represents newcomers' proactive attempt to cultivate important relational resources contributing to social acceptance and adjustment to the group. This can take the form of general socializing, networking, and relationship-building with the boss. Sense-making involves the search for and acquisition of job- and organizational-related information or job performance feedback. Seeking feedback about one's work and performance and information about one's job and role within the organization helps newcomers make sense of their new role and gain clarity about how things work in the organization. Lastly, positive framing is a cognitive self-management mechanism where newcomers actively reinterpret the experiences of uncertainty positively. This can be seen as a type of emotion-focused coping related to newcomers' desire for control, serving as the mechanism through which they enhance their job performance.

Proactive behaviors during socialization have been linked with higher levels of job performance (Ashforth & Saks, 1996; Bauer et al., 2007; Ellis et al., 2015), job attitudes, including job satisfaction (Ashford & Black, 1996; Bauer et al., 2007; Wanberg & Kammeyer-

Mueller, 2000), organizational commitment (Bauer et al., 2007; Song et al., 2017), turnover (Bauer et al., 2007; Wanberg & Kammeyer-Mueller, 2000), and finally, career success (Fang et al., 2011).

Review of Time and Socialization

Socialization, a fundamentally dynamic process, involves experiences that shape newcomer development within a new role and/or collective such as an organization (Ashforth, 2012; Ashforth et al., 2018). The research attempts to answer how learning and adjustment evolve over time when individuals start a new job, along with other aspects of the socialization process. Time has been backstage in most socialization research, but its explicit incorporation into socialization theory is limited. Theoretical discussions have started to consider the role of time in socialization dynamics more explicitly, differentiating between “clock time” and “event time” in the socialization process (Ashforth, 2012; Ashforth et al., 2018). I will summarize what the socialization literature has done based on clock time and event time separately.

Longitudinal Studies of Socialization

Research distinguishes clock time and event time (Ancona et al., 2001; Ashforth, 2012; Bluedorn & Denhardt, 1988). Clock time, an objective concept of time, is viewed as unitary (subject to only one interpretation), linear (progressing steadily forward from past to present to future), and mechanical (containing discrete moments subject to precise measurement) (Bluedorn & Denhardt, 1988). Clock time depicts the continuum as linear—infininitely divisible into objective, quantifiable units such that the units are homogeneous, uniform, regular, precise, deterministic, and measurable (Ancona et al., 2001). Clock time is the default assumption of most socialization research. Longitudinal socialization studies typically administer questionnaires at set intervals, implicitly assuming that change in the dependent variable occurs

at a more or less steady pace (Ashforth, 2012). For instance, task mastery is expected to be higher at Time 3 than at Time 2 and higher at Time 2 than at Time 1. The assumption is that the work context exerts a steady and relentless influence on the newcomer, resulting in gradual changes in their adjustment, attitudes, and behaviors.

Many studies have tracked changes in newcomer adjustment indicators based on clock time assumption. For example, research has repeatedly measured newcomers' task mastery, role clarity, and social integration every month for 4 months and found increasing trajectories of task mastery, role clarity, and social integration (Chan & Schmitt, 2000). Research has repeatedly measured newcomers' role clarity every 2 weeks for 7 weeks and found an inverted U-shaped relationship between newcomers' intra-unit peer connections and the growth in role clarity, but no significant relationship between their inter-unit peer connections and the growth in role clarity (L. Zhou et al., 2021). Other research has focused on expatriate adjustment and repeatedly measured work adjustment every month for 3 waves and found a decrease in work adjustment (Firth et al., 2014). However, another research on expatriate adjustment has repeatedly measured work adjustment every 1 month for 9 months and found a curvilinear increasing and slowing down increasing trajectory of work adjustment (Zhu et al., 2016).

Researchers have tracked changes in newcomer behaviors based on clock time assumption. For example, research has repeatedly measured newcomers' information seeking from different targets at their first week, third month, sixth month, and one year and found decreasing information seeking from mentors, coworkers, and other newcomers but a stable trajectory in newcomers' information seeking from supervisors (De Vos & Freese, 2011). Another research has repeatedly measured newcomers' performance every 21 days for 3 waves during their 66-100 days, and the findings suggest that the initial team performance influences

newcomer performance improvement, and newcomer performance improvement influences subsequent team performance (Chen, 2005). Another research repeatedly has measured different proactive socialization tactics, including positive framing, networking, general socializing, information seeking, building relationships with the boss, job-change negotiation, and feedback seeking every month for 4 months and mapped out how newcomers shift their application of various proactive socialization tactics over time (Song et al., 2017).

Research has tracked changes in newcomer job attitudes based on clock time assumption. For example, researchers have repeatedly measured newcomers' job satisfaction every year for five years (Boswell et al., 2005) or measured newcomers' job satisfaction on newcomer first day, third month, sixth month, and one year (Boswell et al., 2009) and found that there would be an increase in job satisfaction (honeymoon effect) first and decrease in job satisfaction after (hangover effect). Research has repeatedly measured role stressors and job attitudes every 3 months for 3 waves and found that newcomers' role conflict and role overload increased, leading to a decline in affective commitment and satisfaction, respectively, which further led to the increase in turnover intention (Vandenberghe et al., 2011), thus confirming the hangover effect. Research has also shown there might other possible changing trajectories of newcomers' job attitudes. For example, research has measured newcomers' affective organizational commitment every week for the first 25 consecutive weeks and found that besides the honeymoon-hangover trajectory, there were other trajectories, such as learning to love (increasing trajectory) and more stable trajectories, including High Match (remaining relatively high and stable), Moderate Match (remaining relatively moderate and stable), and Low Match (remaining relatively low and stable) (Solinger et al., 2013). Another research repeatedly measured newcomers' affective organizational commitment every 1 year for 3 years and found that 62% of newcomers

experience a decline in affective commitment, and other people experience growth in affective commitment (Maia & Solinger, 2016).

Research has also tracked changes in newcomer social environments based on clock time assumption. For example, research has repeatedly measured newcomers' supervisor support every 6 months for 4 times found a decrease in supervisor support (Jokisaari & Nurmi, 2009). Another research has repeatedly measured social support and social undermining from supervisors and coworkers every week for 14 weeks and found decreases in social support from supervisors and coworkers but no changes in social undermining from supervisors and coworkers. The findings indicate that early support and undermining demonstrated stronger associations with work outcomes assessed after 90 days of employment compared to changes in support and undermining over time, whether in the form of increases or decreases (Kammeyer-Mueller et al., 2013). Another research has repeatedly measured newcomer coreness centrality and in-degree centrality among cohort newcomers every 2 months for 4 waves and found that the competitive orientation positively related to the increases in coreness centrality and cooperative orientation positively related to the increase in in-degree centrality among cohort newcomers, which further leaders task assistance from other newcomers and in turn reduces their likelihood of leaving the organization (J. Zhou et al., 2021).

Event Studies of Socialization

Although the assumption that time is linear and changes happen gradually is held by most socialization literature, the assumption might be problematic. Learning and adjustment are susceptible to disruption, as well as employees' attitudes and behaviors. In contrast to clock time, event time refers to the use of discrete episodes to frame the passage of time (Ashforth, 2012). It uses event as a reference point for things that happen before and after (Ancona et al., 2001).

Event time is shaped by events rather than the clock, which may create temporal rhythms inconsistent with the objective notion of time (Bluedorn & Denhardt, 1988; Shipp & Jansen, 2021).

For newcomers, learning and adjustment are episodic, typically driven by episodes that precipitate new experiences, reflection, and perhaps reinterpretation of previous episodes (Ashforth, Sluss, & Harrison, 2007). Planned and unplanned events will happen, thus disrupting the linear changes. Therefore, significant and discontinuous learning and adjustment can occur in the wake of an event. Events, regardless of their magnitude in an objective sense, could lead to substantial changes. For example, being invited to lunch may be a small gesture, but it conveys a significant lesson to an anxious newcomer (Ashforth, 2012). Only scattered research has mentioned the role of events in newcomer socialization process.

One type of event that provokes cognition is the surprise. Surprise represents a difference between an individual's anticipation and subsequent experiences in the new settings (Louis, 1980). When newcomers experience events that differ from predictions, it triggers a need for explanation or post-diction. This process involves developing interpretations of discrepancies attributing meanings to surprises. Based on the attributed meanings, any necessary behavioral responses are selected. There are several forms of surprise. The first form of surprise occurs when conscious expectations about the job are not fulfilled in the newcomer's early job experiences. The second form of surprise arises when expectations (both conscious and unconscious) about oneself are unmet. The third form of surprise arises when unconscious job expectations are unmet or when features of the job are unanticipated. The fourth form of surprise arises from difficulties in accurately forecasting internal reactions to a particular new experience. What will happen (the external events) may be accurately anticipated, whereas how it will feel

(the internal experience of external events) may not be accurately assessed by the individual.

Another study conducted by Gundry and Rousseau (1994) used an open-ended, qualitative instrument to collect newcomers' critical incidents—events that made an impression about what it is like to work here. The researchers requested the newcomers to provide a comprehensive account of events, including specific details such as the incident itself, the individuals involved, the time it occurred, as well as the observed behavior and the informant's interpretation of organizational practices and their own role within it. They categorized all critical incidents into the conflict between supervisor and subordinate, supportiveness of supervisor, inequity in promotion or reward, shift to a new assignment, the conflict between co-workers, reverence for authority, menial work assignment, the conflict between departments, alienation from workgroup or manager, cooperation between co-workers, work on a challenging project, violation of policy or rule, acquiring greater responsibility, casual dress code, social interaction, initiative taken by subordinate, salary unmatched to performance. They found that critical incidents impact beliefs regarding cultural norms through their effect on the frame of the message newcomers derive from the events, which further influences role conflict and role clarity.

Finally, a study conducted by Bullis and Bach (1989) used interviews and asked individuals to identify and plot all turning points in the individual-organization relationship. A turning point is any event or occurrence that is associated with a change in a relationship, and turning points constitute the substance of change. Many events can be turning points in socialization. For example, moving in, gaining informal recognition (general, informal, positive comments), gaining formal recognition (receiving awards bestowed by the organization or receiving positive feedback for successfully completing organizational tasks), representing the

organization, disappointment and so on.

Review of Job Rotation

Definition of Job Rotation

Job rotation suffers from inconsistent definitions across different domains. Furthermore, it is often conflated with similar concepts leading to a muddled understanding. In an attempt to provide a clear delineation, I delve into the various perspectives offered by different fields alongside the issues plaguing the current definition of job rotation. In the field of Ergonomics, job rotation is largely defined as workers rotating between tasks within a job or between activities as a means to vary different levels of exposure (Leider et al., 2015) or a strategy for alternating workers between tasks with different exposure levels and occupational demands, which aims at avoiding overloading specific body parts (Padula et al., 2017). The premise of job rotation is that workers rotate from job to job in a given time period, with the objective of minimizing the accumulated biomechanical loading on a particular body part for all workers (Jorgensen et al., 2005).

In the Management literature, some researchers define job rotation as a lateral transfer of an employee between jobs within a company (Kampkötter et al., 2018) without a change in the hierarchical rank or salary grade. Therefore, they suggest that job rotation refers to a move to another function with new responsibilities, tasks, and a new job title that is not a promotion. Others define job rotation as the lateral transfer of employees among a number of different positions and tasks within jobs where each requires different skills and responsibilities (Huang, 1999) or the planned movement of people between jobs over a period of time and for one or more of a number of different purposes (Bennett, 2003; Khan et al., 2014; Megheirkouni, 2016).

However, a common issue of the definition of job rotation is the mismatch between the definition and the operationalization of job rotation. For example, Campion et al. (1994) define

job rotation as lateral transfers of employees between jobs in an organization. Rotated employees usually do not remain on jobs permanently but also do not usually return to their former jobs. However, job rotation was operationally defined as any change in job title or department that did not coincide with an increase in salary grade level.

Another issue is that sometimes the definition of job rotation is a mix of content, design and purposes. For example, some research defines job rotation as a planned replacement of employees among various jobs within a period of time in order to enhance skills and job independence and results in increasing motivation, job performance, and productivity (Dhanraj & Parumasur, 2014). Some research defines job rotation as training programs that assign new hires to work for specified periods in various departments, and business units of geographic locations (Frase-Blunt, 2001). Such definitions conflate the concept with its potential outcomes.

Drawing upon the diverse viewpoints and aiming to address the common issues, I define job rotation as the planned movement of employees between jobs within one organization over a certain period (Bennett, 2003; Frase-Blunt, 2001). This definition emphasizes two key aspects: first, job rotation is a planned movement rather than random lateral job transfer. Second, job rotation is within a specific certain period rather than permanent job change. In the following sections, I try to specify the boundaries of this construct by more clearly distinguishing job rotation from other related concepts.

Although some researchers study job rotation merely as internal-lateral job transition or job transfer (Campion et al., 1994; Kampkötter et al., 2018), job rotation is distinct from internal lateral transfer, which refers to intra-organizational transitions that entail a change in function, hierarchical level, department and/or work location (Verbruggen et al., 2015). First, job rotation and internal-lateral job transition differ in the temporal relationship with the transferred

positions. Rotated employees usually do not remain on the job permanently. Upon finishing the rotation program, employees usually do not determine their final positions (Frase-Blunt, 2001). A job rotation program prepares employees for appointment to substantive positions (Bennett, 2003). By contrast, internal lateral job transitions often mean that employees would stay in the transitioned positions (Ostroff & Clark, 2001). Second, most job rotations are well-planned, while internal-lateral job transitions take place in a more random way. In a rotation program, the program length, duration of assignments, and types of assignments are usually structured and planned at the organizational level (Dailey, 2016). The lateral internal-lateral job transition, by contrast, is usually random and non-structured. For example, internal lateral job transitions might take place during downsizing (Armstrong-Stassen, 2003).

This redefinition and distinguishing exercise aim to offer a more robust and distinctive understanding of job rotation, setting the stage for a comprehensive exploration of its boundaries in the following sections.

Consequences of Job Rotation

Job rotation is a common practice that has several aims, including assessing new employees' interests and skills to determine their final placement, facilitating a deep immersion into the organizational business and culture, acclimating employees to foreign environments, and preparing future managers and executives (Frase-Blunt, 2001). However, it is not without limitations. Bennett (2003) outlined possible benefits and possible limitations of job rotation. These benefits include accelerated development of new members, a powerful way of developing organizational high-fliers, spreading individuals' expertise more widely within the organization, and the development of social as well as individual human capital by establishing and developing new relationships across the organization. However, there are also limitations, such as the high

demand for the support of the colleagues of participants and the resources required for the organization. Although such discussions highlight the influence of job rotation, the empirical evidence still remains limited, which I will present below.

The effectiveness and impact of job rotation have received the most empirical testing in the field of Ergonomics. Job rotation is used in the manufacturing industry to reduce work-related exposure and prevent musculoskeletal disorders associated with highly repetitive movements. The studies provide conflicting evidence. According to a review paper, the existing evidence regarding the positive or negative effects of job rotation on musculoskeletal complaints and related exposures is inconclusive (Leider et al., 2015). Another review paper suggests that only weak evidence exists supporting job rotation as an effective strategy for the prevention and control of musculoskeletal disorders and to reduce exposure to physical factors, regardless of the target of rotation (Padula et al., 2017). This review paper also suggests that improvements in job satisfaction as a result of job rotation were observed in some studies, although the studies reporting such outcomes were deemed to have only fair methodological quality. A 1-year cluster randomized controlled trial showed that Job rotation did not yield positive results in terms of minimizing the amount of working hours lost due to sick leave, reducing the prevalence of musculoskeletal symptoms, improving the perception of musculoskeletal pain and workplace risk factors, psychosocial risk factors, or enhancing productivity (Comper et al., 2017). It is important to note that, however, the job rotation implemented in Ergonomics studies differs significantly from that explored in management literature. For example, the interval of job rotation in the manufacturing industry is usually 2 hours (Comper et al., 2017), and the emphasis is placed on the physical consequences as opposed to employee development and learning.

Though empirical evidence regarding the implications of job rotation can be found within

the field of Management, it's essential to note that these studies often exhibit various limitations. For example, research has suggested that job rotation might have benefits in performance and productivity, increasing employee motivation and learning, thus performance (Kampkötter et al., 2018). Their findings suggest that those having been rotated between jobs achieve a higher performance in subsequent years as compared to other non-rotating employees in a comparable position. However, they operationalized job rotation only as a lateral transfer of an employee between jobs within a company.

Studies suggest that job rotation can bolster employees' job attitudes, although the quality of empirical testing supporting this claim remains subpar. For example, one study has found that job rotation is positively related to job satisfaction and evaluation of training effectiveness (Huang, 1999). However, they measured job rotation at the organization or company level. The item of the measure of job rotation is whether the company practice job rotation, but not whether employees really experience job rotation. Another study has shown that job rotation is positively related to organizational commitment and job performance (Khan et al., 2014). However, in this study, it is not clear how job rotation was measured. Some studies focusing on nurses have also revealed that job rotation is positively related to job satisfaction, which is further related to organizational commitment (Chen et al., 2015; Ho et al., 2009). However, their measurement of job rotation is more about employees' attitudes toward job rotation. For example, one sample item was "Overall, I like a fair job rotation system." It is unsurprising that they observed a positive relationship between job rotation and job satisfaction or organizational commitment. A survey report, but not a peer-review paper, indicates that retention rates for one year and five years were elevated for employers that had rotational programs (National Association of Colleges and Employers, 2017).

Job rotation can contribute to leader development. Job rotation is often considered a key instrument for management development, as lateral assignments typically coincide with a change in job content and necessary skills. Employees who experience job rotations potentially acquire broad knowledge, a good network, and a variety of relevant leadership experiences by fulfilling a variety of positions across the organization's different units (Megheirkouni, 2016). However, these assumptions have not been extensively tested empirically, except that research has found that job rotation can bring career-related outcomes. For example, the rotation rate is positively related to promotion, salary growth, acquisition of administrative skills and business skills, career affect, stimulating work, and personal development, as well as decreased satisfaction and motivation (Campion et al., 1994). The problem of this paper is that they operationalized job rotation as "any change in job title or department that did not coincide with an increase in salary grade level" (p.1525). This operationalization aligns more closely with the concept of internal lateral transfer rather than job rotation.

Indirect evidence suggests that job rotation could potentially bring negative consequences. Campion et al. (1994) illustrate the potential costs of job rotation. For example, the need to teach employees new jobs can increase both the time spent learning in an organization and direct training expenses. There may be a rise in errors employees make while learning new jobs and a loss of efficiency based on specialization and repetition. Productivity losses and workload increases could happen for both the department gaining a rotating employee and the department losing the employee.

Additionally, research highlights the possible negative consequences of job rotation on newcomers. Research has suggested that new hires assigned to a series of short-term job positions experience uncertainty because they do not know when and where they will be

permanently placed; thus, they experience identity stress because it is difficult to develop a coherent work-related identity, thereby leading to lower satisfaction (Mansfield, 1972). Another research suggests that most newcomers perceive the shift to new assignments as a negative experience (Gundry, 1993).

Although not directly focusing on job rotation, theory and past research on work transitions suggest that work transitions could act as stressors associated with negative outcomes in terms of physical and psychological health (Moyle & Parkes, 1999). Research has found that lateral job transfer can induce feelings of insecurity (Armstrong-Stassen, 2003). Verbruggen et al. (2015) propose that internal job transitions can be stressful, although the stress can be either motivating or demotivating, depending on the types of demands the internal job transitions entail. Transition challenges (i.e., horizontal and vertical transition magnitude) satisfy people's basic psychological needs and may therefore enhance motivation and retention, whereas transition hindrances (i.e., increased work-life conflict) thwart basic needs satisfaction and are accordingly likely to decrease motivation and retention. Job transitions can instigate stress as they entail uncertainty and change, necessitate learning new skills and responsibilities, tax the individual's capacity to respond, and threaten a person's self-concept.

In summary, studies examining the consequences of job rotation present certain limitations. First, there is scant empirical evidence illustrating how job rotation influences employees' learning and development. Second, the limited empirical testing on the consequences of job rotation generally suffers from low quality, often due to the operationalization and measurement of job rotation. Third, given that job rotation—by definition—spans a period of time, it is surprising that basically, no research investigates the consequences of job rotation from a dynamic perspective. Specifically, while job rotation is commonly employed in attracting and

training newcomers, there is a notable lack of research investigating how it influences newcomers' adjustment process from a dynamic perspective.

Conclusions of the Literature Review

After reviewing the literature, it is clear that although socialization research has made significant progress, there are still several areas that require further exploration. First, as introduced, there is an implicit assumption in most socialization studies that time is linear, with changes unfolding at a relatively steady pace. Consequently, such studies often rely on occasional snapshots of newcomers. For example, task mastery would be expected to improve progressively, being less at Time 1 (T1) than at T2, and less at T2 than at T3. This suggests a presumed steady and consistent influence of the work context on the newcomer, resulting in gradual change. However, the assumption that time is linear is problematic because newcomers often encounter events that dramatically disrupt the gradual change patterns (Ashforth, 2012; Ashforth et al., 2018). Unfortunately, the role of events during socialization process has been largely ignored in the literature, with only scattered discussions (Bullis & Bach, 1989; Gundry & Rousseau, 1994; Louis, 1980). This limits our understanding of the nature of socialization process.

Second, although the socialization literature acknowledges the crucial role organizations play in facilitating newcomers' adjustment and learning, there are still two issues that remain unsolved. First, our understanding of the influence of specific socialization tactics, such as job rotation, is still lacking in the literature. The current socialization theory fails to explain the influence of job rotation. One possibility is that job rotation, like other institutionalized socialization tactics, benefits newcomers' adaptation by providing "sequences and likely timetables for newcomers' job activities and progress" (Cable & Parsons, 2001, p. 6), thus reducing the uncertainty that newcomers might face. Therefore, job rotation, as one of the

planned and structured events, might facilitate newcomer adjustment and adaptation process. An alternative possibility is that job rotation hinders newcomers' adaptation process (Dailey, 2016; Mansfield, 1972). Research from internal job transition provides indirect evidence that changes in jobs might entail uncertainty, thus increasing stress (Armstrong-Stassen, 2003; Moyle & Parkes, 1999; Verbruggen et al., 2015). Job rotation, as one of the disruptive events, makes adjustment and adaptation more difficult and prolonged for newcomers. Second, research on socialization tactics is often from a static perspective, with a focus on how socialization tactics influence adjustment outcomes and relying heavily on lagged surveys (Ashforth, Sluss, & Saks, 2007; Saks et al., 2007). A dynamic perspective is lacking, thus making what really goes on in real time—what specific practices and events enact the socialization tactics and how newcomers experience them—unknown (Ashforth et al., 2018).

Third, previous research on individual differences in the socialization process has mostly focused on how these differences influence newcomers' adaptation outcomes. However, limited research is devoted to understanding how individual differences influence newcomers in coping with disruptive event, which are likely to occur during the socialization process. Newcomers need to cope with disturbances in socialization and the caused fluctuation in newcomers' adaptation process (Ashforth, 2012) and coping with such disruption is essential for successful socialization. More research is needed to investigate how different people respond to and cope with predicted or unpredicted disruption.

Fourth, although socialization literature, research has focused on how newcomers identify with organization (Zhu et al., 2017), little research has focused on how newcomers identify with professions and develop their professional identity. This is unfortunate for two reasons. First, research has suggested that individuals are becoming increasingly committed to their

occupations and professions (Anteby et al., 2016) and tend to identify more strongly with their occupations or professions than with their organizations (Ashforth et al., 2013; Johnson et al., 2006). For example, employees' attitudes toward their profession could be stronger predictors of their intentions to quit their organization than organizational commitment (Lee et al., 2000). However, organizational research has long focused mainly on organizational identification and neglected professional identification (Ashforth et al., 2013; Dierdorff, 2019). Given the rising salience of professional identification, exploring the factors that influence it is crucial. Second, some theoretical discussions suggest that the formation of professional identification is a dynamic and ongoing process (Ashforth et al., 2008; Caza et al., 2018; Miscenko & Day, 2016) and prior research suggests that professional identity is mutable or malleable in the earlier stages of one's career (Ibarra, 1999). Some scholars argue that professional identity formation and change are most pronounced among new entrants (Ashforth et al., 2008; Pratt et al., 2006). Therefore are some qualitative research about how newcomers manage professional identity (DiBenigno, 2022; Pratt et al., 2006). However, there is no research investigate how newcomers' professional identification waxes and wanes during socialization process.

In summary, these gaps in the socialization literature indicate that further research is essential to gain a better understanding of the socialization process, including the role of both planned events and unplanned events in shaping this process. It is also necessary to investigate the factors that influence how newcomer react to these events. The knowledgd would be critical in facilitating newcomers' socialization, including their adjustment, learning and identity construction.

CHAPTER 3: STUDY 1

Given the turbulent economic environment and the increasing mobility of the workforce, effective and efficient socialization is more relevant but more challenging for organizations (Ashforth, 2012; Ellis et al., 2015; Fang et al., 2011; Ng et al., 2007; Saks et al., 2007). Organizations use institutionalized socialization tactics—formalized developmental programs for newcomers—to facilitate the socialization process (Ashforth, Sluss, & Saks, 2007), which indeed contribute to better newcomer adjustment (for reviews, see Allen et al., 2017; Bauer et al., 2007; Saks et al., 2007). Although valuable, previous studies rely heavily on occasional snapshots of newcomers, leading to a rather static picture and failing to elucidate the nuanced dynamics caused by institutionalized socialization tactics. Specifically, little is known about what actually goes on in real-time—what specific practices and events enact the socialization tactics and how newcomers experience them (Ashforth, 2012; Ashforth et al., 2018).

For example, one commonly used socialization tactic in practice is *job rotation*, or the planned movement of employees between jobs within one organization over a certain period (Bennett, 2003; Frase-Blunt, 2001). A recent report has shown that around 43.8% of employers in the U.S. utilize rotational programs for new hires, with this figure rising to over half for employers with more than 5,000 employees (National Association of Colleges and Employers, 2017). During job rotation programs, newcomers are usually assigned to work for specified periods in various departments or business units (Frase-Blunt, 2001) before working in their formal positions. This arrangement leads to changes in newcomers' work environment, including both the task environment and social environment. Consequently, job rotation could introduce discontinuity in the newcomer adjustment process. Such a discontinuous adjustment process contradicts the long-held assumption in most socialization research that time is linear and changes unfold at a more or less steady pace gradually (Chan & Schmitt, 2000; Jokisaari & Nurmi, 2009; Vandenberghe et al.,

2011). However, the discontinuous adjustment process remains poorly understood, with sparse theoretical discussions (Ashforth, 2012; Ashforth et al., 2018), which impedes the development of a comprehensive view of the socialization process under the impact of institutionalized socialization tactics.

Therefore, despite the prevalent use of job rotation for developing newcomers in practice and the unique experience it affords, existing theories fail to fully explain the impact of job rotation on newcomers' experience, especially from a dynamic perspective. One possibility is that job rotation, like other institutionalized socialization tactics, benefits newcomers' adaptation by providing "sequences and likely timetables for newcomers' job activities and progress" (Cable & Parsons, 2001, p. 6), thus reducing the uncertainty that newcomers might face. Therefore, job rotation, as one of the planned and structured events, might facilitate newcomer adjustment and adaptation process. An alternative possibility is that job rotation hinders newcomers' adaptation process (Dailey, 2016; Mansfield, 1972). Research from internal job transition provides indirect evidence that changes in jobs might entail uncertainty, thus increasing stress (Armstrong-Stassen, 2003; Moyle & Parkes, 1999; Verbruggen et al., 2015). Job rotation, as one of the disruptive events, makes adjustment and adaptation more difficult and prolonged for newcomers.

In light of the conflicting perspectives on job rotation's impact on newcomers' adaptation process, I seek to expand the socialization literature by formally conceptualizing job rotation and investigating its effects. Drawing from the adaptation literature (Lang & Bliese, 2009; Niessen & Jimmieson, 2016; Niessen & Lang, 2021), I theorize job rotation—one common practice of socialization tactics—as a planned disruptive event, which triggers two adaptation processes: disruption adaptation (newcomer adaptation process to minimize performance decrease) and recovery adaptation (newcomer adaptation process to quickly regain their performance levels). I

contend that job rotation can cause a discontinuity in newcomers' adaptation processes in terms of two important adjustment outcomes—*task mastery* (i.e., newcomers' performance and mastery of their job tasks) and *social integration* (i.e., newcomers' development of personal relationships with coworkers and integration into the work group) (Chan & Schmitt, 2000). By incorporating the discontinuous adaptation perspective into the job rotation context, my research aims to advance the socialization literature by more accurately capturing newcomer experiences in the face of disruptive events caused by specific socialization tactics (Ashforth, 2012; Ashforth et al., 2018).

Examining the discontinuous adaptation process caused by job rotation can also deepen our understanding of *when* job rotation is more or less disruptive to newcomers. I propose that job rotation's impact on newcomers' adaptation processes depends on their ability to minimize disruption and maximize recovery. Both individual differences (dispositional antecedents) and initial challenging experiences (situational antecedents) are crucial factors in newcomer adaptation (Ashforth & Saks, 1995). Firstly, I explore the influence of newcomers' learning orientation and proactive personality on their adaptation to disruption following job rotation. While previous research has investigated how individual differences affect newcomers' adaptation outcomes, limited research is devoted to understanding how individual differences help newcomers cope with disruptive events. Secondly, I explore the influence of newcomers' initial challenging experience on newcomers' recovery from disruption after job rotation, including both cognitively challenging experience—job complexity and socially challenging experience—social undermining. Early events tend to exert a disproportionate impact on newcomers' socialization experience, with initial challenging work experiences being particularly important (Ashforth, 2012). Understanding the factors that influence newcomers' adaptation process helps to shape effective interventions and policies, including designing and leveraging the benefits of job rotation programs.

Hypotheses Development

Newcomers' Adaptation Process During Job Rotation

Adaptation is defined as “cognitive, affective, motivational, and behavioral modifications made in response to the demands of a new or changing environment, or situational demands” (Baard et al., 2014, p. 50). The process perspective of adaptation posits that once a change is introduced, an adaptive process is initiated. This perspective emphasizes “the process by which an individual achieves some degree of fit between his or her behaviors and the new work demands created by the novel and often ill-defined problems resulting from changing and uncertain work situations” (Chan, 2000, p. 4). Consequently, the adaptation process “unfolds over time” (Baard et al., 2014, p. 78). Typical research on the adaptation process utilizes a task-change paradigm, including studies measuring performance following task changes (Bell & Kozlowski, 2002; Chen et al., 2005) and longitudinal performance change following a task change occurs (Lang & Bliese, 2009; Niessen & Jimmieson, 2016; Niessen & Lang, 2021).

It has been suggested that to gain deeper insights into the adaptation process, and researchers must specify aspects of the situation to which adaption is required or consider findings within and across various study contexts (Chan, 2000; Jundt et al., 2015), for example, by integrating research on newcomer adaptation (Huang et al., 2018). I integrate general adaptation literature and newcomers' adaptation process to explain newcomers' adaptation process during job rotation. Changes in the work environment require adaptation, and newcomers' entry into a new organization or team belongs to such changes. Therefore, socialization is the process through which newcomers adapt to their new work environment (Chan & Schmitt, 2000; Chen, 2005). Since learning and assimilation are two major tasks of newcomers (Fang et al., 2011), task mastery and social integration are the two most important adaptation indicators in the socialization process.

As newcomers adapt to the new environment, they experience an increase in task mastery and social integration (Chan & Schmitt, 2000).

Job rotation refers to the planned movement of employees between jobs within an organization over a certain period of time (Bennett, 2003; Frase-Blunt, 2001). Job rotation means that newcomers need to transfer to a different department, which causes changes in newcomers' work environment. Therefore, job rotation reshapes newcomers' adaptation process to include adaptation to disruption and recovery from disruption (Lang & Bliese, 2009; Niessen & Jimmieson, 2016; Niessen & Lang, 2021). Adaptation to disruption is a flexible and immediate reaction after changes that helps individuals to minimize performance decreases (Lang & Bliese, 2009). Following the initial decrease in performance triggered by the changes in the task, individuals might improve their performance as they continue to perform the changed task. Recovery from disruption refers to the process of recovering following the immediate performance loss after a change (Lang & Bliese, 2009), which helps individuals to quickly regain their performance levels. Therefore, the immediate decrease in newcomers' task mastery and social integration after job rotation captures newcomers' adaptation to disruption, and the increase in newcomers' task mastery and social integration after job rotation captures newcomers' recovery from disruption. In summary, job rotation creates a unique adaptation process for newcomers and divides newcomers' socialization and adaption process into three stages: initial adaption in the first department, adaptation to disruption, and recovery from disruption in the second department.

Newcomers' Adaptation to Disruption and Recovery from Disruption after Job Rotation

I propose that although newcomers' task mastery and social integration increase in the first department, their task mastery and social integration will immediately decrease after transferring to the second department and increase again during the second department. Existing socialization

research has shown that newcomers experience increases in both task mastery and social integration (Chan & Schmitt, 2000). Newcomers “learn the ropes” of an organization and adapt to new roles within it (Van Maanen & Schein, 1979, p. 211). Through socialization, newcomers need to learn the tasks of the new job and come to feel accepted by peers and work groups (Bauer et al., 2007). Therefore, newcomers’ task mastery and social integration increase over time in the first department.

However, job rotation, as a well-planned disruptive event, causes changes in newcomers’ work environment, including task environment and social environment, thus triggering newcomers’ adaptation to disruption and recovery from disruption (Chan, 2000; Lang & Bliese, 2009; Niessen & Jimmieson, 2016; Niessen & Lang, 2021). In other words, job rotation causes disruption in newcomers’ task mastery, leading to an immediate decrease in task mastery after transferring to the second department. Rotating to the second department is like a new wave of socialization in which newcomers need to adapt to new responsibilities and tasks. Since they are not familiar with the new environment, they may experience new surprises (Louis, 1980). They realize that there is a lot new to learn to perform their tasks in the new department. Jobs in different departments may require different skills and knowledge, and newcomers need time to learn and acquire these new skills and knowledge. Therefore, they might experience a decrease in task mastery immediately after transferring to the second department. After learning the tasks, they will go through an increase in task mastery again. In contrast, newcomers who do not experience job rotation stay in the same department and deal with the same work content. They will not experience a sudden disruption in task mastery because they continue to learn the same job responsibilities and tasks.

Similarly, I propose that job rotation causes disruption to newcomers’ social integration, leading to an immediate decrease in social integration after transferring to the second department.

After transferring to the second department, they need to work with different coworkers they are unfamiliar with. They might feel like outsiders again in the second department. The sense of social integration drops, and they need to build relationships with new coworkers, get integrated into the new work group, and adapt to the new social environment. Therefore, newcomers might experience a decrease in social integration immediately after transferring to the second department. After building relationships with new coworkers, they will go through an increase in social integration again. On the contrary, newcomers who do not experience job rotation stay in the same department and work with the same co-workers. They will not experience a sudden disruption in social integration because they continue to build social relationships with the same co-workers and get socially integrated in the same workgroup. Figure 1.1 depict the hypothesized trajectories of task mastery and social integration impacted by job rotation.

H1a. Compared to newcomers without job rotation, newcomers with job rotation experience an immediate decrease (disruption) in task mastery after rotation.

H1b. Compared to newcomers without job rotation, newcomers with job rotation experience an immediate decrease (disruption) in social integration after rotation.

H1c. Newcomers with job rotation experience an increase (recovery) in task mastery in the second department.

H1d. Newcomers with job rotation experience an increase (recovery) in social integration in the second department.

Functions of Individual Differences on Newcomers' Adaptation to Disruption after Job Rotation

Job rotation will cause discontinuity in newcomers' adaptation process. Thus, job rotation triggers newcomers' adaptation to disruption because newcomers experience changes in tasks and interpersonal relationships. I argue that newcomers' adaption to disruption can be influenced by

how newcomers minimize the decrease in task mastery and social integration. Personality traits capture newcomers' general predispositions that can drive individuals to cope with changes or threats positively and quickly therefore helping them avoid damage and losses. In the current study, I investigate two such variables: (1) learning orientation that influences newcomers' adaptation to disruption in task mastery after job rotation; (2) proactive personality that influences newcomers' adaptation to disruption in social integration after job rotation.

Learning orientation refers to individuals' tendencies to seek to increase their competence, to understand or master something new (Dweck, 1986). Learning orientation is generally associated with individuals' adaptation (Baard et al., 2014; Bell & Kozlowski, 2008; Bell & Kozlowski, 2002; Chan, 2000; LePine, 2005) because it influences how individuals adapt to changes and challenges. Individuals with a higher level of learning orientation have adaptive motivation patterns (Dweck, 1986; LePine, 2005) that maintain effective striving toward individual goals. They are open to and interested in learning from new experiences (VandeWalle et al., 2001), thus tend to view the changes as a challenge and continue to strive despite the negative feedback that is likely to accompany novel tasks (LePine, 2005). They focus on progress and mastery and see obstacles as a cue to increase their effort or to analyze and vary their learning strategies, which often results in a good performance in the face of obstacles (Ashforth, 2012; Bell & Kozlowski, 2002; Dweck, 1986).

Following this logic, I propose that learning orientation facilitates newcomers' adaptation to disruption of task mastery; that is, learning orientation leads to a smaller immediate decrease in task mastery. Newcomers with a higher level of learning orientation see job rotation as an opportunity to enhance their skills and highly value these experiences. Their goals are learning and growing, therefore, mastering new knowledge (VandeWalle, 1997). They intensify their learning

goal pursuit activities when confronting obstacles (DeShon & Gillespie, 2005). They direct and sustain effort toward goals, which will maintain their task mastery via persistently learning and mastering new job tasks. Therefore, newcomers with a higher level of learning orientation suffer a smaller immediate decrease in task mastery. In contrast, individuals with a lower level of learning orientation become overwhelmed in the face of challenges attempting to protect their self-image, which distracts their effort into goal striving and thus experience performance deterioration (Derue & Wellman, 2009). Therefore, when faced with the disruption caused by job rotation, newcomers with a lower level of learning orientation suffer a greater immediate decrease in task mastery.

H2. Learning orientation is positively related to newcomers' adaptation at the disruption stage, that is, newcomers with higher learning orientation experience a smaller immediate decrease in task mastery after job rotation.

Proactive personality refers to the general disposition to make active attempts to effect changes in one's environment (Chan & Schmitt, 2000; Seibert et al., 1999). Proactive personality is a stable disposition toward proactive behaviors. Proactive personality helps newcomers to change their social environment, thus increasing their social integration. Research has documented the positive relationship between proactive personality and social integration (Chan & Schmitt, 2000; Kammeyer-Mueller & Wanberg, 2003) and also the positive relationship between proactive behaviors and social integration (Bauer et al., 2007; Chan & Schmitt, 2000; Morrison, 1993a).

I propose that the proactive personality facilitates newcomers' adaptation to disruption of social integration, that is, proactive personality leads to a smaller immediate decrease in newcomers' social integration after job rotation. After newcomers transfer to a new department, the social environment totally changes, and there will be a sudden decrease in their social integration, which requires newcomers' adaptation to disruption. Proactive personality influences

newcomers' adaptation to disruption since proactive personality generates proactive goals and strives to achieve them (Zhu et al., 2014). Newcomers with a higher level of proactive personality proactively engage in regulatory strategies, which may enable them to adapt more effectively (Chen & Firth, 2014; Firth et al., 2014). In other words, they immediately take action and devote effort to change the social environment. They identify opportunities and act on them proactively. They initiate social activities, build relationships, and build their social networks in the new social environment. Therefore, they quickly change the new social environment and form social integration in the second department. For newcomers with a lower level of proactive personality, they are passive and reactive in the social environment. They are less likely to develop relationships with coworkers and make attempts to change the new social environment. It takes more time for newcomers with a lower level of proactive personality to adapt to the new social environment and form social integration in the second department.

H3. Proactive personality is positively related to newcomers' adaptation at the disruption stage, that is, newcomers with higher proactive personality experience a smaller immediate decrease in task mastery after job rotation.

Functions of Initial Challenging Experience on Newcomers' Recovery from Disruption after Job Rotation

Following the immediate decrease in task mastery and social integration triggered by job rotation, newcomers presumably improve their task mastery and social integration as they adapt to the new work and social environment. This requires newcomers' recovery from disruption, which can be captured by the increase in task mastery and social integration in the second department. I argue that newcomers' recovery from disruption can be influenced by how newcomers quickly regain task mastery and social integration. In the current study, I investigate

the influence of initial work experiences (i.e., work experience in the first department) on newcomers' recovery from disruption. Initial work experiences in an organization are important because they influence how later experiences will be interpreted (Ashforth, 2012; Kammeyer-Mueller et al., 2013; Lindsley et al., 1995; Qureshi & Fang, 2010). As Ashforth (2001) suggested, "the initial steps largely shape the direction of subsequent ones" (p.204). Among all early events, one of the most important is the initial challenging experience (Ashforth, 2012). Therefore, initial challenging experience serves as a foundation for later performance gains (i.e., recovery from disruption) among newcomers in the second department. Specifically, I investigate how initial challenging task experience (i.e., job complexity in the first department) influences the recovery from disruption of task mastery and how initial challenging social experience (i.e., social undermining in the first department) influences the recovery from disruption of social integration.

Job complexity refers to the extent to which the tasks on a job are complex and difficult to perform (Morgeson & Humphrey, 2006). Jobs with a higher level of job complexity require the use of numerous high-level skills and are more mentally demanding and challenging. I propose that newcomers who experience a higher level of job complexity in the first department have a higher level of recovery from disruption, that is, have a greater increase in task mastery in the second department. First, a higher level of job complexity in the first department makes newcomers set higher performance standards or goals on subsequent assignments. Research has found that initial challenging task assignments make people develop higher standards for their performance and perceptions of greater competencies (Taylor, 1981). For example, researchers found that newcomers whose initial jobs were more demanding performed better over a certain year period than those whose initial jobs were less challenging because they were put with higher expectations (Berlew & Hall, 1966). Higher expectations of newcomers make them allocate

persistent task-related effort and feel more empowered to begin and persist in learning and performing (Chen & Klimoski, 2003).

Second, a higher level of job complexity in the first department makes newcomers more motivated to put effort into learning tasks. When first entering a challenging environment, newcomers need more time to learn because hard-to-master knowledge, skills, and abilities require a more prolonged and intense process (Ashforth, 2012). However, challenging job experiences provide individuals with the opportunity and motivation to learn and can result in the development of a wide range of skills, abilities, insights, knowledge, and values (De Pater et al., 2009; Van Vianen et al., 2008). When newcomers with a higher level of job complexity in the first department enter the second department, those learned competencies and skills enable them to try new behavior or reframe old ways of thinking or acting (Preenen et al., 2016). This learned knowledge and expertise make them have higher expectancy (Lord et al., 2010), thus are more motivated to put effort, which leads to a higher level of recovery from disruption. In contrast, when newcomers experience a lower level of job complexity in the first department, they set lower goals so that they put less effort into learning and mastering. Therefore, they learn slower and thus experience a slower increase in task mastery in the second department.

H4. Job complexity in the first department is positively related to newcomers' adaptation at the recovery stage, that is, newcomers who experience higher job complexity in the first department experience a greater increase in task mastery in the second department.

Social undermining refers to the anger or dislike directed at an individual, criticism of an individuals' characteristics, actions, behaviors, or actions that hinder the individual's goal attainment (Kammeyer-Mueller et al., 2013; Vinokur & Van Ryn, 1993). Social undermining can

hinder newcomers' feelings of social integration. Engaging in actions that undermine a newcomer, particularly during the early stages of employment, will strongly convey the message that they are not welcomed (Baron, 1988). Research has found that social undermining from coworkers is negatively related to social integration (Kammeyer-Mueller et al., 2013).

Although being socially undermined in the first department is not beneficial to newcomers' social integration, I propose that newcomers who experience a higher level of social undermining in the first department have a higher level of recovery from disruption, that is, have a greater increase in social integration in the second department. Feeling liked and integrated into the social environment is an important goal for newcomers (Bauer et al., 2007; Fang et al., 2011). When newcomers experience social undermining in the first department, their goals of feeling integrated are obstructed. However, when they transfer to the second department, their goals of feeling integrated are refreshed because they are dealing with different coworkers and have a new start in getting integrated. Although they need to build new relationships, they feel there is a possibility of having a better social environment. Researchers have suggested that newcomers will work harder to become integrated into a work setting if they believe the setting will provide positive outcomes (Wanberg & Kammeyer-Mueller, 2008). With the previous undermining experience, they are in a precarious state of trying to feel liked. They put more effort into building a good social environment, avoiding being undermined, and getting integrated into the new work group. As Kammeyer-Mueller et al. (2013) suggest, "some individuals who are undermined may engage in more proactive socialization in an effort to overcome the active efforts to block their goal progress" (p.1118). Therefore, they put more effort into becoming integrated into the second department, resulting in a faster increase in social integration. On the contrary, newcomers who experience a

lower level of social undermining are less likely motivated to change their behavioral patterns, and they will not devote more effort in getting integrated because their goals are not obstructed.

H5. Social undermining in the first department is positively related to newcomers' adaptation at the recovery stage, that is, newcomers who experience higher social undermining in the first department experience a greater increase in social integration in the second department.

Methods

Sample and Procedure

I conducted a field quasi-experiment. Study 1 is part of a large-scale project on new nurses, which was approved and monitored by the Ethical Committee of the Business Administration Department, Beijing Jiaotong University (Reference No. 20190745). I recruited newly hired nurses from a public hospital located in Northern China. Two authors introduced this project to them and obtained their participation consensus, individual difference measures, and demographic information in the orientation sessions in July 2019 (T0). Online surveys were used afterward, and their consensus was obtained every time before they responded. One month after the participants started their professional practice in their assigned departments, I collected the first wave of data (T1). Thereafter, the data were collected with an average time interval of one month (T2-T5). I collected the fifth wave of data (T5) in December 2019. Due to the outbreak of the COVID-19 pandemic, I resumed data collection in April 2020 (T6) and Jun 2020 (T7) and then resumed one-month interval thereafter (T8-12). The data collection lasted over one year after the entry of new nurses.

A total of 390 newly hired nurses were invited to participate in this study. Among them, 389 completed at least one survey. Job rotation is part of the training for newly hired nurses. In

my research context, job rotation means that new nurses transfer from one department to a different department. The hospital adjusted newly hired nurses' job rotation plans along the training period, which lasted 1 year, based on the needs of the departments. Therefore, new nurses varied in their job rotation plan, but not due to self-selection. Among the 389 new nurses, 109 nurses did not rotate during the first year, while 146 nurses rotated between T6 and T7. Of the rest of the nurses, 53 nurses rotated between T5 and T6, 27 nurses rotated twice, 36 nurses rotated more than twice, and 18 nurses did not provide information about their rotation. Although random assignment was not feasible in my context, the quasi-experiment design (Grant et al., 2009) can help us better investigate the influence of job rotation.

I only included new nurses who did not rotate ($n = 109$) and new nurses who rotated once between T6 and T7 ($n = 146$) as the final sample. There are three reasons for this choice. The first reason is that the two groups accord with a field quasi-experiment, in which I can compare newcomers with no job rotation and newcomers with job rotation to investigate how their socialization processes differ. The second reason is that the two groups have comparable sample sizes. Other groups had a smaller sample size. For example, only 53 new nurses rotated T5 and T6. The sample size is only half of the group with no rotation, making a significant difference in sample size. Moreover, the outbreak of the COVID-19 pandemic happened between T5 and T6, which makes it difficult to differentiate the influences of job rotation and the pandemic¹. The third reason is that this helps us to focus on one critical event rather than several events. Some nurses rotated more than once. Rotation among more than two departments makes their socialization process more complex, which is beyond the scope of this study.

¹ I conducted additional analyses to examine the impact of the pandemic outbreak on the trajectories of newcomers with rotation and those without rotation. The findings suggest that pandemic's influence did not differ between the two groups. For detailed results, please refer to Appendix 6.

A total of 255 new graduate nurses were included in the final sample, of whom 85.89% (219 participants) were women, 52.69% (88 participants) possessed a bachelor's degree or higher, and 15.69% (40 participants) had work experience. Participants' average age was 22.14 years ($SD = 1.51$). Response rates were 98.43% for T1 (251 participants), 98.82% for T2 (252 participants), 99.22% for T3 (253 participants), 99.22% for T4 (253 participants), 98.82% for T5 (252 participants), 99.61% for T6 (254 participants), 99.61% for T7 (254 participants), 93.73% for T8 (239 participants), 94.51% for T9 (241 participants), 92.16% for T10 (235 participants), 90.20% for T11 (230 participants), and 89.02% for T12 (227 participants). On average, the sample group completed nine (11.53) out of twelve surveys, with 79.22% (202 participants) completing all twelve surveys.

I did not have the privilege to randomly assign new nurses to different groups. There was no significant difference between newcomers with rotation and newcomers without rotation in learning orientation ($M_{\text{rotation}} = 5.37$, $SD_{\text{rotation}} = .94$; $M_{\text{no-rotation}} = 5.43$, $SD_{\text{no-rotation}} = .85$; $t = .53$, $p = .60$), proactive personality ($M_{\text{rotation}} = 5.22$, $SD_{\text{rotation}} = .78$; $M_{\text{no-rotation}} = 5.15$, $SD_{\text{no-rotation}} = .71$; $t = -.74$, $p = .46$), task mastery at T1 ($M_{\text{rotation}} = 4.30$, $SD_{\text{rotation}} = .94$; $M_{\text{no-rotation}} = 4.29$, $SD_{\text{no-rotation}} = .73$; $t = -.12$, $p = .91$), task mastery at T2 ($M_{\text{rotation}} = 4.31$, $SD_{\text{rotation}} = .94$; $M_{\text{no-rotation}} = 4.29$, $SD_{\text{no-rotation}} = .73$; $t = -.23$, $p = .82$), task mastery at T3 ($M_{\text{rotation}} = 4.36$, $SD_{\text{rotation}} = .81$; $M_{\text{no-rotation}} = 4.23$, $SD_{\text{no-rotation}} = .63$; $t = -1.36$, $p = .18$), task mastery at T4 ($M_{\text{rotation}} = 4.46$, $SD_{\text{rotation}} = .72$; $M_{\text{no-rotation}} = 4.41$, $SD_{\text{no-rotation}} = .72$; $t = -.52$, $p = .60$), task mastery at T5 ($M_{\text{rotation}} = 4.40$, $SD_{\text{rotation}} = .74$; $M_{\text{no-rotation}} = 4.44$, $SD_{\text{no-rotation}} = .72$; $t = .42$, $p = .67$), task mastery at T6 ($M_{\text{rotation}} = 4.50$, $SD_{\text{rotation}} = .85$; $M_{\text{no-rotation}} = 4.36$, $SD_{\text{no-rotation}} = .73$; $t = -1.37$, $p = .17$), social integration at T1 ($M_{\text{rotation}} = 4.74$, $SD_{\text{rotation}} = .82$; $M_{\text{no-rotation}} = 4.82$, $SD_{\text{no-rotation}} = .76$; $t = -.02$, $p = .98$), social integration at T2 ($M_{\text{rotation}} = 4.74$, $SD_{\text{rotation}} = .80$; $M_{\text{no-rotation}} = 4.78$, $SD_{\text{no-rotation}} = .78$; $t = .38$, $p = .70$).

= .70), social integration at T3 ($M_{\text{rotation}} = 4.71$, $SD_{\text{rotation}} = .80$; $M_{\text{no-rotation}} = 4.62$, $SD_{\text{no-rotation}} = .77$; $t = -.95$, $p = .35$), social integration at T4 ($M_{\text{rotation}} = 4.68$, $SD_{\text{rotation}} = .75$; $M_{\text{no-rotation}} = 4.68$, $SD_{\text{no-rotation}} = .73$; $t = .001$, $p = .99$), social integration at T5 ($M_{\text{rotation}} = 4.62$, $SD_{\text{rotation}} = .77$; $M_{\text{no-rotation}} = 4.63$, $SD_{\text{no-rotation}} = .83$; $t = -.04$, $p = .97$), social integration at T6 ($M_{\text{rotation}} = 4.76$, $SD_{\text{rotation}} = .86$; $M_{\text{no-rotation}} = 4.61$, $SD_{\text{no-rotation}} = .75$; $t = -1.36$, $p = .17$). There was a significant difference between newcomers with rotation and newcomers without rotation in age ($M_{\text{rotation}} = 22.40$, $SD_{\text{rotation}} = 1.45$; $M_{\text{no-rotation}} = 21.79$, $SD_{\text{no-rotation}} = 1.52$; $t = -3.28$, $p = .001$), gender ($M_{\text{rotation}} = .93$, $SD_{\text{rotation}} = .25$; $M_{\text{no-rotation}} = .76$, $SD_{\text{no-rotation}} = .43$; $t = -3.96$, $p < .01$), and education ($M_{\text{rotation}} = .55$, $SD_{\text{rotation}} = .50$; $M_{\text{no-rotation}} = .07$, $SD_{\text{no-rotation}} = .26$; $t = -9.03$, $p < .001$) but not for work experience ($M_{\text{rotation}} = .15$, $SD_{\text{rotation}} = .36$; $M_{\text{no-rotation}} = .17$, $SD_{\text{no-rotation}} = .37$; $t = .31$, $p = .76$). Therefore, I controlled these variables in data analyses.

Measures

All survey items were answered on six-point Likert-type scales (1 = *strongly disagree*; 6 = *strongly agree*).

Job rotation. I coded nurses who did not rotate as 0 and nurses who rotated between T6 and T7 as 1.

Task mastery (T1-T12). I measured task mastery with three items from Morrison (1993b). The sample item was: “For the past month, I am confident about the adequacy of my job skills and abilities.” The range of Cronbach’s α from T1 to T12 was .90–.98.

Social integration (T1-T12). I measured social integration with three items from Morrison (1993b) and Chao et al. (1994). One item was dropped because of reliability concerns, and thus a two-item scale was remained to measure social integration. The sample item was: “For the past

month, I get along with the people I work with very well.” The range of Cronbach’s α from T1 to T12 was .89–.97.

Learning orientation (T0). I measure learning orientation with five items from Brett and VandeWalle (1999). The sample item was: “I am willing to select a challenging work assignment that I can learn a lot from.” The Cronbach’s α was .83.

Proactive personality (T0). I measured proactive personality with ten items from Seibert et al. (1999). The sample item was: “I am constantly on the lookout for new ways to improve my life.” The Cronbach’s α was .88.

Job complexity in the first departments (T3). I measured the job complexity of the first departments that the newcomers worked in with three items from Morgeson and Humphrey (2006). One item was dropped because of reliability concerns, and thus a two-item scale was remained to measure job complexity. The sample item was: “The job of this department involves performing relatively simple tasks.” The Cronbach’s α was .84.

Social undermining from coworkers in the first department (T4). I measured social undermining from coworkers in the first department with five items from Vinokur et al. (1996). The sample item was: “Coworkers in this department act in an unpleasant or angry manner toward you.” The Cronbach’s α was .96.

Control variables. I controlled for new nurses’ age, gender, education, work experience, and departments before rotation² and departments after rotation. I also controlled for the job

² There are seven departments, with imbalanced department sizes (before rotation: maximum = 92, minimum = 15, after rotation: maximum = 108, minimum = 9). As our research interest is at the individual level, I used individual-level analyses. I also checked the ICC1s for all variables, including task mastery at T1 (.011), social integration at T1 (.031), task mastery at T2 (.025), social integration at T2 (.043), task mastery at T3 (.013), social integration at T3 (.002), task mastery at T4 (.006), social integration at T4 (.026), task mastery at T5 (.046), social integration at T5 (.016), task mastery at T6 (.062), social integration at T6 (.027), task mastery at T7 (.008), social integration at T7 (.007), task mastery at T8 (.000), social integration at T8 (.000), task mastery at T9 (.000), social integration at T9 (.001), task mastery at T10 (.003), social integration at T10 (.000), task mastery at T11 (.001), social integration at T11 (.000), task mastery at T12 (.000), social integration at T12 (.000), job complexity in the first department (.015),

complexity and social undermining from the coworkers in the second department for newcomers who had job rotation using the same items measuring job complexity and social undermining from the coworkers in the first department. The Cronbach's α of job complexity in the second department (T9) was .88. The Cronbach's α of social undermining from coworkers in the second department (T8) was .98.

Analytic Strategy

I first tested the measurement invariance of task mastery and social integration across time to ensure that the changes I found in the trajectory were not due to changes in the meaning or measurement of the construct (Chan, 1998). I then conducted several confirmatory factor analyses (CFAs).

Next, I used discontinuous growth modeling (DGM) (Bliese et al., 2016; Bliese & Lang, 2016) to analyze the data because I expected that rotation represented a disruption in the socialization process. I used the job rotation as one break point to split the time span into three change terms: the growth rate in the first time period (T1-T6), the change from the first time period to the second time period (T6-T7), and the growth rate in the second time period (T7-T12).

I followed common coding procedures in DGM (Bliese & Lang, 2016). Table 1.1 presents a summary of the variable coding and interpretation used in the analyses. The coding of the change before the time point of job rotation (PRE) means that the coefficient estimates the change in task mastery or social integration in the first time period (i.e., newcomers with job rotation in the first department and newcomers without job rotation in the first time period). A statistically significant and negative (positive) PRE coefficient means that task mastery or social integration decreased

job complexity in the second department (.029), social undermining in the first department (.040), social undermining in the second department (.005). The low ICC could be because, although some new nurses belonged the same department, they worked in different wards. The results supported our choice of individual-level analyses.

(increased) in the first time period. The coding of the disruption variables (TRANS) means that the coefficient estimates the immediate change in task mastery or social integration during the time point of job rotation. A statistically significant and positive (negative) coefficient means that task mastery or social integration immediately increased (decreased) at the time of the job rotation. The coding of the POST means that the coefficient estimates the change in task mastery or social integration in the second time period (i.e., newcomers with job rotation in the second department and newcomers without job rotation in the second time period). A statistically significant and positive (negative) coefficient means that task mastery or social integration decreased (increased) in the second time period.

I conducted the analyses in RStudio (available at <https://www.rstudio.com/>) by using the nonlinear and linear mixed-effect model (nlme) package for R. I modified the R codes provided by Bliese and Lang (2016) and used the two-level mixed-effect models with restricted maximum likelihood (REML) estimation. Appendix 2 lists all models and equations used to analyze the data. I started by examining the Level 1 change in task mastery and social integration. I then tested whether newcomers with job rotation or without job rotation differed in the trajectories of task mastery and social integration. I then added the Level 2 predictor (learning orientation and job complexity in the first department) to test individual differences in the Level 1 effects of task mastery and Level 2 predictor (proactive personality and social undermining) to test individual differences in the Level 1 effects of social integration, while also controlling for participants' age, gender, education, work experience, departments and so on. Pseudo R^2 values were estimated by comparing the residual variance between each model and the null model without predictors (Xu, 2003).

Results

Table 1.2 presents the means, standard deviations, and correlations among the study variables. I first tested measurement invariance across time following Chan's (1998) procedure by comparing unconstrained measurement models (in which factor loadings of the items administered over time and item-specific errors were freely estimated) with constrained models (in which factor loadings of the same items were fixed to be equal across time). The results provide evidence of measurement invariance of task mastery ($\Delta\chi^2 (\Delta df = 22) = 21.46, p = .493, \Delta CFI < .001$) and social integration ($\Delta\chi^2 (\Delta df = 11) = 9.78, p = .550, \Delta CFI = .001$)³.

I first conducted several Confirmatory Factor Analyses (CFAs) to check the discriminant validity of the measures. Because I had twelve waves of measurements for task mastery and social integration, I chose the T3 measure of task mastery and social integration for the first set of analyses since job complexity was collected at T3, and I chose the T4 measure of task mastery and social integration for the second set of analyses since social undermining was collected at T4. Specifically, I entered items of task mastery, social integration, and job complexity or social undermining into three correlated factors. Model fit was evaluated based on the χ^2 statistic, comparative fit index (CFI), Tucker-Lewis index (TLI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR). The data fit the three-factor model well (the first set of analyses: $\chi^2 (11, N = 253) = 36.40, p < .001, RMSEA = .10, CFI = .98, TLI = .96, SRMR = .02$; the second set of analyses: $\chi^2 (32, N = 253) = 121.08, p < .001, RMSEA = .11, CFI = .97, TLI = .96, SRMR = .02$) and significantly better than other models.⁴

³ Full results for measurement invariance are presented in the Appendix.

⁴ Full CFA results, including alternative model specifications, are presented in the Appendix.

Discontinuous Growth Model for Task Mastery and Social Integration

Intraclass correlation coefficient. Before analyzing the data with the proposed discontinuous growth model, I examined the intraclass correlation coefficient type 1 (ICC1; Bliese, 2000) for the criterion measure. The ICC1 is calculated as the proportion of between-person variance in the overall variance [between-person variance/(between-person variance + residual within-person variance)] of an unconditional (random intercept) mixed-effects model (Bliese & Ployhart, 2002). Analyses revealed the ICC1 of task mastery was .44, and the ICC1 of social integration was .46, indicating that 44% of the variability in task mastery and 46% of the variability in social integration across time was explained by between-personal variance. This value suggests considerable individual differences in task mastery and social integration across time (Bliese, 2000).

Fixed functions for time. To examine the trend of task mastery and social integration, I first examined a basic linear discontinuous Level 1 model. The results show there was a significant increase in task mastery in the first time period (PRE, $\beta = .02$, $p < .001$), a significant decrease in task mastery after the rotation time point (TRANS, $\beta = -.19$, $p < .001$), and a significant increase in task mastery in the second time period (POST, $\beta = .06$, $p < .001$) for all new nurses. I also explored the possibility of a nonlinear discontinuous Level 1 model of task mastery by including quadratic time terms, that is, PRE² and POST² terms, in the model. Results revealed that PRE² term ($\beta = -.003$, $p = .131$) was not significant. Although POST² term ($\beta = .01$, $p = .036$) was significant, POST term ($\beta = -.01$, $p = .806$) was not significant in the model with quadratic time terms. Therefore, I dropped quadratic terms from subsequent models of task mastery. In other words, I retained a linear discontinuous model in the following analyses for task mastery.

The results of the linear discontinuous growth model of social integration show there was a marginally significant decrease in social integration in the first time period (PRE, $\beta = -.01$, $p = .098$), non-significant shift in social integration after the rotation time point (TRANS, $\beta = -.01$, $p = .773$), and no significant change in social integration in the second time period (POST, $\beta = .004$, $p = .639$) for all new nurses. I also explored the possibility of a nonlinear discontinuous Level 1 model of social integration by including quadratic time terms, that is, PRE² and POST² terms in the model. Results revealed that PRE² term ($\beta = .01$, $p = .006$) and POST² ($\beta = .03$, $p < .001$) were both significant. Therefore, I retained the nonlinear discontinuous growth model with quadratic terms for social integration.

Variability in growth parameters. Next, I tested variations of the basic linear model (quadratic model for social integration) in order to account for random effects in the change in terms of task mastery and social integration. When compared to the basic linear model, a model that allowed for variability in the growth parameters by including random slope terms for PRE, TRANS, and POST terms (also PRE² and POST² terms for social integration) exhibited a significant model fit improvement (task mastery: L.Ratio = 161.42, $p < .001$; social integration: L.Ratio = 183.74, $p < .001$). Therefore, random slope terms were retained for subsequent models.

Error structure. Following Bliese and Ployhart (2002), I then tested for autocorrelation and heteroscedasticity in the Level 1 model error structure of task mastery and social integration. Results from these analyses revealed no evidence for autocorrelation (task mastery: no convergence for the model with autocorrelation; social integration: no convergence for the model with autocorrelation) and no evidence for heteroscedasticity of task mastery (L.Ratio = .39, $p = .532$) or of social integration (L.Ratio = .99, $p = .321$). Therefore, I retained the model with homoscedasticity of task mastery and social integration in subsequent analyses.

In summary, the results (Model 1, Table 1.3) showed that there was a significant increase in task mastery during the first time period (PRE, $\beta = .02$, $p = .001$), a significant decrease in task mastery after rotation time point (TRANS, $\beta = -.19$, $p < .001$), and a significant increase in task mastery in the second time period (POST, $\beta = .06$, $p < .001$) for all new nurses. The results (Model 1, Table 1.4) show there was a significant decrease in social integration in the first time period (PRE, $\beta = -.06$, $p = .003$; PRE² = .01, $p = .008$), a non-significant shift in social integration after rotation time point (TRANS, $\beta = .02$, $p = .656$), and significant decrease in social integration in the second time period (POST, $\beta = -.12$, $p < .001$; POST² = .03, $p < .001$) for all new nurses.

Effects of Job Rotation on Task Mastery and Social Integration

With a final Level 1 model formed for task mastery (Task Mastery: Model 1, Table 1.3; Social Integration: Model 1, Table 1.4), I proceeded to test the influence of job rotation. I first added job rotation as a Level 2 predictor to model its main effect (Task Mastery: Model 2, Table 3; Social Integration: Model 2, Table 1.4). I then added interaction terms between job rotation and the PRE, TRANS, and POST time indicators to model its effect on slopes of task mastery (Model 3, Table 1.3) and social integration (Model 3, Table 1.4).

I first present the effect of job rotation on trajectories in task mastery. My Hypothesis 1a predicted that compared to newcomers without job rotation, newcomers with job rotation experience an immediate decrease in task mastery, which can be tested by including the interaction effect of job rotation and TRANS term (Job Rotation $\times$ TRANS). The results (Model 3, Table 1.3) show that there was a statistically significant interaction between job rotation and TRANS (Job Rotation $\times$ TRANS: $\gamma = -.26$, $p = .004$) on task mastery. The estimated trajectories show that new nurses with job rotation experienced a significant decrease in task mastery immediately after job

rotation (TRANS, $\beta = -.31, p < .001$), while those without job rotation did not experience a decrease in task mastery (TRANS, $\beta = -.05, p = .464$). Therefore, My Hypothesis 1a was supported.

Besides the influence of job rotation on the changes in task mastery immediately after rotation, the results also showed how job rotation influenced the whole trajectories in task mastery of rotated newcomers. There was no statistically significant interaction between PRE and job rotation (Job Rotation $\times$ PRE: $\gamma = .01, p = .417$) on task mastery. The results suggested that the increasing rate of task mastery in the first time period did not significantly differ between newcomers with job rotation and those without job rotation. The results also showed that there was no significant interaction between POST and job rotation (Job Rotation $\times$ POST: $\gamma = .02, p = .399$) on task mastery, which suggested that the increasing rate of task mastery in the second time period did not significantly differ between newcomers with job rotation and those without job rotation. The results show that newcomers with job rotation experienced an increase in social integration again in the second department. Therefore, My Hypothesis 1c was supported.

My Hypothesis 1b predicted that compared to newcomers without job rotation, newcomers with job rotation experience an immediate decrease in social integration, which can be tested by including the interaction effect of job rotation and TRANS term (Job Rotation $\times$ TRANS). The results (Model 3, Table 1.4) show that there was a statistically significant interaction between job rotation and TRANS (Job Rotation $\times$ TRANS: $\gamma = -.21, p = .050$) on social integration. The estimated trajectories show that new nurses with job rotation did not experience a significant decrease in social integration immediately after job rotation (TRANS, $\beta = -.07, p = .403$), while those without job rotation experienced an increase in social integration (TRANS, $\beta = .15, p = .028$). Therefore, my Hypothesis 1b was not supported.

Besides the influence of job rotation on the changes in social integration immediately after rotation, the results also showed how job rotation influenced the whole trajectories in task mastery of rotated newcomers. There was no significant interaction between PRE and job rotation (Job Rotation $\times$ PRE: $\gamma = .03$, $p = .519$) on social integration and PRE² and job rotation (Job Rotation $\times$ PRE²: $\gamma = -.001$, $p = .883$) on social integration. The results suggested that the decreasing rate of social integration in the first time period did not significantly differ between newcomers with job rotation and those without job rotation. There was no statistically significant interaction between POST and job rotation (Job Rotation $\times$ POST: $\gamma = .07$, $p = .238$) and POST² and job rotation (Job Rotation $\times$ POST²: $\gamma = -.01$, $p = .312$) on social integration, which suggested that the decreasing rate of social integration in the second time period did not significantly differ between newcomers with job rotation and those without job rotation. The results show that newcomers with job rotation did not experience an increase in social integration again in the second department. Therefore, my Hypothesis 1d was not supported.

To help interpret the discontinuous growth modeling results, Figure 1.2a shows that the growth rate of task mastery changes from the first time period to the second time period among the rotation group and no-rotation group. Figure 1.2b shows that the growth rate of social integration changes from the first time period to the second time period among the rotation group and no-rotation group.

Effects of Learning Orientation and Proactive Personality

Testing Hypotheses 2-5 requires us to investigate the factors that explain the various trajectories of rotated newcomers on task mastery and social integration. As my focus is the influence on new nurses with job rotation, I only include new nurses with job rotation in the subsequent analyses.

Hypothesis 2 predicted that newcomers with a higher level of learning orientation would have a smaller immediate decrease in task mastery after rotation, which can be tested by the interaction term between learning orientation and TRANS term (Learning orientation $\times$ TRANS). The results (Model 3, Table 1.5) showed that learning orientation was positively related to newcomers' adaptation of task mastery at the disruption stage (Learning orientation $\times$ TRANS: $\gamma = .13, p = .035$). The estimated trajectories showed that there was a smaller decrease in task mastery for newcomers with a higher level of learning orientation (TRANS, $\beta = -.19, p = .019$) than for newcomers with a lower level of learning orientation (TRANS, $\beta = -.44, p < .001$) after they rotated from the first department to the second department. Therefore, my Hypothesis 2 was supported.

Besides the influence of learning orientation on changes in task mastery immediately after rotation, the results also showed how learning orientation influences the whole trajectories in task mastery of rotated newcomers. The results (Model 3, Table 1.5) showed that learning orientation was positively related to the intercept of task mastery ($\gamma = .27, p < .001$), which suggested that newcomers with a higher level of learning orientation started with a higher level of task mastery. Furthermore, the interactions between learning orientation and PRE term were not significant for task mastery (Learning orientation $\times$ PRE: $\gamma = -.01, p = .200$; Model 3, Table 1.5), which suggested that the increasing rate of task mastery in the first department did not significantly differ between newcomers with a higher level of learning orientation and newcomers with a lower level of learning orientation. The interaction between learning orientation and POST was marginally significant for task mastery (Learning orientation $\times$ POST: $\gamma = -.03, p = .065$; Model 3, Table 1.5). The estimated trajectories showed that there was a smaller increase in task mastery for newcomers with a higher level of learning orientation (POST, $\beta = .04, p = .066$) than for newcomers with a

lower level of learning orientation (POST, $\beta = .09$, $p < .001$). Figure 1.3a depicts the trajectories of task mastery for rotated newcomers with high or low levels of learning orientation.

Hypothesis 3 predicted that newcomers with a higher level of proactive personality would have a smaller immediate decrease in social integration after rotation, which can be tested by including the interaction of proactive personality and TRANS term (Proactive Personality $\times$ TRANS). The results (Model 3, Table 1.6) show that proactive personality was positively related to newcomers' adaptation of social integration at the disruption stage (Proactive Personality $\times$ TRANS: $\gamma = .31$, $p = .002$). The estimated trajectories showed that there was an increase in social integration for individuals with a higher level of proactive personality (TRANS, $\beta = .17$, $p = .028$) but a non-significant decrease for individuals with a lower level of proactive personality (TRANS, $\beta = -.12$, $p = .116$). Although the results show that proactive personality was beneficial for newcomers' adaptation to disruption in social integration, my Hypothesis 3 was not supported.

Besides the influence of proactive personality on immediate changes in social integration after job rotation, the results also showed how proactive personality influences the whole trajectory of social integration of rotated newcomers. The results (Model 3, Table 1.6) showed that proactive personality was positively related to the intercept of social integration ($\gamma = .20$, $p = .010$), which suggested that newcomers with a higher level of proactive personality started with a higher level of social integration. Furthermore, the interactions between proactive personality and PRE or PRE² were not significant for social integration (Proactive Personality $\times$ PRE: $\gamma = -.03$, $p = .367$; Proactive Personality $\times$ PRE²: $\gamma = .001$, $p = .887$; Model 3, Table 1.6), which suggest that the changing rate of social integration in the first department did not significantly differ between newcomers with a higher level of proactive personality and newcomers with a lower level of proactive personality. The interaction between proactive personality and POST was significant for

social integration (Proactive Personality $\times$ POST: $\gamma = -.12, p = .030$; Model 3, Table 1.6), but the interaction between proactive personality and POST² was not significant for social integration (Proactive Personality $\times$ POST²: $\gamma = .02, p = .161$; Model 3, Table 1.6). The estimated trajectories showed that there was a greater decrease in social integration in the second department for newcomers with a higher level of proactive personality (POST, $\beta = -.17, p < .001$) than for newcomers with a lower level of proactive personality (POST, $\beta = -.07, p = .076$). Figure 1.3b depicts the trajectories of social integration for rotated newcomers with high or low levels of proactive personality.

Effects of Job Complexity and Social Undermining in the First Department

Hypothesis 4 predicted that newcomers who experience a higher level of job complexity in the first department would have a greater increase in task mastery in the second department, which can be tested by including the interaction of job complexity in the first department and POST term (Job Complexity $\times$ POST). The results (Model 5, Table 1.5) showed that job complexity in the first department was positively related to newcomers' adaptation of task mastery at the recovery stage (Job Complexity $\times$ POST: $\gamma = .03, p = .045$). The estimated trajectories results showed that there was a greater increase in task mastery in the second department for newcomers who experienced a higher level of job complexity in the first department (POST, $\beta = .09, p < .001$) than for those who experienced a lower level of job complexity in the first department (POST, $\beta = .03, p = .137$). Therefore, my Hypothesis 4 was supported.

Besides the influence of job complexity in the first department on changes in task mastery in the second department, the results also showed how job complexity in the first department influenced the whole trajectories in task mastery of rotated newcomers. The results (Model 5, Table 1.5) showed that job complexity in the first department was negatively related to the intercept of

task mastery ($\gamma = -.13, p = .038$), which suggested that newcomers who experience a higher level of job complexity in the first department started with a lower level of task mastery. Furthermore, the interactions between job complexity in the first department and PRE were not significant for task mastery (Job Complexity $\times$ PRE: $\gamma = .002, p = .752$; Model 3, Table 1.5), which suggested that the increasing rate in task mastery for newcomers did not significantly differ between newcomers who experienced a higher level of job complexity and those who experienced a lower level of job complexity in the first department. The interaction between job complexity and TRANS was not significant for task mastery (Job Complexity $\times$ TRANS: $\gamma = -.03, p = .594$; Model 5, Table 1.5), which suggested the immediate decrease in task mastery when rotating from the first department to the second department did not differ between newcomers who experienced a higher level of job complexity and those who experienced a lower level of job complexity in the first department. Figure 1.4 depicts the trajectories of task mastery for rotated newcomers who experienced high or low levels of job complexity in the first department.

Hypothesis 5 predicted that newcomers who experience a higher level of social undermining in the first department would have a greater increase in social integration in the second department, which can be tested by including the interaction of social undermining in the first department and POST and POST² term (Social Undermining $\times$ POST; Social Undermining $\times$ POST²). The results (Model 5, Table 1.6) showed that social undermining in the first department was not significantly related to newcomers' adaptation of social integration in the recovery stage (Social Undermining $\times$ POST: $\gamma = .04, p = .267$; Social Undermining $\times$ POST²: $\gamma = -.01, p = .339$). Therefore, my Hypothesis 5 was not supported.

Besides the influence of social undermining in the first department on changes in social integration in the second department, the results also showed how social undermining in the first

department influenced the whole trajectories in the social integration of rotated newcomers. The results (Model 5, Table 1.6) showed that social undermining in the first department was marginally significantly and negatively related to the intercept of social integration ($\gamma = -.11, p = .062$), which suggested that newcomers who experience a higher level of social undermining in the first department started with a lower level of social integration. Furthermore, the interactions between social undermining in the first department and PRE or PRE² were not significant for social integration (Social Undermining $\times$ PRE: $\gamma = -.04, p = .156$; Social Undermining $\times$ PRE²: $\gamma = .01, p = .128$; Model 3, Table 1.6), which suggested that the changing rate of social integration in the first department did not differ in newcomers who experienced a higher level of social undermining and those who experienced a lower level of social undermining in the first department. The interaction between social undermining and TRANS was not significant for social integration (Social Undermining $\times$ TRANS: $\gamma = -.02, p = .844$; Model 5, Table 1.5), which suggested the immediate change in social integration when rotating from the first department to the second department did not differ between newcomers who experienced a higher level of social undermining and those who experienced a lower level of social undermining in the first department.

Discussions

Theoretical Implications

My findings make significant contributions to the socialization literature. First, my research offers insight into the influence of job rotation, as a special type of socialization tactics, on newcomers' socialization process by taking a discontinuous dynamic perspective. My research findings show that job rotation influences newcomers' adaptation outcomes. Newcomers' development of task mastery is disruptive by job rotation; that is, newcomers experience an immediate decrease in task mastery after job rotation. My research also shows the necessity to take

a discontinuous dynamic perspective in studying newcomers' socialization. Previous socialization literature views time as linear and assumes that changes in newcomers happen gradually. For example, newcomers experience changes in task mastery and social integration gradually (Chan & Schmitt, 2000). However, disrupted events that occur in newcomers' socialization cause disturbance in newcomers' adaptation indicators, including task mastery and social integration. Job rotation, as a well-planned disrupted event, could have an influence on newcomers' adaptation discontinuously. My research answers the call to study the discontinuous socialization process (Ashforth, 2012) and opens a new avenue for research.

Job rotation disrupts newcomers' cognitive adaptation process. Moreover, job rotation dramatically alters newcomers' social adaptation process. My research found that social integration decreased in the first time period before they did not know whether they would rotate or not. Newcomers would experience an increase in social integration if they did not rotate, while no increase in social integration if they rotated. The decrease in social integration in the first time period was contrary to the previous literature. In previous socialization literature, social integration for newcomers will increase over time through socialization (Chan & Schmitt, 2000) because newcomers are getting more accepted as insiders. However, in my study, I found that there was a decrease in social integration over time. I doubt that this is because job rotation might increase newcomers' uncertainty over time. Employees know that they will leave the department soon and that they just work in this department temporarily. When they know that they will soon rotate into a different department, they might feel that there is no need to make an effort to integrate into the department socially since they will leave. If the newcomers are told that they will no need to rotate into other departments, they will feel that they are accepted by the department, thus experiencing an increase in social integration.

My research also contributes to the socialization literature by showing how individual differences influence how newcomers cope with disrupted events during socialization. My research found that newcomers with a higher level of learning orientation experienced a smaller immediate decrease in task mastery after job rotation, and newcomers with a higher level of proactive personality experienced an immediate increase in social integration after job rotation. When facing job rotation, a higher level of learning orientation and proactive personality help newcomers buffer the negative influence of disruptive events. Although not in my research scope, I found that newcomers with a higher level of learning orientation experienced a smaller increase in task mastery in the second department than newcomers with a lower level of learning orientation. The reason might be that individuals with a higher level of learning orientation already have a high level of task mastery (there is a significant main effect of learning orientation on the intercept of task mastery), which leads to less room for an increase in task mastery. I also found that newcomers with a higher level of proactive personality experienced a greater decrease in social integration in the second department than newcomers with a lower level of proactive personality. I suspect that this is because they experience an increase in social integration which sets the stage for a faster decrease since soon they found that they might rotate again, thus experiencing more uncertainty.

Additionally, I contribute to understanding how discontinuity experienced during job rotation can influence newcomers' adaptation processes. I focus on the initial challenging work experience and how it influences newcomers' later experiences. Specifically, my research findings showed that newcomers who experienced a higher level of job complexity would learn faster in the second department. These findings were consistent with the previous theoretical argument that early events tend to exert a disproportionate impact "since they influence how later experiences

will be interpreted” (Katz, 1980, p. 99). Challenging initial work assignments make the initial experiences of success increase the likelihood of later experiences of success (Ashforth, 2012).

Although the cognitively challenging initial work experience helps newcomers experience a greater increase in the second department, I found that there is no influence of social undermining on social integration in the second department. This could be because people might have different response patterns when experiencing social undermining. Some newcomers may devote more effort to social activities in the second department. On the contrary, some newcomers may engage in fewer social activities in the second department to avoid feelings of rejection. For example, research has shown that initial supervisor undermining was positively related to social integration, while coworker undermining was negatively related to social integration (Kammeyer-Mueller & Wanberg, 2003). Therefore, the influence of initial socially challenging experiences on newcomers’ adaptation outcomes might be complex. Future research could investigate this complex phenomenon. Although not in my research scope, my findings show that initial challenging experiences did not influence newcomers’ adaptation to the disruption. I suspect that this is because the influence of initial challenging experience should be based on the comparisons between previous work experience and later work experience. It might take some time for newcomers to have a fully understanding of their work experiences in the second department.

I also contribute to general adaptation literature by understanding the individual adaptation process. First, I contribute to the understanding of individual adaptation processes by considering newcomers’ adaptation to disruption and recovery from disruption, which is only considered in limited previous literature on individual adaptation processes (Lang & Bliese, 2009; Niessen & Jimmieson, 2016; Niessen & Lang, 2021). Second, I specify the changed components required adaptation by investigating how job rotation influences newcomers’ adaptation in task mastery

and social integration. Changes are not only cognitive/skill-based but also social/interpersonal-based (Chan, 2000). My findings show that job rotation causes changes in newcomers' task environment and social environment, thus requiring newcomers' adaptation both cognitively and socially. Third, my findings show that adaptation happens before changes happen. My findings show that social integration decreased before job rotation, which is totally different from general newcomers' adaptation in that social integration increases (Chan & Schmitt, 2000). As I speculate, the anticipation of changes in the social environment will influence newcomers' adaptation process even before the changes actually happen. I contribute to a deeper understanding of the individual adaptation process.

Finally, I help to understand the influence of specific socialization tactics in the socialization process. In the socialization literature, the influence of socialization tactics—organizational approaches to information dissemination to facilitate adaptation to new roles—has developed to understand how broad and general organizational strategies (for example, institutionalized and individualized socialization) could influence newcomers' socialization process (Ashforth, Sluss, & Saks, 2007; Bauer et al., 2007). However, these studies treat socialization tactics and their influence as static, ignoring the dynamic process socialization tactics would cause. Job rotation is a popular and unique socialization tactic. However, limited theoretical or empirical research has been devoted to the impact of job rotation on newcomers' socialization process. I represent the initial step toward an improved understanding of the dynamic influence of socialization tactics on newcomers' socialization process.

Practical Implications

This research provides evidence for the return on investment for job rotation. Martin and Schmidt (2010) even commented that “practically every company these days has some form of

[rotational] program” (p. 2) to keep and develop their talents. However, the influence of job rotation is not clear. My research shows that although research has shown that job rotation has an influence on newcomers’ adaptation processes. The results raise questions about the return on investment since rotation will not influence newcomers’ adaptation indicators at the end of job rotation programs as it might disrupt newcomers’ adaptation process. If there is a real need to socialize individuals as quickly as possible, which is also called swift socialization (Ashforth, 2012), job rotation might not be a good choice. I also call for future research to investigate other consequences of job rotation programs and how job rotation might have an impact over a longer period of time to provide more evidence about the return on investment of job rotation programs, which might meet individual developmental needs.

This research shows the challenges with the job rotation in training newcomers, therefore, has implications for Human Resource (HR) managers in organizations. First of all, they should pay attention to the influence of job rotation on newcomers’ adaptation process. Managers should be reminded that newcomers might be influenced by job rotation; they will experience a decrease in task mastery right after job rotation. Therefore, they need to be prepared well after job rotation. In addition, they experience a decrease in social integration. They feel uncertain and not accepted by the groups. Only when they know that they will not rotate do they feel that they are accepted. Second, managers should carefully design job rotation programs. My research has shown that the initial challenging experience in the first department might have an influence on task mastery in the second department. HR professionals and scholars often tout the effectiveness of rotational programs (e.g., Frase-Blunt, 2001; Kuok & Bell, 2005). Therefore, moderately challenging initial work experience might have benefits for newcomers’ adaptation to later positions. Managers might

be careful about the initial work assignment if they hope newcomers will have successful initial experience and later experience.

Another practical implication is to select appropriate people for job rotation programs. My research findings showed that newcomers with a higher level of learning orientation and a higher level of proactive personality better deal with the challenge and disruption of job rotation. Therefore, managers should select people with a higher level of learning orientation and proactive personality to participate in rotation programs. For people with a lower level of learning orientation and proactive personality, they need more training if they are going to participate in rotation programs.

Limitations and Future Directions

Although the context makes a field quasi-experiment, I did not randomly assign newcomers to the rotation group and the no-rotation group. Therefore, I could not be completely confident in the internal validity of my study. Future research could do more jobs in establishing the internal validity of my study. For example, future research could use a field experiment design by randomly assigning newcomers to the rotation group and no-rotation group to see how newcomers in the two groups differ in their adaptation and learning outcomes.

The newcomers in my research were new nurses. The training of new nurses and the training of newcomers in other professions might be different, which limits the generalizability of the findings. For example, in my study, new nurses still do nursing work in different departments, with the difference relying on the knowledge of the disease in different departments. However, for other newcomers in other professions, they might rotate among more different jobs, for example, Finance, Marketing, Analytics, Operations, and so on. The differences among those jobs might be more significant and salient. The influence of job rotation might be different if they rotate into a

department with more significant and salient differences. Another limitation is that I only investigated job rotation between two departments. However, in practice, newcomers may rotate into more than two departments. The influence of job rotation might be more complex and needs further research.

Job rotation might have a long-term effect on one's career. For example, research has found that organizations frequently use job rotation to develop managers (Eriksson & Ortega, 2006). Rotation is also beneficial to ameliorate the effects of plateauing by adding stimulation to employees' work (Campion et al., 1994; Kampkötter et al., 2018). Future research could test the influence of job rotation on managerial development and leadership development.

I did not test any mechanism under which the initial challenging experience influenced later socialization. There might be different mechanisms. For example, newcomers who experience initial challenging work experience might have a higher level of self-efficacy, which causes a greater increase in task mastery in the second department. Therefore, self-efficacy might play the mediation role between job complexity in the first department and changes in task mastery in the second department. The second mechanism might be newcomers who experience initial challenging work experience might develop a higher level of resilience. People with a higher level of resilience have more resources to cope with difficulties, which leads to a greater increase in task mastery in the second department. Other possible mechanisms might be affective ones. For example, Kammeyer-Mueller et al. (2013) investigated the role of hedonic tone as the mechanism between social undermining and social integration. Future research might benefit from research into the mechanisms under which initial challenging work experience influences newcomers' later experiences.

I admit there might be selection bias in studying how job rotation influences newcomers' socialization, while my research did not address this point. As job rotation programs are provided to attract newcomers, some newcomers might tend to choose organizations with job rotation programs when they are seeking a job. This might create selection bias. In my research context, all new nurses need to experience job rotation as part of their formal training. They did not have the option of entering hospitals with or without job rotation. Therefore, I could not address the selection bias problem.

CHAPTER 4: STUDY 2

When police officers fight hijackers, firefighters extinguish severe wildfires, or nurses save lives during a global pandemic, these workers experience a *positive profession-spotlighting event*. Positive profession-spotlighting events are occasions that highlight the favorable relevance and value of a profession to the situation.⁵ Such events can significantly influence employees in relevant professions (Bacharach & Bamberger, 2007; Hällgren et al., 2018; Morgeson et al., 2015). For example, after the 9/11 terrorist attacks, U.S. firefighters may have experienced higher regard nation-wide (Ashforth, 2020). As a consequence, positive profession-spotlighting events cause employees in relevant professions to reevaluate themselves and their work roles, and to reconsider who they are and what the right thing is for them to do (Ashforth, 2020). In this way, these events might substantially change workers' visceral sense of what it means to belong to their professions (Ashforth et al., 2013)—that is, their *professional identification*, defined as employees' sense of oneness with their profession (Hekman et al., 2009). However, even with events that present professions in a firmly positive light, the precise relationship between these events and employees' professional identification remains uncertain. For instance, during the COVID-19 pandemic, some nurses included in a small-sample interview reported feeling stronger professional identification (Sun et al., 2020), while anecdotal reports revealed that others doubted their original choice and even quit the profession (Ali, 2020, May).

The fact that we still lack a comprehensive understanding of how and why positive profession-spotlighting events affect professional identification is unfortunate for two reasons. First, research has suggested that individuals are becoming increasingly committed to their occupations and professions (Anteby et al., 2016) and tend to identify more strongly with their occupations or professions than with their organizations (Ashforth et al., 2013; Johnson et al., 2006). For example, employees' attitudes toward their profession could be stronger predictors of

⁵ Similarly, employees might also experience *negative* profession-spotlighting events. For example, the 2007-2008 financial crisis was a negative profession-spotlighting event for financial professions such as accounting and investing. However, I have elected to focus on positive profession-spotlighting events here; negative profession-spotlighting events lie beyond the scope of this paper.

their intentions to quit their organization than organizational commitment (Lee et al., 2000). However, organizational research has long focused mainly on organizational identification and neglected professional identification (Ashforth et al., 2013; Dierdorff, 2019). Given the rising salience of professional identification, exploring the factors that influence it is crucial. Second, although some theoretical discussions suggest that the formation of professional identification is a dynamic and ongoing process (Ashforth et al., 2008; Caza et al., 2018; Miscenko & Day, 2016), the field has yet to systematically examine how it changes during critical events. Positive profession-spotlighting events provide a golden opportunity to examine the changes in professional identification caused by critical events (Ashforth, 2020). Without sufficient knowledge about how employees respond to such profession-spotlighting events, it is difficult to provide valuable suggestions to utilize the potential benefits of these events. Therefore, scholars have begun to call for more research on how significant events may shift individuals' professional identification (Ashforth, 2020).

To address this call, I draw on the identity construction process model to investigate the effects of positive profession-spotlighting events on changes in novices' professional identification (Ashforth et al., 2008; Ashforth & Schinoff, 2016). I focus on novices in particular, as the influence of positive profession-spotlighting events on professional identification should be especially salient and dramatic for these individuals. Prior research suggests that professional identity is mutable or malleable in the earlier stages of one's career (Ibarra, 1999). Further, some scholars argue that professional identity formation and change are most pronounced among new entrants (Ashforth et al., 2008; Pratt et al., 2006). Thus, novices in the professions that experience positive profession-spotlighting events offer an ideal sample to examine changes in professional identification before and after such events.

Hypotheses Development

Identity Construction Process and Positive Profession-Spotlighting Events

Identity construction is a process through which actors come to define who they are by bringing attributes of the collective's (e.g., organization's, profession's, or other collective entity's) identity into their own (Ashforth et al., 2008). In this way, identification serves as both the process and the key outcome of the identity construction process (Ashforth & Schinoff, 2016). Critical events can trigger identity reconstruction (Ashforth et al., 2018; Ashforth & Schinoff, 2016). In my research, I focus on positive profession-spotlighting events, or occasions that highlight the favorable relevance and value of a profession to the situation. These occasions can be major events with high public exposure. For example, severe wildfires that attract heavy news coverage may spotlight the role and work of firefighters. They can also be relatively minor events. For example, guiding students with difficulties in learning and helping them progress may spotlight the role and work of teachers. Either major or minor events could provide relevant information for individuals to process (Ashforth, 2012; Ashforth et al., 2018) and trigger the identity construction process.

Positive profession-spotlighting events induce individuals to question what is unfolding around them, prompting them to seek identity-relevant information. Learning about the context and constructing a sense of self are greatly facilitated by sensemaking, which refers to how individuals work to understand novel, unexpected, or confusing events (Maitlis & Christianson, 2014). For instance, a nurse may wonder what it means to be a healthcare worker during the outbreak of the COVID-19 pandemic. Such sensemaking processes decide whether individuals will internalize or strengthen their professional identities and thus reshape their professional identification. According to the identity construction model (Ashforth et al., 2008; Ashforth & Schinoff, 2016), the process of identification is characterized by an interplay between individuals and collectives, involving both a top-down process and a bottom-up process. The former addresses how collectives influence one's identification with certain groups, while the latter addresses how focal individuals can use their thoughts, feelings, and actions to negotiate

boundaries between the self and the collective (Ashforth et al., 2008). Both types of processes can shape identification by facilitating the overall sensemaking process, which describes how individuals interpret internal and environmental cues when constructing an identity (Ashforth & Schinoff, 2016). In my study, I focus on sensegiving as a top-down process and moral elevation as a bottom-up process, both of which help to change professional identification.

Identity construction tends to be salient in the earlier stage of one's career (Bullis & Bach, 1989; Ibarra, 1999; Pratt et al., 2006; Skorikov & Vondracek, 2011). Novices entering a profession experience a “becoming” process (Anteby et al., 2016; Ashforth et al., 2014), in which they construct their professional identity and form professional identification. On their path to identifying with their professions, these novices may experience new discoveries, surprises, and even shocks (Bullis & Bach, 1989; Louis, 1980). Therefore, the formation and change of professional identity are most pronounced among new entrants (Ashforth et al., 2008; Pratt et al., 2006). Accordingly, the influence of profession-spotlighting events on professional identification should be most salient for novices.

In the following sections, I develop my hypotheses about how novices' professional identification waxes and wanes from before to after a positive profession-spotlighting event and test these hypotheses using longitudinal field data in Study 1. This first study investigates the effect of the COVID-19 outbreak as a positive profession-spotlighting event and also the experiences of sensegiving and moral elevation on the increase in new graduate nurses' professional identification.

Professional Identification Trajectory and Change

I first explore *how novices' professional identification changes after they start their professional practice*. Previous research on organizational socialization provides evidence that newcomers often experience a “reality shock” (Chao et al., 1994; Louis, 1980), which leads to the “hangover” effect—a significant decline in job satisfaction (Boswell et al., 2005; Boswell et al., 2009) or organizational identification (Zhu et al., 2017). This shock occurs because organizations usually present their most favorable side to employees initially, leading newcomers

to form a particularly positive picture of the organization. As a result, when newcomers enter the organization, they often have inflated expectations that “set [them] up . . . for subsequent disappointment and disillusionment” (Boswell et al., 2009, p. 846). I propose that this hangover effect will also apply to the entry process into a particular profession. Namely, novices might have inflated, idealistic expectations about their profession at the very beginning of their professional practice, leading to disappointment once they actually enter the profession. For example, new graduate nurses might experience unexpectedly large workloads, stress, insecurity, and even bullying or criticism at work (Pasila et al., 2017), all of which may lead to a decline in professional identification. Research has found that during the first 6 to 8 months of medical residency, some residents experienced violations of work-identity integrity, that is, consistency between who one is and what one does, which led to a devaluation of their professional identity (Pratt et al., 2006).

Hypothesis 1a: Novices’ professional identification decreases during the initial months of professional practice.

I then explore *how a positive profession-spotlighting event may influence individuals’ professional identification*. I propose that a positive profession-spotlighting event will cause an immediate increase in professional identification among employees in relevant professions. I focus on the instantaneous influence of positive profession-spotlighting events because such events might provoke discontinuous change and have instantaneous effects (Ashforth et al., 2018). A positive profession-spotlighting event leads to an increase in professional identification for two reasons. First, the event may increase the salience—which is determined by “subjective importance and situational relevance” (Ashforth, 2001, p. 29)—of novices’ professional identity. Individuals are likely to have multiple social identities, some of which will assume salience or psychological prominence in a given situation. During positive profession-spotlighting events, the professional identity becomes more important and relevant, thus, more salient. Research has suggested that when their professional identity is made salient, individuals identify more strongly with their professions (van Dick et al., 2005). Second, a positive profession-spotlighting event

evokes individuals' sensemaking process, in which individuals give meaning to ongoing experiences (Aguinis & Glavas, 2017), thus facilitating the formation of professional identification. Novices seek identity-relevant information during these events, and the positive information from the events helps to strengthen their professional identity, thereby increasing professional identification.

For example, the outbreak of the COVID-19 pandemic was a positive profession-spotlighting event in that it highlighted the favorable relevance and value of frontline health-care professions, such as nursing. Thus, new graduate nurses' professional identity as nurses might have become more relevant to the situation (Ashforth, 2020). At the same time, new graduate nurses might seek and receive positive identity-relevant information. For example, many healthcare workers were widely lauded as "heroes" throughout the pandemic, and some nurses embraced this status as it made them feel respected and valued (Hennekam et al., 2020). They may have experienced increased awareness that their work could have a positive societal impact and sense of meaning (Zhu et al., 2020). Therefore, the outbreak of the COVID-19 pandemic, as a positive profession-spotlighting event, led to an increase in new graduate nurses' professional identification.

Hypothesis 1b: A positive profession-spotlighting event increases novices' professional identification immediately.

The Role of Sensegiving and Moral Elevation

I am also interested in the experiences during a positive profession-spotlighting event that could have diverse impacts on different employees. In this research, I focus on two such experiences: sensegiving and moral elevation. First, I propose that sensegiving during a positive profession-spotlighting event, triggering a top-down process in identity construction, can facilitate the increase in novices' professional identification. My research focuses on the sensegiving from management that may influence novices' understanding of their responsibilities, mission, or duties during the positive profession-spotlighting event. As an effective way for organizations to manage employees' identification process (Pratt, 2000),

sensegiving is prevalent during critical events, when collectives provide interpretations to help shape the ongoing construction of individuals' identities (Ashforth & Schinoff, 2016).

During the positive profession-spotlighting event, more sensegiving from management should better enable novices to make sense of their roles, facilitating their meaning construction. This meaning construction process will address their importance, responsibilities, and mission during such events. Such positive identity-relevant information enhances their professional identification. The literature on organizational communication also provides evidence that sensegiving can facilitate employees' identification (Chreim, 2002; Chreim et al., 2007; Pratt, 2000). If there is no sensegiving from management to help novices make sense of a profession-spotlighting event, novices might not receive positive identity-relevant information and take the opportunity to better understand what it means to belong to their professions. Therefore, they are less likely to experience an increase in professional identification. In summary, sensegiving during positive profession-spotlighting events helps employees to understand the relevance and value of their work, highlighting the salience of their professional identities. Thus, employees who receive more sensegiving will experience a greater increase in their professional identification. For example, after the outbreak of the COVID-19 pandemic, sensegiving facilitated new graduate nurses' sensemaking of their important roles and enhanced their professional identification. By contrast, where sensegiving from management was lacking, new graduate nurses may have felt lost when combating the pandemic and started to doubt their identities as nurses.

Hypothesis 2: During the positive profession-spotlighting event, sensegiving is positively related to the increase in professional identification.

Second, I propose that moral elevation during a positive profession-spotlighting event, triggering a bottom-up process in identity construction, can also facilitate the increase of novices' professional identification. Moral elevation consists of a distinctive feeling of warmth and expansion that is accompanied by admiration, affection, and inspiration for the people whose exemplary behavior is being observed (Aquino et al., 2011; Haidt, 2003). My research focuses

on novices' experience of moral elevation during the positive profession-spotlighting event. The event might elicit novices' moral elevation when they witness the moral goodness of other workers in their professions, which motivates them to emulate the moral exemplar and enhance their affiliation with their profession group (Algoe & Haidt, 2009; Haidt, 2003; Vianello et al., 2010), thereby strengthening their professional identification.

As Ashforth and Schinoff (2016) suggest, individuals can “feel” their way to identification, which means that the individuals like and value their identities. When they feel elevated emotions, individuals feel positive about their group membership and internalize the group identity as a definition of self. Thus, with a higher level of moral elevation, novices will feel better about their professional identities and experience a greater increase in professional identification. For example, throughout the pandemic, there have been many news reports and stories of nurses making exceptional sacrifices to fight the pandemic and save their patients' lives. These stories reveal human moral beauty, which can elicit novices' moral elevation. The feeling of moral elevation is likely to have enhanced new graduate nurses' internalization of their professional identities, leading to an increase in their professional identification. By contrast, if novices experience a lower level of moral elevation, they are less likely to feel positive about their professional identities and, in turn, less likely to experience an increase in professional identification.

Hypothesis 3: During the positive profession-spotlighting event, moral elevation is positively related to the increase in professional identification.

Methods

Sample and Procedure

Study 2 is part of a large-scale project on new nurses, which was approved and monitored by the Ethical Committee of the Business Administration Department, Beijing Jiaotong University (Reference No. 20190745). I recruited newly hired nurses from a public hospital located in Northern China. Two authors introduced this project to them and obtained their participation

consensus and demographic information in the orientation sessions in July 2019. Online instruments were used afterwards, and participants' consensus was obtained every time before they responded. One month after the participants started their professional practice in their assigned departments, I collected the first wave of data at Time 1 (T1). Thereafter, the data were collected at an average of 1-month intervals (T2-T5).

When I collected the fifth wave of data (T5) in December 2019, the COVID-19 pandemic had not attracted significant attention; however, by the time I collected the sixth wave of data (T6) in late February 2020, COVID-19 had spread widely in China, and this hospital became one of two designated hospitals in that city for the treatment of patients infected with COVID-19. I decided to investigate whether the outbreak of the pandemic could influence new nurses' work attitudes and behaviors. Therefore, I continued to collect data after the outbreak of the COVID-19 pandemic. In other words, the sixth (T6), seventh (T7, late April 2020), eighth (T8, late June 2020), ninth (T9, late July 2020), and tenth (T10, late August 2020) waves of data were collected after the outbreak of COVID-19.

A total of 390 newly hired nurses were invited to participate in this study. I gave participants a cash reward of RMB10 (around US\$1.39) for completing each wave of the survey. I also gave participants an additional cash reward of RMB30 (around US\$4.17) when they completed every three waves of surveys. Ultimately, 389 participants completed at least one survey. Response rates were 98.21% for T1 (383 participants), 98.21% for T2 (383 participants), 97.69% for T3 (381 participants), 96.92% for T4 (378 participants), 96.41% for T5 (376 participants), 96.15% for T6 (375 participants), 96.67% for T7 (377 participants), 95.13% for T8 (371 participants), 90.51% for T9 (353 participants), and 91.03% for T10 (355 participants). Because I focus on new graduate nurses in this research, I excluded 67 participants with previous work experience as nurses. Therefore, a total of 322 new graduate nurses were included in the final sample, of whom 88.2% (284 participants) were women, and 28.6% (92 participants)

possessed a bachelor's degree or higher. Participants' average age was 21.80 years ($SD = 1.07$). Some new nurses experienced job rotation ($n = 231, 71.74\%$), which means they worked for two or more departments during my data collection. On average, the sample group completed nine (9.66) out of ten surveys, with 86.34% (278 participants) completing all 10 surveys.⁶

Measures

Professional identification was measured repeatedly from T1 to T10. In T6, because of the outbreak of the COVID-19 pandemic, I added the measures of sensegiving and moral elevation, which were specifically related to the pandemic. Professional identification and sensegiving were measured with six-point Likert-type responses (1 = *strongly disagree*; 6 = *strongly agree*). Moral elevation was measured with seven-point Likert-type responses (1 = *never*; 7 = *always*).

Professional identification (T1-T10). I measured professional identification with three items from Van Knippenberg et al. (2002) by amending the scales to reflect *professional* identification (nurses) rather than organizational identification. Items included “Over the last month, when someone criticizes the nursing profession, it feels like a personal insult,” “Over the last month, I strongly identify with my current profession as nurses,” and “Over the last month, I feel strong ties with my current profession as nurses.” The range of Cronbach's α from T1 to T10 was .82-.96.

Sensegiving (T6). I measured sensegiving with a three-item scale developed specifically for this study following the definition of sensegiving. I developed these measures to assess the extent to which management was actively trying to influence nurses' sensemaking and meaning construction regarding their profession during the COVID-19 pandemic.⁷ Items included “The

⁶ An additional test of attrition effects showed that individuals who completed all 10 surveys (Sample A) were less likely to possess a bachelor's degree or higher than those who missed at least one survey (Sample B) (26.3% in Sample A vs. 43.2% in Sample B, $t = 0.32, p = .021$), but Sample A and Sample B did not differ in age ($M_{\text{Sample A}} = 22.00, SD_{\text{Sample A}} = 1.12, M_{\text{Sample B}} = 21.77, SD_{\text{Sample B}} = 1.05, t = 1.36, p = .176$), gender (86.4% female in Sample A vs. 88.8% female in Sample B, $t = 0.41, p = .686$), and professional identification at Time 1 ($M_{\text{Sample A}} = 4.77, SD_{\text{Sample A}} = .81, M_{\text{Sample B}} = 4.55, SD_{\text{Sample B}} = 0.82, t = 1.59, p = .112$). The results provide confidence on performing longitudinal analyses on the data with sample attrition.

⁷ To help ensure construct validity, I checked the content validity, convergent validity, and discriminant validity of our measures of sensegiving. For detailed validation results, please refer to Appendix 13. I also report the results of the convergent and discriminant validity of our measures of moral elevation and professional identification.

department facilitates our understanding of nurses' responsibility during the COVID-19 pandemic," "The department encourages us to stand firm as nurses during the COVID-19 pandemic," and "The department helps us to make sense of the mission of nurses during the COVID-19 pandemic" ($\alpha = .98$).

Moral elevation (T6). I measured moral elevation with three items from Aquino et al. (2011). Participants were asked to report how frequently they experienced the emotion of moral elevation when they witnessed stories of other nurses or healthcare workers during the COVID-19 pandemic. Items included "inspired," "awe," and "admiration" ($\alpha = .98$).

Control variables. I controlled for new graduate nurses' age, gender, education, and work experience, whether they experienced job rotation,⁸ and which departments they worked in when experiencing the outbreak of COVID-19 (T6).⁹ I also controlled for work stress, which was measured repeatedly from T1 to T10, using two items adapted from Motowidlo et al. (1986): "Over the last month, my job is extremely stressful," and "Over the last month, I feel a great deal of stress because of my job" (The range of Cronbach's α from T1 to T10 was .92-.97). Moreover, I controlled for *workload increase* (T6) after the outbreak of COVID-19 because it may have adversely influenced professional identification. Workload increase was measured using two items developed specifically for this study ($\alpha = .82$): "The workload has increased since the outbreak of COVID-19" and "The number of patients has increased since the outbreak of COVID-19."

⁸ Among 322 new graduate nurses, 231 nurses experienced job rotation at least once and 91 nurses did not experience job rotation. Most of the job rotation happened between T7 and T8.

⁹ There were seven departments, with imbalanced department sizes (maximum = 133, minimum = 17). As our research interest is at the individual level, I used individual-level analyses. I also checked the ICC1s for all variables to indicate how much of the variability of the tested variables was a result of departments, including identification at T1 (.001), identification at T2 (.040), identification at T3 (.016), identification at T4 (.012), identification at T5 (.007), identification at T6 (.036), identification at T7 (.003), identification at T8 (.000), identification at T9 (.006), identification at T10 (.013), sensegiving (.015), moral elevation (.001), and workload increase (.001). The low ICC could be because, although some new graduate nurses belonged to the same department, they worked in different wards. The results supported our choice of individual-level analyses.

Analytic Procedures

I first tested the measurement invariance of professional identification across time to ensure that the changes I found in the trajectory were not due to changes in the meaning or measurement of the construct (Chan, 1998). I then conducted several confirmatory factor analyses (CFAs) and the Fornell and Larcker (1981) test for the distinctiveness of the measures.

Next, I used discontinuous growth modeling (DGM) (Bliese et al., 2016; Bliese & Lang, 2016) to analyze the data because I expected that the COVID-19 pandemic represented a disruption in the professional identification process. I used the outbreak of COVID-19 as one break point to split the time span into three change terms: the growth rate before the outbreak (T1-T5), the change from T5 to T6, and the growth rate after the outbreak (T6-T10). This method enabled us not only to estimate how much the pandemic changed professional identification but also to test whether changes in professional identification could be explained by sensegiving and moral elevation.

I followed relative coding procedures¹⁰ in DGM (Bliese & Lang, 2016). Table 2.1 presents a summary of the variable coding and interpretation used in the analyses. The coding of the change before the outbreak (PRE) means that the coefficient estimates the change in professional identification before the outbreak of the COVID-19 pandemic. A statistically significant and negative (positive) PRE coefficient means that professional identification decreased (increased)

¹⁰ Two types of coding can be utilized in DGM—relative coding and absolute coding (Bliese & Lang, 2016). In relative coding, the PRE term is coded as increasing over the entire time period. As a consequence, the TRANS term is defined relative to the change pattern determined by the intercept and parameter estimate for TIME. As Bliese and Lang (2016) explained, “The change pattern represents predicted change based on the linear model if the event causing the discontinuity had not occurred” (p. 7). The POST term is likewise defined in relative terms, as changes in the slope compared to the slope that exists prior to the change. I chose this coding because in our theoretical development, I propose that the outbreak of COVID-19, as a disruptive event, will interrupt new graduate nurses’ entry processes (Ashforth et al., 2014). Further, according to previous research, this process might last 1 year (Boswell et al., 2009; De Vos & Freese, 2011) or even longer (Jokisaari & Nurmi, 2009). For example, Boswell et al. (2009) found that newcomers’ job satisfaction might decrease in 1 year after their entry. Our results suggest that new nurses’ professional identification might have kept decreasing if the COVID-19 pandemic had not occurred, and that the outbreak of the COVID-19 pandemic, as a profession-spotlighting event, interrupted the decreasing trajectory of professional identification. Therefore, to capture the influence of the profession-spotlighting event, I use relative coding. In absolute coding, the PRE term is coded as increasing until the point of change but remaining as a constant afterwards. In absolute coding, the TRANS and POST terms are defined as absolute changes relative to zero. I also used absolute coding in the supplementary analyses.

before the outbreak of the pandemic. The coding of the disruption variable (TRANS) means that the coefficient estimates the immediate change in professional identification due to the outbreak of the COVID-19 pandemic. A statistically significant and positive (negative) TRANS coefficient means that professional identification increased (decreased) at the time of the outbreak of the COVID-19 pandemic. The coding of the change after the outbreak (POST) means that the coefficient estimates whether the post-COVID growth rate differed from the pre-COVID growth rate. A statistically significant and positive (negative) POST coefficient means that the linear growth rate was faster (slower) after the outbreak of the COVID-19 pandemic. If the post-COVID linear growth rate is not statistically significant, it means that the growth rates were essentially the same before and after the outbreak of the pandemic.

I conducted the analyses in RStudio (available at <https://www.rstudio.com/>) by using the nonlinear and linear mixed-effect model (nlme) package for R. I modified the R codes provided by Bliese and Lang (2016) and used the two-level mixed-effect models with restricted maximum likelihood (REML) estimation. Appendix 9 lists all models and equations used to analyze the data. I started by examining the Level 1 change in professional identification. I then added the Level 2 predictors (sensegiving and moral elevation) to test individual differences in the Level 1 effects while also adding control variables. I included both sensegiving and moral elevation as predictors in the same model to account for their potential mutual influence. Pseudo R^2 values were estimated by comparing the residual variance between each model and the null model without predictors (Xu, 2003).

Results

Descriptive data and correlations. Table 2.2 presents the means, standard deviations, and correlations among the study variables. I first tested measurement invariance across time following Chan's (1998) procedure by comparing unconstrained measurement models (in which factor loadings of the items administered over time and item-specific errors were freely estimated) with constrained models (in which factor loadings of the same items were fixed to be

equal across time). The results ($\Delta\chi^2 (\Delta df = 18) = 33.05, p = .02, \Delta CFI = .001$)¹¹ provide evidence of measurement invariance of professional identification.

Discriminant validity of the measures. I first conducted several CFAs for the measures. Because I had ten waves of measurements for professional identification, I chose the T6 measure for the analyses since sensegiving and moral elevation were also collected at T6. Specifically, I entered items of professional identification, sensegiving, and moral elevation into three correlated factors. Model fit was evaluated based on the χ^2 statistic, comparative fit index (CFI), Tucker-Lewis index (TLI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR). The data fit the three-factor model well ($\chi^2 (24, N = 313) = 39.98, p = .02, RMSEA = .05, CFI = 1.00, TLI = .99, SRMR = .02$) and significantly better than other models.¹² Moreover, I followed the Fornell and Larcker (1981) procedure as an additional test of discriminant validity. The average variances extracted in sensegiving (T6), moral elevation (T6), and professional identification (T6) were .94, .93, and .81, respectively. The largest squared intercorrelation between these latent variables was the one between sensegiving (T6) and professional identification (T6), which was .35. These results provide further support to the discriminant validity of the measures.

Discontinuous Growth Model for Professional Identification

Intraclass correlation coefficient. Before analyzing the data with the proposed discontinuous growth model, I examined the intraclass correlation coefficient type 1 (ICC1; Bliese, 2000) to indicate how much of the variability in professional identification is a result of between-person differences across the ten measurement occasions. The ICC1 is calculated as the proportion of between-person variance in the overall variance [between-person variance/(between-person variance + residual within-person variance)] of an unconditional (random intercept) mixed-effects model (Bliese & Ployhart, 2002). Analyses revealed an ICC1 of .56, indicating that 56% of the variability in professional identification across time was

¹¹ As researchers suggest, ΔCFI is a more reliable indicator than $\Delta\chi^2$ of measurement invariance, and when ΔCFI is greater than .01, the invariance is untenable (Cheung & Rensvold, 2002).

¹² Full CFA results, including alternative model specifications, are available from the authors upon request.

explained by between-person variance. This value suggests considerable individual differences in professional identification across time (Bliese, 2000).

Fixed functions for time. To examine the trend of professional identification, I first examined a basic linear discontinuous Level 1 model. I also explored the possibility of a nonlinear discontinuous Level 1 model by including quadratic time variables PRE^2 and $POST^2$ in the model. Results revealed that both PRE^2 ($\beta = -.01, p = .43$) and $POST^2$ ($\beta = .01, p = .53$) variables were non-significant, so I dropped them from subsequent models. In other words, I retained a linear discontinuous model in the following analyses.

Variability in growth parameters. Next, I tested variations of the basic linear model in order to account for random effects in the change terms. When compared to the basic linear model, a model that allowed for variability in the growth parameters by including random slope terms for PRE, TRANS, and POST terms exhibited a significant model fit improvement (L.Ratio = 112.50, $p < .001$). Therefore, random slope terms were retained for subsequent models.

Error structure. Following Bliese and Ployhart (2002), I then tested for autocorrelation and heteroskedasticity in the Level 1 model error structure. The model with autocorrelation did not converge. Results revealed significant evidence for heteroskedasticity (L.Ratio = 4.70, $p = .03$). Hence, I accounted for heteroskedasticity in subsequent analyses.

The general trajectory of new graduate nurses' professional identification. An unconditional model (Table 2.3, Model 1) that contains only the growth terms showed that new graduate nurses' professional identification decreased before the outbreak of the COVID-19 pandemic (PRE, $\beta = -.04, p < .001$) but increased from before to after the outbreak (TRANS, $\beta = .19, p < .001$). The results also showed that, compared with the decrease in professional identification before the outbreak of the COVID-19 pandemic, new graduate nurses experienced a similar decrease in professional identification (POST, $\beta = .02, p = .09$) after the outbreak of the

pandemic. Figure 2.1 depicts the general trajectory of the change in professional identification. According to the results, Hypotheses 1a and 1b were supported.¹³

Effects of sensegiving on the increase in professional identification. I added sensegiving as a Level 2 predictor. Hypothesis 2 predicted that sensegiving is positively related to the increase in professional identification. This prediction is tested by the term representing the interaction between TRANS and sensegiving in Table 2.3, Model 3. Indeed, sensegiving is positively and significantly related to the increase in professional identification (Sensegiving $\times$ TRANS, $\gamma = .13, p < .001$), supporting my Hypothesis 2. Figure 2.2a depicts the trajectory of professional identification as a function of sensegiving.

Effects of moral elevation on the increase in professional identification. I also added moral elevation as a Level 2 predictor. Hypothesis 3 predicted that moral elevation is positively related to the increase in professional identification. This prediction is tested by the term representing the interaction between TRANS and moral elevation in Table 2.3, Model 3. Indeed, moral elevation is marginally significantly and positively related to the increase in professional identification (Moral elevation $\times$ TRANS, $\gamma = .03, p = .07$), supporting my Hypothesis 3. Figure 2.2b depicts the trajectory of professional identification as a function of moral elevation.

In the results presented above, I controlled for new graduate nurses' age, gender, education, and work experience, whether they experienced job rotation, which departments they worked in when experiencing the outbreak of COVID-19 (T6), and work stress. I also examined the model without these control variables, and the conclusions remained the same.

Supplementary Analysis

Alternative coding. The coding I used for the discontinuous growth model, as shown in Table 2.1, was the basic discontinuous model, in which the TRANS variable and POST variable are

¹³ To provide additional insights into the impact of the COVID-19 outbreak on new graduate nurses, I also explored how new graduates' turnover intention and job satisfaction changed. The results found that the COVID-19 outbreak had increased new graduates' job satisfaction and decreased new graduates' professional identification, which suggest that a positive profession-spotlighting event could have significant influence on novices in relevant professions.

defined relatively, and the changing pattern represents predicted change based on the linear model if the event causing the discontinuity had not occurred. To examine exactly how professional identification changed after the outbreak of COVID-19, compared to zero, I used absolute coding (Bliese et al., 2016). A detailed description of absolute coding is presented in Appendix 11. The results show that there was an absolute increase in professional identification (TRANS, $\beta = .12$, $p = .001$) from T5 to T6. Further, after the outbreak of the COVID-19 pandemic, the change in professional identification was significant and negative (POST, $\beta = -.01$, $p = .04$), which suggests that professional identification continued to decrease after the outbreak of the COVID-19 pandemic.

Discussions

Implications for Theoretical Development

Positive profession-spotlighting events and relevant consequences. My findings suggest that positive profession-spotlighting events strongly affect frontline workers in essential professions. In this way, they help to answer the call for research on how the pandemic (or a similar positive profession-spotlighting event) affects workers' identification with relevant professions (Ashforth, 2020). Furthermore, my research makes a broader theoretical contribution by advancing prior theoretical discussions on how critical events can have dramatic effects on employees' work experiences and behaviors (Hällgren et al., 2018; Johns, 2018; Morgeson et al., 2015).

In addition, my findings from Study 2 show that professional identification decreased again after the event-related increase in professional identification. There might be two reasons. First, as Hennekam et al. (2020) suggest, although the “hero” status arose very suddenly during the pandemic, some nurses doubt that it will last long. The perceived temporality of the hero status is likely to influence nurses' interpretation of the positive profession-spotlighting events and

identity construction process, thus also shifting their professional identification. Second, the decrease in event strength after the outbreak of the pandemic may alleviate the impact of this event. According to event system theory (Morgeson et al., 2015), the greater the event strength, the greater the impact the event could have on individuals. More importantly, events are dynamic and evolutionary—that is, their overall strength can change over time. Accordingly, an event's consequences may be altered by changes in event strength over time. In the context of my research, the Chinese city where the hospital is located had the most COVID-19 cases (Dong et al., 2020) during the time period from T5 (December 2019) to T6 (February 2020) in the data collection, but only a few cases since T7 (April 2020). I speculate that the event strength of the COVID-19 pandemic decreased along with the number of cases in that city; this decreased event strength resulted in decreased professional identification through a decline in the salience of professional identity and the influence of profession-spotlighting events.

Role of sensegiving and moral elevation in the identity construction process. Another important finding is that sensegiving and moral elevation during positive profession-spotlighting events also influences the increase in professional identification. These results can be built into the identity construction process model (Ashforth et al., 2008; Ashforth & Schinoff, 2016), which is characterized by an interplay between individuals and collectives (e.g., organizations, professions) involving both a top-down and a bottom-up process (Ashforth et al., 2008; Ashforth & Schinoff, 2016). Previous research on identity construction focuses either on individual active effort (Ibarra, 1999; Pratt et al., 2006) or on organizational practices (Pratt, 2000). My findings show that both sensegiving (as the top-down process) and moral elevation (as the bottom-up process) can shape identification through a sensemaking process, which describes how individuals interpret internal and environmental cues as they construct an identity (Ashforth & Schinoff, 2016).

Although not included in my theoretical arguments, findings from Study 2 can also shed light on whether there is a long-lasting influence of sensegiving and moral elevation. As a supplementary analysis, I tested whether sensegiving and moral elevation influenced changes in

professional identification after the outbreak of the pandemic. As shown in Appendix 9, the results failed to provide the long-lasting influence of sensegiving and moral elevation. I propose two possible reasons for this outcome. First, it is possible that sensegiving and moral elevation only led to an immediate change in professional identification without having a sustained impact over time. In other words, their influence disappeared after the initial short-term effect, even though sensegiving and moral elevation remained at the same level. Second, there might be changes (including a decrease) in sensegiving and moral elevation over time. As a result, sensegiving and moral elevation measured at the time the event happened may not have a long-lasting influence on changes in professional identification. Hence, future research may benefit from investigating under what conditions sensegiving and moral elevation have a long-lasting influence. Another potential direction for further research is that other experiences might be significant in ensuring the long-lasting effect of positive profession-spotlighting events. For example, reflections on the events may be beneficial in maintaining a positive impact of the events.

Discontinuous professional socialization processes. My work also broadens the socialization literature by showing the impact of disruptive events and depicting a discontinuous pattern of socialization. Previous research on newcomers' socialization process usually views time as linear by tracing changes at certain intervals, with the implicit assumption that change has occurred at a more or less steady pace (Chan & Schmitt, 2000; Kammeyer-Mueller & Wanberg, 2003; Kammeyer-Mueller et al., 2013; Song et al., 2017). That assumption may be problematic because newcomers' socialization is typically driven by episodes that precipitate new experiences, reflection, and reinterpretation of previous episodes (Ashforth, 2012). Such a discontinuous socialization process can occur in the wake of an event (Gundry, 1993). My findings show that after a decreasing pattern, novices' professional identification significantly increases after a positive profession-spotlighting event, suggesting discontinuity in the socialization process. In this way, my study answers the call by Ashforth (2012) to explore the impact of disruptive events on socialization dynamics.

Additionally, my results suggest that there is a “hangover” effect in professional socialization. The early socialization period is critical for professional identification formation (Anteby et al., 2016; Pratt et al., 2006). However, the main focus of research has been on what individuals can do—such as experimenting with their provisional selves (Ibarra, 1999), using occupational rhetorics (Fine, 1996), or trying identity customization (Pratt et al., 2006)—to construct their professional identity. Although there is research focusing on the changes in organizational identification (Zhu et al., 2017) or organizational commitment (Solinger et al., 2013), the field has yet to systematically examine how professional identification waxes and wanes for novices; this is unfortunate since research has suggested that individuals are increasingly committed to their occupations and professions (Anteby et al., 2016) and tend to identify more strongly with their occupations or professions than with their organizations (Ashforth et al., 2013; Johnson et al., 2006). My findings from Study 2 suggest that the hangover effect exists in the entry process to a profession, just as in the entry process to an organization (Boswell et al., 2005; Boswell et al., 2009). Further theory building is therefore needed to understand why there may also be a hangover effect in the professional socialization process. One possibility is that novices tend to have “idealized professional identities—identities rooted in the image and history of an occupation rather than in reality” (DiBenigno, 2022), which sets the stage for decreasing professional identification when the reality does not align with these idealized professional identities. Factors that contribute to idealized professional identities might include professional education, professional hiring, and socialization efforts. This line of theory building can advance my knowledge of occupations and professions dynamics in work life through the “becoming” lens (Anteby et al., 2016).

Moreover, my results indicate that positive profession-spotlighting events can provide a unique opportunity to overcome the hangover effect (Boswell et al., 2005). My results suggest that as a critical event in the entry process (Ashforth et al., 2014), the COVID-19 pandemic reshaped novice nurses’ professional identification. Therefore, my research provides insight into how to overcome the hangover effect during professional socialization. My findings suggest that

similar positive profession-spotlighting events could be created artificially or utilized to overcome the hangover effect, which may also enhance novices' professional identification.

Practical Implications

My findings have vital practical implications for collectives such as organizations or professions in terms of enhancing employees' identification via positive profession-spotlighting events. Although novel, unexpected events might bring uncertainty or ambiguity, my research suggests that positive profession-spotlighting events may provide an opportunity for employees to reshape their professional identification. Enhancing professional identification can not only increase employees' commitment to their work but also help employees to deal with the challenges associated with such events because the search for meaning plays a crucial role in successfully coping with them (Vignoles et al., 2006).

These findings also demonstrate how managers can better manage their workforce when facing positive profession-spotlighting events. In particular, managers should recognize that sensegiving is essential to foster employees' professional identification during critical events (Ashforth & Schinoff, 2016) and that when positive profession-spotlighting events are managed well, they can lead to more positive outcomes for employees in these professions. For instance, managers could provide interpretations (either proactively or retroactively) to help shape the meaning that employees construct from these events.

Another important practical implication of my research relates to managing successful socialization processes for new entrants. Although new entrants are likely to experience the hangover effect, my results also reveal that this effect could be reduced in the wake of a profession-spotlighting event. Hence, practitioners can bring new entrants back to a desirable work state through planned or managed positive profession-spotlighting events. For instance, International Nurses Day could be utilized as a positive profession-spotlighting event for new nurses. Managers can utilize this opportunity to develop activities such as organizing a special ceremony, giving awards to outstanding new nurses, and offering patients the chance to thank nurses, thereby stopping the hangover effect.

Study Limitations and Future Directions

One limitation of this study is that I cannot rigorously discern the causality between positive profession-spotlighting events or experiences during such events as sensegiving or moral elevation, and the increase in professional identification. Researchers have suggested that identity shapes how one interprets an event (Ashforth & Schinoff, 2016). New nurses who had increased professional identification might have felt a higher level of moral elevation when they witnessed other nurses' sacrifice. Another limitation is that the data were self-reported. Self-reported data might be appropriate for professional identification and moral elevation because they cannot be easily observed by third parties. However, sensegiving could (theoretically) have been collected from other sources, such as reports by supervisors.

Second, despite the benefits of using a longitudinal design to enhance the ability to capture changes in the trajectories of professional identification from before to after the positive profession-spotlighting event, I did not measure sensegiving and moral elevation before the event; as a result, I cannot examine changes in these predictors. Yet, although the measures of sensegiving and moral elevation were specific to the event context, there might be other sources of these elements. For example, the hospital might provide sensegiving about the roles and responsibilities of nurses during the onboarding processes. Future research is therefore needed to capture changes in sensegiving and moral elevation under a similar event.

Third, I treated the outbreak of the COVID-19 pandemic as a positive profession-spotlighting event in this study. I did not consider the fact that different positive profession-spotlighting events might have totally different characteristics, including their significance, public attention, frequency, duration, or strength. Nor did I not delve into how those different characteristics could affect the influence of positive profession-spotlighting events. Nevertheless, I hope that this work sets the stage for future scholars to further enhance our understanding of this important phenomenon.

Fourth, although I argued in this study that the outbreak of COVID-19 was a positive profession-spotlighting event and my results show that such an event will have a positive influence on employees who work in relevant professions, it must be noted that this event could also have a negative influence on other aspects of work experiences and behaviors. For example, research has found that the outbreak of COVID-19 as a disruptive event may have negatively influenced frontline healthcare workers' work engagement when they perceived the pandemic as a crisis (Liu et al., 2021). Some frontline workers may have had negative feelings about "suddenly being put in the spotlight" and respond negatively to the "hero" status that was widely assigned to them (Hennekam et al., 2020, p. 8). Further research should therefore consider both sides of profession-spotlighting events to analyze their potentially complex influence.

Moreover, I only focused on positive profession-spotlighting events without considering negative profession-spotlighting events. For instance, the George Floyd case and related protests worldwide against police brutality and racism (Peeples, 2020) served as a negative profession-spotlighting event for law enforcement professions. These workers might feel negative emotions when experiencing such events, which reduces their professional identification since people rely on how they feel to construct their identity (Ashforth & Schinoff, 2016). I also did not consider ambiguous profession-spotlighting events, which have the potential to highlight both the positive and negative sides of certain professions. Future research could consider broadening the theoretical meaning of profession-spotlighting events to explore how the processes at work may align with or differ from those observed in my paper when employees experience negative profession-spotlighting events or ambiguous profession-spotlighting events.

Finally, I cannot investigate whether the change in professional identification will last long-term. Future research could thus investigate how long the influence of positive profession-spotlighting events on changes in professional identification may last. Another unknown element is whether such events can have a preventive effect. As Ashforth (2020) argues, increased professional identification might foster "a certain resilience in the face of future crises and

threats to [the relevant workers'] occupation" (p. 1765). Future research could benefit from considering the long-lasting or preventive effect of profession-spotlighting events. Lastly, the valence of the profession-spotlighting events might be important in influencing the duration of the effect. Negative events might have greater power than positive events (Baumeister et al., 2001), potentially increasing the length of their influence.

CHAPTER 5: CONCLUSION

In conclusion, this dissertation represents a significant contribution to the literature on the socialization process by providing a comprehensive understanding of the influence of events on newcomers' socialization process and investigating the discontinuous socialization process.

Study 1 explores the influence of planned events on newcomers' socialization process. The findings from Study 1 indicate that job rotation, as a planned event, triggers newcomers' adaptation to disruption and recovery from disruption of task mastery. Newcomers' task mastery decreased immediately after newcomers rotated from the first department to the second department and increased again in the second department. Learning orientation can facilitate newcomers' adaptation to disruption, thus helping newcomers suffer less in an immediate decrease in task mastery. The initial challenging cognitive work experience can influence newcomers' recovery from disruption. A high level of job complexity in the first department can facilitate newcomers' recovery from disruption, thus helping newcomers experience a greater increase in task mastery in the second department. Interestingly, newcomers' social adaptation (social integration) process is altered by job rotation. Newcomers' social integration increased if they did not have to rotate to other departments, while newcomers with job rotation did not experience an increase in social integration. Proactive personality influences newcomers' adaptation to disruption. Only newcomers with a higher level of proactive personality experienced an increase in social integration after job rotation. I did not find the influence of the initial challenging social work experience on newcomers' recovery from disruption.

Study 2 explores the influence of unplanned events on newcomers' socialization process. The findings from Study 2 indicate how the outbreak of the COVID-19 pandemic, as an unplanned event but a positive profession-spotlighting event, significantly increased new

graduate nurses' professional identification after they experienced a decrease in professional identification during their initial months in professional practice. I also found that this increase in professional identification was influenced by sensegiving and moral elevation. The top-down process triggered by sensegiving and the bottom-up process triggered by moral elevation may help to enhance professional identification.

Together, this two-study dissertation offers important theoretical and practical insights into understanding the nuanced role of events, both planned and unplanned, within the newcomers' socialization process. My findings underscore that both planned and unplanned events could provoke a discontinuous socialization process, diverging from the traditional perspective of socialization as a seamless, linear process. From a theoretical perspective, these findings illuminate the inherent dynamism and complexity embedded within the socialization process, underscoring how the newcomers' experience is molded by unique events that punctuate their journey. This emphasis on the roles of planned and unplanned events introduces a newfound richness and complexity to our understanding of the socialization process. Therefore, this dissertation provides theoretical implications to delve deeper into the critical junctures and transitions during the socialization process, examining their nature, their effects, and the strategies that can be used to manage them effectively. From a practical perspective, understanding the role of these events and their influence on the socialization process can offer considerable value to organizations and their newcomers. It can aid organizations to strategize and tailor their socialization initiatives, equipping them with the knowledge to better support their newcomers. This could involve anticipating the challenges that might arise due to job rotation or other disruptive events, or capitalizing on the opportunities that these events may

present for enhancing newcomer adjustment and identification or leveraging these events for maximum benefits.

APPENDICES

Appendix 1: Measures Used in Study 1

Task mastery (T1-T12)

1. For the past month, I am confident about the adequacy of my job skills and abilities.
2. For the past month, I feel competent conducting my job assignments.
3. For the past month, I rarely make mistakes when conducting my job assignments.

Social integration (T1-T12)

1. For the past month, I get along with the people I work with very well.
2. For the past month, my co-workers seem to accept me as one of them.
3. For the past month, I am usually excluded in social get togethers given by other people in the organization. (Reverse coded, dropped because of reliability concern).

Learning Orientation (T0)

1. I am willing to select a challenging work assignment that I can learn a lot from.
2. For me, development of my work ability is important enough to take risks.
3. I enjoy challenging and difficult tasks at work where I'll learn new skills.
4. I prefer to work in situations that require a high level of ability and talent.
5. I often look for opportunities to develop new skills and knowledge.

Proactive Personality (T0)

1. I am constantly on the lookout for new ways to improve my life.
2. Wherever I have been, I have been a powerful force for constructive change.
3. Nothing is more exciting than seeing my ideas turn into reality.

4. If I see something I don't like, I fix it.
5. No matter what the odds, if I believe in something I will make it happen.
6. I love being a champion for my ideas, even against others' opposition.
7. I excel at identifying opportunities.
8. I am always looking for better ways to do things.
9. If I believe in an idea, no obstacle will prevent me from making it happen.
10. I can spot a good opportunity long before others can.

Job complexity (T3, T9)

1. The job in this department comprises relatively complicated tasks (dropped because of reliability concern).
2. The job in this department involves performing relatively simple tasks. (Reverse coded)
3. The tasks on the job are simple and uncomplicated. (Reverse scored)

Social undermining (T4, T8)

1. Coworkers in this department act in unpleasant or angry manner toward you.
2. Coworkers in this department make your life difficult.
3. Coworkers in this department act in ways that show he/she dislikes you.
4. Coworkers in this department make you feel unwanted.
5. Coworkers in this department criticize you.

Appendix 2: Analytic Models of Task Mastery And Social Integration

The discontinuous growth modeling analyses were performed according to a standard practice by first using a series of models to develop a Level 1 model that describes the change in task mastery and social integration within persons and then introducing Level 2 predictors that allow for between-person differences in the Level 1 change parameters (see Bliese et al., 2016; Bliese et al., 2020; Bliese & Ployhart, 2002).

Model 1. Calculate Intra-class Correlation Coefficient

I partitioned the variance in the task mastery and social integration into within-person and between-person components using an unconditional (random intercept) mixed effects model. The model is presented in Equations 1 and 2:

$$\text{Level 1: } Y_{ti} = b_{0i} + e_i \quad (1)$$

$$\text{Level 2: } b_{0i} = \gamma_{00} + u_{0i} \quad (2)$$

The analysis revealed that 44% of the variance in task mastery and 46% of the variance in social integration over time was explained by between-team variance, suggesting that meaningful person-level differences existed.

Model 2. Add Linear Discontinuous Fixed Effects of Time

The next step in the discontinuous growth modeling process involved determining the fixed functions for time. The first model I examined was a basic discontinuous Level 1 model that modeled an overall trajectory of task mastery or social integration in the first time period (PRE), an overall change in task mastery or social integration immediately following the time point of job rotation (TRANS) and a subsequent overall trajectory in task mastery or social integration in the second time period (POST). Equation 3 represents the Level 1 model. The Level 2 model of random intercepts from Equation 2 is retained.

$$\text{Level 1: } Y_{ti} = b_{0i} + b_1PRE_{ti} + b_2TRANS_{ti} + b_3POST_{ti} + e_i \quad (3)$$

$$\text{Level 2: } b_{0i} = \gamma_{00} + u_{0i} \quad (2)$$

Model 3. Add Quadric Discontinuous Fixed Effects of Time

To further explore whether the effects of time would be better modeled in a nonlinear fashion, I next examined a model with quadric time variable PRE^2 and $POST^2$ included. Equation 4 represents the Level 1 model. The Level 2 model of random intercepts from Equation 2 is retained.

$$\begin{aligned} \text{Level 1: } Y_{ti} = & b_{0i} + b_1PRE_{ti} + b_2TRANS_{ti} + b_3POST_{ti} \\ & + b_4PRE_{ti}^2 + b_5TRANS_{ti}^2 + e_i \end{aligned} \quad (4)$$

$$\text{Level 2: } b_{0i} = \gamma_{00} + u_{0i} \quad (2)$$

I retained linear discontinuous growth model for task mastery and quadratic discontinuous growth model for social integration.

Model 4. Variability in Growth Parameters

The next step of the analysis focused on modeling variability in the growth parameters. Previous models allow for random intercepts, but I have assumed that changes in task mastery across time followed the same trajectory for all new nurses. In this step, I tested for time effect (slope) differences between persons. The model retains Equation 3 at Level 1, and retains Equation 2 at Level 2. The model is updated to allow for random slopes before (PRE, Equation 5), right after (TRANS, Equation 6) and after (POST, Equation 7) the time point of job rotation. For social integration, I also allow for random slopes of PRE^2 and $POST^2$ terms.

$$\text{Level 1: } Y_{ti} = b_{0i} + b_{1i}PRE_{ti} + b_{2i}TRANS_{ti} + b_{3i}POST_{ti} + e_i \quad (3)$$

$$\text{Level 2: } b_{0i} = \gamma_{00} + u_{0i} \quad (2)$$

$$b_{1i} = \gamma_{10} + u_{1i} \quad (5)$$

$$b_{2i} = \gamma_{20} + u_{2i} \quad (6)$$

$$b_{3i} = \gamma_{30} + u_{3i} \quad (7)$$

A comparison of the log likelihood ratios for Model 2 (for task mastery) or Model 3 (for social integration) and Model 4 indicated that Model 4 significantly fit to the data better, therefore random slope terms were retained for subsequent models.

Model 5 and Model 6. Error structure

As final steps in the Level 1 analysis, I proceeded to test for autocorrelation and heteroscedasticity in the model error structures. Results from these analyses revealed no evidence of autorcorrelation or for heteroscedasticity. Therefore, I retained model with homoscedasticity of task mastery and social integration in subsequent analyses.

Model 7. Adding Level 2 Predictor of Intercept Variability

After finalizing Level 1 analysis, I then test the effect of Level 2 predictors. First, I tested for a main effect of job rotation. The model retains Equation 3 at Level 1. The model is updated at Level 2 to predict intercept variation with job rotation (Equation 8), and retains Equations 5, 6 and 7 allowing for random slopes:

$$\text{Level 1: } Y_{ti} = b_{0i} + b_{1i}PRE_{ti} + b_{2i}TRANS_{ti} + b_{3i}POST_{ti} + e_i \quad (3)$$

$$\text{Level 2: } b_{0i} = \gamma_{00} + \gamma_{01}Job\ Rotation_i + u_{0i} \quad (8)$$

$$b_{1i} = \gamma_{10} + u_{1i} \quad (5)$$

$$b_{2i} = \gamma_{20} + u_{2i} \quad (6)$$

$$b_{3i} = \gamma_{30} + u_{3i} \quad (7)$$

Model 8. Adding Level 2 Predictor of Slope Variability

Finally, in order to test the interaction between job rotation and change in task mastery or social integration, I added job rotation as predictors of the slopes for time components indicating changes in task mastery (PRE, TRANS, POST) or social integration (PRE, PRE², TRANS, POST, POST²). This model is presented in the main body of the paper. The model retains Model 3 at

Level 1 and Equation 8 at Level 2. The model is updated at Level 2 to predict the change trajectory after job rotation (TRANS and POST).

$$\text{Level 1: } Y_{ti} = b_{0i} + b_{1i}PRE_{ti} + b_{2i}TRANS_{ti} + b_{3i}POST_{ti} + e_i \quad (3)$$

$$\text{Level 2: } b_{0i} = \gamma_{00} + \gamma_{01}Job\ Rotation_i + u_{0i} \quad (8)$$

$$b_{1i} = \gamma_{10} + \gamma_{11}Job\ Rotation_i + u_{1i} \quad (5)$$

$$b_{2i} = \gamma_{20} + \gamma_{21}Job\ Rotation_i + u_{2i} \quad (9)$$

$$b_{3i} = \gamma_{30} + \gamma_{31}Job\ Rotation_i + u_{3i} \quad (7)$$

I also tested the model with the interaction of learning orientation and job complexity in the first department and change terms of task mastery and the model with the interaction of proactive personality and social undermining in the first department and changes terms of social integration, with controlling for age, gender, education, work experience, and departments they work in. I take the model with the interaction of learning orientation and change terms of task mastery as an example below:

$$\text{Level 1: } Y_{ti} = b_{0i} + b_{1i}PRE_{ti} + b_{2i}TRANS_{ti} + b_{3i}POST_{ti} + e_i \quad (3)$$

$$\text{Level 2: } b_{0i} = \gamma_{00} + \gamma_{01}CONTROL_i + \gamma_{02}Learning\ Orientation_i + u_{0i} \quad (8)$$

$$b_{1i} = \gamma_{10} + \gamma_{11}Learning\ Orientation_i + u_{1i} \quad (5)$$

$$b_{2i} = \gamma_{20} + \gamma_{21}Learning\ Orientation_i + u_{2i} \quad (9)$$

$$b_{3i} = \gamma_{30} + \gamma_{31}Learning\ Orientation_i + u_{3i} \quad (12)$$

Appendix 3: The Results without Control Variables in Study 1

When testing the influence of learning orientation and job complexity in the first department on task mastery, I controlled for participants' age, gender, education, departments before the job rotation, departments after the job rotation, and job complexity in the second department. I also tested the model without all control variables. Table A1.1 shows the results without control variables. The results remained similar with results with control variables.

When testing the influence of proactive personality and social undermining in the first department on social integration, I controlled for participants' age, gender, education, departments before the job rotation, departments after the job rotation, and social undermining in the second department. I also tested the model without all control variables. Table A1.2 shows the results without control variables. The results remained similar with results with control variables.

Appendix 4: The Influence of Proactive Personality on the Trajectory of Task Mastery in Study 1

Table A1.3 shows that proactive personality was positively related to the intercept of task mastery ($\gamma = .28, p < .001$, Model 2). The results suggest that individuals with a higher level of proactive personality started with a higher level of task mastery. Furthermore, the interactions between proactive personality and POST was significant for task mastery (POST $\times$ Proactive Personality = $-.04, p = .032$, Model 2). The simple slope test results show that there was a smaller increase in task mastery for individuals with a higher level of proactive personality (POST = $.03, p = .107$) than for individuals with a lower level of proactive personality (POST = $.10, p < .001$). The reason might be that individuals with a higher level of proactive personality already have a high level of task mastery (there is a significant main effect of proactive personality on intercept of task mastery), which leads to less room for increase in task mastery.

Appendix 5: Discontinuous Growth Model for Role Clarity in Study 1

I measured role clarity using 3 items from Rizzo et al. (1970), including “I feel certain about how much authority I have”, “I know what my responsibilities are”, “I know exactly what is expected of me”. I used the same procedure of analyzing discontinuous growth model for task mastery and social integration to analyze discontinuous growth model for role clarity.

Intraclass correlation coefficient. Before analyzing the data with the proposed discontinuous growth model, I examined the intraclass correlation coefficient type 1 (ICC1; Bliese, 2000) for role clarity. The ICC1 is calculated as the proportion of between-person variance in the overall variance [between-person variance/(between-person variance + residual within-person variance)] of an unconditional (random intercept) mixed-effects model (Bliese & Ployhart, 2002). Analyses revealed the ICC1 of role clarity was .47, indicating that 47% of the variability in role clarity across time was explained by between-personal variance. This value suggests considerable individual differences in role clarity across time (Bliese, 2000).

Fixed functions for time. To examine the trend of role clarity, I first examined a basic linear discontinuous Level 1 model. The results show there was no significant change in clarity in the first department (PRE, $\beta = .004$, $p = .374$), significant decrease in role clarity after rotation (TRANS, $\beta = -.09$, $p = .016$), and a significant increase in role clarity in the second department (POST, $\beta = .03$, $p = .002$) for all new nurses. I also explored the possibility of a nonlinear discontinuous Level 1 model of role clarity by including quadratic time variables, that is, PRE^2 and $POST^2$ in the model. Results revealed that PRE^2 ($\beta = .004$, $p = .048$) and $POST^2$ ($\beta = .01$, $p = .015$) were significant. However, the model with quadratic time variables (AIC = 5355.33, BIC = 5403.20) fitted the model worse than the model without quadratic time variables (AIC = 5342.13, BIC = 5378.04). So I dropped quadratic terms from subsequent models of role clarity. In other words, I retained a linear discontinuous model in the following analyses.

Variability in growth parameters. Next, I tested variations of the basis linear model in order to account for random effects in the change terms of role clarity. When compared to the basic linear model, a model that allowed for variability in the growth parameters by including random slope terms for PRE, TRANS, and POST terms exhibited a significant model fit improvement (L.Ratio = 156.30, $p < .001$). Therefore, random slope terms were retained for subsequent models.

Error structure. Following Bliese and Ployhart (2002), I then tested for autocorrelation and heteroscedasticity in the Level 1 model error structure of role clarity. Results from these analyses revealed no converge for model with autocorrelation and no evidence for heteroscedasticity of role clarity (L.Ratio = 1.14, $p = .285$). Therefore, I retained model with homoscedasticity of role clarity in subsequent analyses.

In summary, for the general trajectory of new nurses' role clarity, an unconditional model that contains only the growth terms, showed that there was no significant change in role clarity in the first department (PRE, $\beta = .004$, $p = .421$), significant decrease in clarity after rotation (TRANS, $\beta = -.09$, $p = .017$), and a significant increase in role clarity in the second department (POST, $\beta = .02$, $p = .009$) for all new nurses.

Effects of job rotation on role clarity. I tested whether job rotation influences the changes in role clarity. There was no statistically significant interaction between PRE and job rotation ($\gamma = .02$, $p = .147$) on role clarity. There was no statistically significant interaction between TRANS and job rotation ($\gamma = -.09$, $p = .232$) on role clarity. There was no statistically significant interaction between RECOV and job rotation ($\gamma = -.01$, $p = .555$) on role clarity. Table A1.4 has presented the results of role clarity. The results suggest that job rotation had no significant influence on newcomers adaptation in role clarity.

Appendix 6: Robustness Check of COVID-19 in Study 1

Between T5 and T6, new nurses experienced the outbreak of the COVID-19 pandemic. As it could be an exogenous shock, I have checked whether it influenced the effect of job rotation on the adaptation process. Therefore, I used the outbreak of COVID-19 as one break point to split the time span into three change terms: the growth rate in the first time period (T1-T5), the change from the first time period to the second time period (T5-T6), and the growth rate in the second time period (T6-T12). Table A1.10 presents a summary of the variable coding and interpretation used in the analyses based on the outbreak of the COVID-19 pandemic.

For the general trajectory of new nurses' task mastery, Model 1 in Table A1.11, an unconditional model that contains only the growth terms, showed that there was a significant increase in task mastery before the outbreak of the COVID-19 pandemic (PRE-COVID 19, $\beta = .04$, $p = .003$), a significant decrease in task mastery from before to after the outbreak of the COVID-19 pandemic (TRANS-COVID 19, $\beta = -.10$, $p = .009$), and a significant increase in task mastery after the outbreak of the COVID-19 pandemic (POST-COVID 19, $\beta = .02$, $p < .001$) for all new nurses. Then, to investigate whether nurses with job rotation and without job rotation have different trajectories in task mastery before, during and after the outbreak of the COVID-19 pandemic. The results (Model 3, Table A1.11) show that there was no statistically significant interaction between job rotation and PRE-COVID 19 (Job Rotation $\times$ PRE-COVID 19: $\gamma = -.01$, $p = .778$), job rotation and TRANS-COVID 19 (Job Rotation $\times$ TRANS-COVID 19: $\gamma = -.02$, $p = .792$), or job rotation and POST-COVID 19 (Job Rotation $\times$ POST-COVID 19: $\gamma = -.02$, $p = .147$) on task mastery. Therefore, it was job rotation, rather than the outbreak of the COVID-19 pandemic that caused different trajectories of task mastery between new nurses with and without job rotation.

For the general trajectory of new nurses' social integration, Model 1 in Table A1.12, an unconditional model that contains only the growth terms, showed that there was no significant

decrease in social integration in the first time period (PRE-COVID 19, $\beta = -.05$, $p = .172$; PRE-COVID 19² = .003, $p = .709$), a significant shift in social integration after rotation time point (TRANS-COVID 19, $\beta = .10$, $p = .044$), and significant decrease in social integration in the second time period (POST-COVID 19, $\beta = -.07$, $p = .007$; POST-COVID 19² = .01, $p = .008$) for all new nurses. Then, to investigate whether nurses with job rotation and without job rotation have different trajectories in social integration before, during and after the outbreak of the COVID-19 pandemic. The results (Model 3, Table A1.12) show that there was no statistically significant interaction between job rotation and PRE-COVID 19 (Job Rotation $\times$ PRE-COVID 19: $\gamma = .11$, $p = .138$; Job Rotation $\times$ PRE-COVID 19²: $\gamma = -.02$, $p = .190$), job rotation and TRANS-COVID 19 (Job Rotation $\times$ TRANS-COVID 19: $\gamma = .12$, $p = .252$), or job rotation and POST-COVID 19 (Job Rotation $\times$ POST-COVID 19: $\gamma = -.05$, $p = .291$; Job Rotation $\times$ POST-COVID 19²: $\gamma = .006$, $p = .397$) on social integration. Therefore, it was job rotation, rather than the outbreak of the COVID-19 pandemic that caused different trajectories of social integration between new nurses with and without job rotation.

Appendix 7: Robustness Check of Three Items of Social Integration in Study 1

As I deleted items of social integration because of low reliability, I conducted robustness checks to see whether deleting items influenced the findings. I tested whether using all three items of social integration would change the results. When using all three items of social integration, for the general trajectory of new nurses' social integration, Model 1 in Table A1.13, an unconditional model that contains only the growth terms, showed that there was a significant decrease in social integration in the first time period (PRE, $\beta = -.14, p < .001$; $PRE^2 = .01, p < .001$), a non-significant shift in social integration after rotation time point (TRANS, $\beta = -.004, p = .920$), and significant decrease in social integration in the second time period (POST, $\beta = -.07, p = .021$; $POST^2 = .01, p = .030$) for all new nurses. Then, I investigated the influence of job rotation on the trajectories of social integration. The results (Model 3, Table A1.13) show that there was no statistically significant interaction between job rotation and PRE (Job Rotation $\times$ PRE: $\gamma = .07, p = .099$; Job Rotation $\times$ PRE^2 : $\gamma = -.01, p = .198$), job rotation and TRANS (Job Rotation $\times$ TRANS: $\gamma = -.12, p = .207$), or job rotation and POST (Job Rotation $\times$ POST: $\gamma = .03, p = .631$; Job Rotation $\times$ $POST^2$: $\gamma = -.004, p = .723$) on social integration. However, the results without the interaction between PRE^2 and job rotation and $POST^2$ and job rotation (Model 4, Table A1.13) show that there was marginally significant interaction between job rotation and TRANS (Job Rotation $\times$ TRANS: $\gamma = -.15, p = .080$). The estimated trajectories show that new nurses with job rotation did not experience a significant decrease in social integration immediately after job rotation (TRANS, $\beta = -.02, p = .407$), while those without job rotation experienced an increase in social integration (TRANS, $\beta = .13, p = .028$). Therefore, the conclusions were similar to the results using two items of social integration.

Appendix 8: Robustness Check of Three Items of Job Complexity in Study 1

As I deleted items of job complexity because of low reliability, I conducted robustness checks to see whether deleting items influenced the findings. When using three items of job complexity in the first department, the results (Model 3, Table A1.14) showed that there was a statistically significant interaction between job complexity in the first department and POST (Job Complexity $\times$ POST: $\gamma = .04$, $p = .053$) on task mastery. The simple slope test results showed that there was a greater increase in task mastery in the second department for newcomers who experienced a higher level of job complexity in the first department (POST, $\beta = .09$, $p < .001$) than for those who experienced a lower level of job complexity in the first department (POST, $\beta = .04$, $p = .096$). Therefore, using three items of job complexity did not change the results and conclusions.

Appendix 9: Analytic Models of Professional Identification in Study 2

The discontinuous growth modeling analyses were performed according to a standard practice by first using a series of models to develop a Level 1 model that describes the change in professional identification within persons and then introducing Level 2 predictors that allow for between-person differences in the Level 1 change parameters (see Bliese et al., 2016; Bliese et al., 2020; Bliese & Ployhart, 2002).

Model 1. Calculate Intra-class Correlation Coefficient

Prior to beginning the growth modeling analyses I partitioned the variance in the professional identification into within-person and between-person components using an unconditional (random intercept) mixed effects model (Table A2.1, Model 1). The model is presented in Equations 1 and 2:

$$\text{Level 1: } Y_{ti} = b_{0i} + e_i \quad (1)$$

$$\text{Level 2: } b_{0i} = \gamma_{00} + u_{0i} \quad (2)$$

The analysis revealed that 56% of the variance in professional identification over time was explained by between-team variance, suggesting that meaningful person-level differences existed.

Model 2. Add Linear Discontinuous Fixed Effects of Time

The next step in the discontinuous growth modeling process involved determining the fixed functions for time. The first model I examined (Table A2.1, Model 2) was a basic discontinuous Level 1 model that modeled an overall trajectory of professional identification prior the outbreak of the COVID-19 pandemic (PRE), an overall change in professional identification immediately following the outbreak of the COVID-19 pandemic (TRANS) and a subsequent overall trajectory in professional identification following the outbreak of the COVID-

19 pandemic (POST). Equation 3 represents the Level 1 model. The Level 2 model of random intercepts from Equation 2 is retained.

$$\text{Level 1: } Y_{ti} = b_{0i} + b_1PRE_{ti} + b_2TRANS_{ti} + b_3POST_{ti} + e_i \quad (3)$$

$$\text{Level 2: } b_{0i} = \gamma_{00} + u_{0i} \quad (2)$$

Model 3. Add Quadric Discontinuous Fixed Effects of Time

To further explore whether the effects of time would be better modeled in a nonlinear fashion, I next examined a model with quadric time variable PRE^2 and $POST^2$ included (Table A2.1, Model 3). Equation 4 represents the Level 1 model. The Level 2 model of random intercepts from Equation 2 is retained.

$$\begin{aligned} \text{Level 1: } Y_{ti} = & b_{0i} + b_1PRE_{ti} + b_2TRANS_{ti} + b_3POST_{ti} \\ & + b_4PRE_{ti}^2 + b_5TRANS_{ti}^2 + e_i \end{aligned} \quad (4)$$

$$\text{Level 2: } b_{0i} = \gamma_{00} + u_{0i} \quad (2)$$

Because the quadratic time parameters were non-significant, they were removed from subsequent models. Thus, I selected a linear model as the model for time.

Model 4. Variability in Growth Parameters

The next step of the analysis focused on modeling variability in the growth parameters. Previous models allow for random intercepts, but I have assumed that changes in professional identification across time followed the same trajectory for all new graduate nurses. In this step, I tested for time effect (slope) differences between persons (Table A2.1, Model 4). The model retains Equation 3 at Level 1, and retains Equation 2 at Level 2. The model is updated to allow for random slopes before (PRE, Equation 5), right after (TRANS, Equation 6) and after (POST, Equation 7) the outbreak of the COVID-19 pandemic.

$$\text{Level 1: } Y_{ti} = b_{0i} + b_{1i}PRE_{ti} + b_{2i}TRANS_{ti} + b_{3i}POST_{ti} + e_i \quad (3)$$

$$\text{Level 2: } b_{0i} = \gamma_{00} + u_{0i} \quad (2)$$

$$b_{1i} = \gamma_{10} + u_{1i} \quad (5)$$

$$b_{2i} = \gamma_{20} + u_{2i} \quad (6)$$

$$b_{3i} = \gamma_{30} + u_{3i} \quad (7)$$

A comparison of the log likelihood ratios for Models 2 and 4 indicated that Model 4 was a significantly better fit to the data (L.Ration = 107.12, $p < .001$), therefore random slope terms were retained for subsequent models.

Model 5 and Model 6. Error structure

As final steps in the Level 1 analysis, I proceeded to test for autocorrelation and heteroscedasticity (Table A2.1, Model 5) in the model error structures. Results from these analyses revealed no evidence (no convergence) but for heteroscedasticity (L.Ration = 4.70, $p = .03$). Therefore, I accounted for heteroscedasticity in the Level 1 change models when proceeding to add terms to the Level 2 model.

Model 7. Adding Level 2 Predictor of Intercept Variability

After finalizing Level 1 analysis, I then test the effect of Level 2 predictors. First, I tested for a main effect of sensegiving and moral elevation in predicting model intercepts while controlling for age, gender, education, department and workload increase. This model is presented in the main body of the paper (Table 2.3, Model 2). The model retains Equation 3 at Level 1. The model is updated at Level 2 to predict intercept variation with sensegiving and moral elevation (Equation 8), and retains Equations 5, 6 and 7 allowing for random slopes:

$$\text{Level 1: } Y_{ti} = b_{0i} + b_{1i}PRE_{ti} + b_{2i}TRANS_{ti} + b_{3i}POST_{ti} + e_i \quad (3)$$

$$\begin{aligned} \text{Level 2: } b_{0i} = & \gamma_{00} + \gamma_{01}CONTROL_i \\ & + \gamma_{02}SENSEGIVING_i + \gamma_{03}MORAL\ ELEVATION_i + u_{0i} \end{aligned} \quad (8)$$

$$b_{1i} = \gamma_{10} + u_{1i} \quad (5)$$

$$b_{2i} = \gamma_{20} + u_{2i} \quad (6)$$

$$b_{3i} = \gamma_{30} + u_{3i} \quad (7)$$

Results indicated that sensegiving ($\beta = .32$; $p < .001$) and moral elevation ($\beta = .20$; $p < .001$) have significant positive overall effects on professional identification.

Model 8. Adding Level 2 Predictor of Slope Variability

Finally, in order to test the influence of sensegiving and moral elevation on the change in professional identification, I added sensegiving and moral elevation as predictors of the slopes for time components indicating changes in professional identification (TRANS). This model is presented in the main body of the paper (Table 2.3, Model 3). The model retains Model 3 at Level 1 and Equation 8 at Level 2. The model is updated at Level 2 to predict the change trajectory after the outbreak of the COVID-19 pandemic (TRANS and POST).

$$\text{Level 1: } Y_{ti} = b_{0i} + b_{1i}PRE_{ti} + b_{2i}TRANS_{ti} + b_{3i}POST_{ti} + e_i \quad (3)$$

$$\begin{aligned} \text{Level 2: } b_{0i} = & \gamma_{00} + \gamma_{01}CONTROL_i \\ & + \gamma_{02}SENSEGIVING_i + \gamma_{03}MORAL ELEVATION_i + u_{0i} \end{aligned} \quad (8)$$

$$b_{1i} = \gamma_{10} + u_{1i} \quad (5)$$

$$\begin{aligned} b_{2i} = & \gamma_{20} + \gamma_{21}WORKLOAD_i \\ & + \gamma_{22}SENSEGIVING_i + \gamma_{23}MORAL ELEVATION_i + u_{2i} \end{aligned} \quad (9)$$

$$b_{3i} = \gamma_{30} + u_{3i} \quad (7)$$

I also tested models without controls in the Level 2 model. The conclusions (see Table A2.2, Model 2) remained the same without control (SENSEGIVIGN $\times$ TRANS $\gamma = .14$; $p < .001$; MORAL ELEVATION $\times$ TRANS $\gamma = .03$; $p = .06$).

$$\text{Level 1: } Y_{ti} = b_{0i} + b_{1i}PRE_{ti} + b_{2i}TRANS_{ti} + b_{3i}POST_{ti} + e_i \quad (3)$$

$$\text{Level 2: } b_{0i} = \gamma_{00} + \gamma_{01}SENSEGIVING_i + \gamma_{02}MORAL ELEVATION_i + u_{0i} \quad (10)$$

$$b_{1i} = \gamma_{10} + u_{1i} \quad (5)$$

$$\begin{aligned} b_{2i} = & \gamma_{20} + \gamma_{21}SENSEGIVING_i \\ & + \gamma_{22}MORAL ELEVATION_i + u_{2i} \end{aligned} \quad (11)$$

$$b_{3i} = \gamma_{30} + u_{3i} \quad (7)$$

I also tested the model with the influence of sensegiving and moral elevation on the change term after the outbreak of the COVID-19 pandemic (SENSEGIVIGN $\times$ POST, and MORAL ELEVATION $\times$ POST).

$$\text{Level 1: } Y_{ti} = b_{0i} + b_{1i}PRE_{ti} + b_{2i}TRANS_{ti} + b_{3i}POST_{ti} + e_i \quad (3)$$

$$\begin{aligned} \text{Level 2: } b_{0i} = & \gamma_{00} + \gamma_{01}CONTROL_i \\ & + \gamma_{02}SENSEGIVING_i + \gamma_{03}MORAL ELEVATION_i + u_{0i} \end{aligned} \quad (8)$$

$$b_{1i} = \gamma_{10} + u_{1i} \quad (5)$$

$$\begin{aligned} b_{2i} = & \gamma_{20} + \gamma_{21}WORKLOAD_i \\ & + \gamma_{22}SENSEGIVING_i + \gamma_{23}MORAL ELEVATION_i + u_{2i} \end{aligned} \quad (9)$$

$$\begin{aligned} b_{3i} = & \gamma_{30} + \gamma_{31}WORKLOAD_i \\ & + \gamma_{32}SENSEGIVING_i + \gamma_{33}MORAL ELEVATION_i + u_{3i} \end{aligned} \quad (12)$$

The results (see Table A2.2, Model 2) also indicated that there was marginally significant relationship between sensegiving and the changing slope after the profession-spotlighting event (SENSEGIVIGN $\times$ POST $\gamma = -.02$; $p = .08$). But there was no significant relationship between moral elevation and the changing slope after the profession-spotlighting event (MORAL ELEVATION $\times$ POST $\gamma = -.01$; $p = .21$). The results suggested that new graduate nurses with a higher level of sensegiving experienced a steeper decreasing trajectory in professional identification after the outbreak of the pandemic (POST = .01; $p = .72$) than new graduate nurses with a lower level of sensegiving (POST = .04; $p = .01$). The results suggest that professional identification trajectories after the outbreak of the COVID-19 pandemic did not differ between new graduate nurses with higher or lower level of moral elevation.

Appendix 10: Supplementary Analysis of Turnover Intention and Job Satisfaction in Study 2

To provide additional insights into the impact of the COVID-19 outbreak on new graduate nurses, I also explored how new graduates' turnover intention and job satisfaction changed. I collected data on turnover intention using a single item ("I want to change my job") and job satisfaction using three items ("in general, I like my job", "in general, I dislike my job", "in general, I am satisfied with my job", Seashore et al., 1982) from Time 1 to Time 10. I analyzed the discontinuous growth trajectory of turnover intention and job satisfaction with the same procedure and using the same code of timing in Table 2.1. The discontinuous growth modeling analyses for turnover intention and job satisfaction were developed following the same procedures in Appendix 10.

The results for Level 1 models of turnover intention was presented in Table A2.3. The model with autocorrelation did not converge so I did not report the model with autocorrelation. There was no evidence for heteroscedasticity (L.Ratio = .36, $p = .55$). Thus I retained the model not accounting for autocorrelation or heteroscedasticity. The results indicated that new graduate nurses' turnover intention increased before the outbreak of the COVID-19 pandemic (PRE, $\beta = .03$, $p = .06$) but decreased from before to after the outbreak of the COVID-19 pandemic (TRANS, $\beta = -.32$, $p < .001$). See Figure A2.1a for the general trajectories of the change in turnover intention.

The results for Level 1 models of job satisfaction was presented in Table A2.4. The model with autocorrelation did not converge so I did not report the model with autocorrelation. There was significant evidence for heteroscedasticity (L.Ratio = 5.62, $p = .02$). Thus I retained the model not accounting for autocorrelation but accounting for heteroscedasticity. New graduate nurses' job satisfaction decreased from before to after the outbreak of the COVID-19 pandemic

(PRE, $\beta = -.05, p < .001$) but increased after the outbreak of the COVID-19 pandemic (TRANS, $\beta = .22, p < .001$). See Figure A2.1b for the general trajectories of the change in job satisfaction. The results suggested that a positive profession-spotlighting event could have significant influence on novices in relevant professions.

Appendix 11: Alternative Coding for Discontinuous Growth Model in Study 2

The coding I used for the discontinuous growth model, as shown in Table 2.1, was the basic discontinuous model, in which the TRANS variable and POST variable are defined relatively and the change pattern represents predicted change based on the linear model if the event causing the discontinuity had not occurred (Bliese & Lang, 2016). I chose this coding because in my theoretical development, I propose that the outbreak of COVID-19, as a disruptive event, will interrupt new graduate nurses' entry processes (Ashforth et al., 2014). Further, according to previous research, this process might last 1 year (Boswell et al., 2009; De Vos & Freese, 2011) or even longer (Jokisaari & Nurmi, 2009). For example, Boswell et al. (2009) found that newcomers' job satisfaction might decrease in 1 year after their entry. The results suggested that new nurses' professional identification might keep decreasing if the COVID-19 pandemic had not occurred. Therefore, I focus on relative TRANS change to see how the outbreak of COVID-19 has shifted the change patterns of new graduate nurses' professional identification.

With a negative pre-transition slope, a positive TRANS parameter could represent (a) a significant decrease, (b) no change, or (c) an increase in absolute terms. A positive POST slope could represent (a) a positive slope, (b) a flat slope, or (c) a positive slope in absolute terms. Therefore, to fully understand the change pattern, I need to examine absolute change. As suggested by Bliese and Lang (2016), the key to examine absolute change is to substitute TIME.A, as in Table A2.5, for TIME when coding the change variables. The TRANS effect and POST effect are defined relative to zero. The results based on TIME.A coding are shown in Table A2.6. The results demonstrate that there was an absolute increase in professional identification (TRANS, $\beta = .12$, $p < .001$) from T5 to T6. After the outbreak of the COVID-19

pandemic, the change of professional identification was significant and negative ($\beta = -.01$, $p = .04$), which suggests that professional identification decreased after the outbreak.

Appendix 12: Robustness Check in Study 2

I have tried two robustness tests. First, I manually set the breaking point as the time point between T4 and T5 and divided the trajectories into three slopes (T1-T4 as PRE slope, T4-T5 as TRANS slope, and T5-T10 as POST slope), as shown in Table A2.6. I examine absolute changes in which the TRANS effect and POST effect are defined relative to zero. The results showed a significant decreasing slope of professional identification from T1 to T4 (PRE, $\beta = -.04$, $p = .006$), an insignificant change from T4 to T5 (TRANS, $\beta = .03$, $p = .317$), and an insignificant change from T5 to T10 (POST, $\beta = -.001$, $p = .812$). Second, I manually set the breaking point as the time point between T6 and T7 and divided the trajectories into three slopes (T1-T6 as PRE slope, T6-T7 as TRANS slope, and T7-T10 as POST slope), as shown in Table A2.8. The results showed an insignificant change in professional identification from T1 to T6 (PRE, $\beta = -.01$, $p = .285$), an insignificant change from T6 to T7 (TRANS, $\beta = .03$, $p = .325$), and an insignificant change from T7 to T10 (POST, $\beta = -.01$, $p = .171$). The results suggest that I captured the actual boundaries of the changes in professional identification and the changes in professional identification was caused by the outbreak of the COVID-19 pandemic.

Appendix 13: Scale Validation in Study 2

Scale Validation for Sensegiving

When conceptualizing sensegiving, I followed Gioia and Chittipeddi (1991) by defining sensegiving as the “process of attempting to influence the sensemaking and meaning construction of others” (p. 442). My measure of sensegiving was developed specially for this study. To help ensure construct validity, I checked the content validity, convergent validity and discriminant validity the measure of sensegiving.

To assess whether the three items I used appropriately reflected the intended construct of sensegiving, i.e., content validity, 7 subject matter experts (2 males, 5 females) enrolled in Organizational Behaviors doctoral programs participated in content validating procedures. SMEs rated the extent to which the three items accurately reflected the definition using a five-point scale where 1 = not at all and 5 = completely. The three items were randomly ordered across participants to minimize ordering effects. The intraclass correlation coefficient showed high agreement (ICC2 = .95), suggesting that raters were largely consistent regarding item representativeness. I also followed recommendations by Hinkin and Tracey (1999) and Colquitt et al. (2019) to check Hinkin Tracey correspondence (*htc*)—the degree to which a scale’s items correspond to the construct’s definition. The *htc* of items of sensegiving was .87, which suggests strong content validity by showing high correspondence to the definition of sensegiving. Moreover, to further establish the content validity of my measures of sensegiving, I also asked the participants to rate the extent to which the three items reflected the definition of initiating structure, i.e., “the degree to which a leader defines and organizes his role and the roles of followers, is oriented toward goal attainment, and establishes well-defined patterns and channels of communication” (Judge et al., 2004, p. 36) and role clarification, i.e., the degree to which the

leaders “clarify responsibilities, expectations and performance goals” (Kalshoven et al., 2011, p. 54). I followed recommendations by Hinkin and Tracey (1999) and Colquitt et al. (2019) to check Hinkin Tracey distinctiveness (*htd*)—difference between the ratings of scale’s items on its intended construct and the ratings of those items on unintended constructs. The *htd* of items of sensegiving compared to initiating structure was .45 and the *htd* of items of sensegiving compared to role clarification was .62, which suggests the three items have very strong content validity by showing high distinctiveness to the other constructs, including initiating structure and role clarification.

I also conducted a supplementary study to assess the convergent validity and discriminant validity of sensegiving. Specifically, I tested whether sensegiving is different from role clarification behavior, initiating structure behavior and institutional socialization tactics. I recruited participants via Prolific Academic (Peer et al., 2017). As a prerequisite, employees should hold jobs with management from supervisors and have joined their current organizations in the past year. I recruited 210 participants. After excluding six participants who failed to pass the attention check, the final sample included 204 participants (61.80% female, $M_{\text{age}} = 32.94$ years, $SD_{\text{age}} = 8.30$ years, $M_{\text{organization tenure}} = 6.97$ months, $SD_{\text{organization tenure}} = 3.09$ months).

Besides the measures of sensegiving (3 items, Cronbach’s $\alpha = .87$) that were used in the main studies, I used another measurement of sensegiving (4 items, Cronbach’s $\alpha = .91$; adapted from Zhou et al., 2021) to test the convergent validity of the measure of sensegiving. I measured initiating structure (5 items, Cronbach’s $\alpha = .77$; Yeung & Shen, 2019), role clarification (5 items, Cronbach’s $\alpha = .92$; Kalshoven et al., 2011), institutionalized socialization tactics (24 items, Cronbach’s $\alpha = .95$; Ashforth et al., 2007; Jones, 1986) to test the discriminant validity of the measure of sensegiving. Initiating structure refers to “the degree to which a leader defines

and organizes his role and the roles of followers, is oriented toward goal attainment, and establishes well-defined patterns and channels of communication” (Judge et al., 2004, p. 36). Role clarification refers to the degree to which the leaders “clarify responsibilities, expectations and performance goals” (Kalshoven et al., 2011, p. 54). Institutionalized socialization tactics refer to the degree to which organizations provide “formalized developmental program for newcomers that research suggests facilitates adjustment” (Ashforth et al., 2007, p. 450).

Correlational results showed that sensegiving was highly positively related another measurement of sensegiving ($r = .77, p < .001$). This provides evidence for the convergent validity of the measure of sensegiving. In addition, sensegiving was moderately positively related to initiating structure ($r = .41, p < .001$), role clarification ($r = .45, p < .001$), and institutionalized socialization tactics ($r = .48, p < .001$). That is, sensegiving is indeed related to these related constructs. I further conducted a set of confirmatory factor analysis (CFAs) to demonstrate the discriminant validity of sensegiving and initiating structure, role clarification and institutionalized socialization tactics. I did not include the other measure of sensegiving in the CFAs because it basically captures the same content with the measure of sensegiving.

I found that the four-factor model (i.e., sensegiving, role clarification, initiating structure, institutionalized socialization tactics) demonstrated acceptable model fit: $\chi^2(594) = 1082.90$ ($p < .001$), CFI = .91, TLI = .90, RMSEA = .06, SRMR = .06. In addition, this model was superior to four alternative models: (a) a three-factor model, in which sensegiving and initiating structure were loaded on a single factor: $\chi^2(597) = 1264.07$ ($p < .001$), CFI = .88, TLI = .86, RMSEA = .07, SRMR = .07, (b) a three-factor model, in which sensegiving and role clarification were loaded on a single factor: $\chi^2(597) = 1339.79$ ($p < .001$), CFI = .88, TLI = .85, RMSEA = .08, SRMR = .08, and (c) a three-factor model, in which sensegiving and institutionalized

socialization tactics were loaded on a single factor: $\chi^2(597) = 1324.10$ ($p < .001$), CFI = .87, TLI = .85, RMSEA = .08, SRMR = .07. Taken together, these results revealed that sensegiving is distinct from initiating structure, role clarification and socialization tactics.

Scale Validation for Moral Elevation

I used the same sample mentioned before to assess whether the measurement of moral elevation has the convergent and discriminant validity. Following Aquino et al. (2011), I asked the participants to recall having witnessed an act of uncommon moral goodness and measured how they felt. Besides the measures of moral elevation (3 items, Cronbach's $\alpha = .89$) that were used in the main studies, I measured their virtue-admiration (6 items, Cronbach's $\alpha = .93$; adapted from Bai et al., 2020) to test the convergent validity of the measure of moral elevation. I measured positive emotion in general (3 items, Cronbach's $\alpha = .91$; Aquino et al., 2011) and competence-respect (5 items, Cronbach's $\alpha = .89$; adapted from Bai et al., 2020) to test the discriminant validity of the measure of moral elevation. According to Bai et al. (2020), virtue-admiration captures individuals' perception of virtue (i.e., awareness and recognition), subjective feelings or affects elicited by virtue (i.e., admiration for virtue), cognitive responses (i.e., beliefs and expectations) about the virtuous actor, and motivational states (i.e., a desire to imitate the virtuous actor). Therefore, virtue-admiration is a broader concept containing moral elevation. Positive emotions captures emotions positive but nonmoral (Aquino et al., 2011). While competence-respect captures the non-virtue admiration or respect for someone's competence, i.e., skills, expertise, ideas or information valuable to achieve specific task goals (Bai, 2017).

Correlational results showed that moral elevation was highly positively related virtue-admiration ($r = .67, p < .001$). This provides evidence for the convergent validity of the measure of moral elevation. In addition, moral elevation was moderately positively related to positive

emotions ($r = .57, p < .001$) and competence-respect ($r = .48, p < .001$). That is, moral elevation is indeed related to these related constructs. I further conducted a set of confirmatory factor analysis (CFAs) to demonstrate the discriminant validity of moral elevation, virtue-admiration, positive emotions and competence-respect.

I found that the four-factor model (i.e., moral elevation, virtue-admiration, positive emotions and competence-respect) demonstrated acceptable model fit: $\chi^2(113) = 242.43$ ($p < .001$), CFI = .95, TLI = .94, RMSEA = .08, SRMR = .06. In addition, this model was superior to four alternative models: (a) a three-factor model, in which moral elevation and virtue-admiration were loaded on a single factor: $\chi^2(116) = 526.24$ ($p < .001$), CFI = .89, TLI = .89, RMSEA = .11, SRMR = .07, (b) a three-factor model, in which moral elevation and positive emotions were loaded on a single factor: $\chi^2(116) = 482.23$ ($p < .001$), CFI = .87, TLI = .84, RMSEA = .12, SRMR = .07, and (c) a three-factor model, in which moral elevation and competence-respect were loaded on a single factor: $\chi^2(116) = 525.05$ ($p < .001$), CFI = .85, TLI = .83, RMSEA = .13, SRMR = .09. Taken together, these results revealed that moral elevation is distinct from positive emotions in general and competence-respect.

Scale Validation for Professional Identification

I used the same sample mentioned before to assess whether the measurement of professional identification has convergent and discriminant validity. Besides the measures of professional identification (3 items, Cronbach's $\alpha = .89$) that were used in the main studies, I used a longer-version measurement of professional identification (6 items, Cronbach's $\alpha = .90$; Mael & Ashforth, 1992) and affective commitment (6 items, Cronbach's $\alpha = .90$; Meyer et al., 1993) to test the convergent validity of the measure of professional identification. Affective

commitment refers to positive feelings of identification with, attachment to, and involvement in the work organization (Meyer et al., 1993). I measured normative commitment (6 items, Cronbach's $\alpha = .94$; Meyer et al., 1993) and continuance commitment (6 items, Cronbach's $\alpha = .83$; Meyer et al., 1993) to test the discriminant validity of the measure of professional identification. Normative commitment refers to the employee's feelings of obligation to remain with the collective (i.e., organizations or professions) while continuance commitment refers to the extent to which employees feel committed to their collectives (i.e., organizations or professions) by virtue of the costs that they feel are associated with leaving (Meyer et al., 1993).

Correlational results showed that the measure of professional identification was highly positively related another measurement of the 6-item measure of professional identification ($r = .79, p < .001$) and affective commitment ($r = .79, p < .001$). This provides evidence for the convergent validity of the measure of professional identification. In addition, professional identification was moderately positively related to normative commitment ($r = .50, p < .001$) and continuance commitment ($r = .48, p < .001$). That is, professional identification is indeed related to these related constructs. I further conducted a set of confirmatory factor analysis (CFAs) to demonstrate the discriminant validity of professional identification and affective commitment, normative commitment and continuance commitment. I did not include 6-item version of professional identification in the CFAs because it basically captures the same content with the measure of professional identification.

I found that the four-factor model (i.e., professional identification, affective commitment, normative commitment and continuance commitment) demonstrated acceptable model fit: $\chi^2(183) = 385.14$ ($p < .001$), CFI = .94, TLI = .94, RMSEA = .07, SRMR = .07. In addition, this model was superior to four alternative models: (a) a three-factor model, in which professional

identification and affective commitment were loaded on a single factor: $\chi^2(186) = 519.81$ ($p < .001$), CFI = .91, TLI = .89, RMSEA = .09, SRMR = .07, (b) a three-factor model, in which professional identification and normative commitment were loaded on a single factor: $\chi^2(186) = 880.49$ ($p < .001$), CFI = .81, TLI = .78, RMSEA = .14, SRMR = .13, and (c) a three-factor model, in which professional identification and continuance commitment were loaded on a single factor: $\chi^2(186) = 924.79$ ($p < .001$), CFI = .79, TLI = .877, RMSEA = .14, SRMR = .15. Taken together, these results revealed that professional identification is distinct from affective commitment, normative commitment and continuance commitment.

TABLES AND FIGURES

TABLE 1.1: Coding And Interpretation Of Change Variables In The Discontinuous Growth Models (Study 1)

Measurement occasion	Time of data collection	Coding		
		PRE	TRANS	POST
T1	Beginning of September 2019	0	0	0
T2	Beginning of October 2019	1	0	0
T3	Beginning of November 2019	2	0	0
T4	Beginning of December 2019	3	0	0
T5	End of December 2019	4	0	0
T6	End of April 2020	8	0	0
T7	End of June 2020	8	1	0
T8	End of July 2020	8	1	1
T9	End of August 2020	8	1	2
T10	End of September 2020	8	1	3
T11	End of October 2020	8	1	4
T12	End of November 2020	8	1	5
Interpretation of Change Variables		Linear change of task mastery or social integration from T1 to T6	Change in task mastery or social integration from T6 to T7 ^a	Linear change of task mastery or social integration from T7 to T12 ^b

Note. ^a The TRANS change is based on the linear model compared with zero.

^b The POST change is compared to zero.

TABLE 1.2: Mean, Standard Deviations, Reliabilities, and Correlations (Study 1)

Variable	N	Mean	SD	1	2	3	4	5	6	7	8	9	10
1. Age	255	22.14	1.51										
2. Female ^a	255	0.86	.35	.14*									
3. Education ^b	255	0.35	.48	.43**	.08								
4. Work experience ^c	255	0.16	.36	.49**	.02	.00							
5. Learning orientation (T0)	254	5.39	.90	-.17**	-.06	-.23**	-.07	(.83)					
6. Proactive personality (T0)	254	5.19	.75	-.09	-.05	-.18**	-.01	.69**	(.88)				
7. Job complexity (first department, T3)	253	3.37	.76	.03	-.28**	.22**	.02	-.05	-.06	(.84)			
8. Job complexity (second department, T9)	241	3.42	.73	.11	-.11	.14*	.17**	-.14*	-.09	.30**	(.88)		
9. Social undermining (first department, T4)	253	2.52	1.13	.03	-.21**	.07	-.02	-.07	.00	.03	-.05	(.96)	
10. Social undermining (second department, T8)	239	2.54	1.06	.09	-.02	.18**	.04	-.12	-.08	.06	-.02	.43**	(.98)
11. Task mastery (T1)	251	4.30	.85	-.16*	-.03	-.26**	-.08	.35**	.30**	-.06	-.06	-.18**	-.22**
12. Task mastery (T2)	252	4.30	.76	-.19**	.01	-.27**	-.03	.36**	.35**	-.17**	-.14*	-.21**	-.28**
13. Task mastery (T3)	253	4.30	.74	-.06	-.09	-.18**	.01	.32**	.38**	-.08	-.05	-.22**	-.25**
14. Task mastery (T4)	253	4.43	.72	-.08	.00	-.19**	.05	.28**	.35**	-.09	.03	-.25**	-.20**
15. Task mastery (T5)	252	4.42	.73	-.08	.03	-.26**	.09	.24**	.31**	-.18**	-.10	-.26**	-.38**
16. Task mastery (T6)	254	4.44	.80	-.06	.02	-.20**	.09	.26**	.29**	-.12	.05	-.29**	-.27**
17. Task mastery (T7)	254	4.29	.86	-.07	-.09	-.32**	-.02	.22**	.28**	-.09	-.09	-.20**	-.33**
18. Task mastery (T8)	239	4.38	.86	-.08	-.08	-.19**	-.01	.30**	.31**	-.02	-.01	-.27**	-.40**
19. Task mastery (T9)	241	4.35	.83	-.07	-.10	-.23**	.01	.30**	.28**	-.03	-.01	-.29**	-.34**
20. Task mastery (T10)	235	4.32	.79	-.08	.00	-.21**	-.04	.26**	.30**	-.02	.00	-.22**	-.33**
21. Task mastery (T11)	230	4.59	.81	.00	-.02	-.16*	.04	.28**	.30**	.08	.07	-.25**	-.36**
22. Task mastery (T12)	227	4.59	.78	-.03	-.05	-.11	.03	.24**	.26**	.06	.01	-.33**	-.30**

TABLE 1.2: (Continued)

Variable	N	Mean	SD	1	2	3	4	5	6	7	8	9	10
23. Social integration (T1)	251	4.78	.79	-.14*	.00	-.29**	-.05	.37**	.28**	-.02	-.16*	-.29**	-.23**
24. Social integration (T2)	252	4.76	.79	-.15*	-.04	-.24**	-.03	.32**	.25**	-.13*	-.12	-.36**	-.43**
25. Social integration (T3)	253	4.67	.79	-.01	-.06	-.16*	-.01	.28**	.27**	-.08	.01	-.44**	-.44**
26. Social integration (T4)	253	4.68	.74	-.01	.02	-.13*	-.01	.25**	.23**	-.09	.02	-.45**	-.41**
27. Social integration (T5)	252	4.63	.80	-.02	-.02	-.12*	.08	.19**	.14*	-.06	-.03	-.40**	-.49**
28. Social integration (T6)	254	4.69	.82	-.04	.04	-.12	.00	.13*	.12	-.11	.07	-.34**	-.34**
29. Social integration (T7)	254	4.74	.87	-.07	-.04	-.26**	-.03	.26**	.27**	-.11	-.06	-.32**	-.49**
30. Social integration (T8)	239	4.59	.85	-.07	-.06	-.17*	-.03	.26**	.26**	-.10	-.07	-.28**	-.56**
31. Social integration (T9)	241	4.56	.84	-.05	-.06	-.19**	.02	.24**	.21**	-.09	.01	-.30**	-.47**
32. Social integration (T10)	235	4.58	.81	-.08	.02	-.17**	-.06	.21**	.19**	-.09	-.07	-.22**	-.44**
33. Social integration (T11)	230	4.72	.84	.05	.03	-.11	.02	.23**	.20**	.06	.06	-.27**	-.41**
34. Social integration (T12)	227	4.72	.82	.00	-.03	-.07	.05	.22**	.22**	.02	.07	-.30**	-.39**

TABLE 1.2: (Continued)

Variable	11	12	13	14	15	16	17	18	19	20	21	22
11. Task mastery (T1)	(.91)											
12. Task mastery (T2)	.57**	(.90)										
13. Task mastery (T3)	.42**	.53**	(.93)									
14. Task mastery (T4)	.43**	.51**	.59**	(.94)								
15. Task mastery (T5)	.37**	.51**	.50**	.64**	(.94)							
16. Task mastery (T6)	.40**	.48**	.47**	.48**	.59**	(.93)						
17. Task mastery (T7)	.27**	.34**	.34**	.40**	.50**	.47**	(.94)					
18. Task mastery (T8)	.26**	.40**	.44**	.44**	.50**	.50**	.55**	(.96)				
19. Task mastery (T9)	.30**	.39**	.42**	.40**	.50**	.50**	.53**	.56**	(.96)			
20. Task mastery (T10)	.38**	.37**	.39**	.40**	.51**	.48**	.47**	.54**	.46**	(.91)		
21. Task mastery (T11)	.34**	.37**	.42**	.35**	.54**	.54**	.50**	.55**	.58**	.53**	(.98)	
22. Task mastery (T12)	.36**	.30**	.34**	.31**	.50**	.49**	.41**	.48**	.46**	.58**	.68**	(.97)
23. Social integration (T1)	.65**	.54**	.37**	.36**	.37**	.37**	.31**	.24**	.33**	.34**	.31**	.31**
24. Social integration (T2)	.43**	.65**	.47**	.41**	.49**	.48**	.37**	.38**	.38**	.39**	.39**	.38**
25. Social integration (T3)	.33**	.40**	.64**	.43**	.44**	.42**	.35**	.45**	.37**	.35**	.39**	.32**
26. Social integration (T4)	.35**	.38**	.44**	.65**	.53**	.47**	.37**	.32**	.39**	.31**	.35**	.33**
27. Social integration (T5)	.32**	.43**	.41**	.55**	.72**	.54**	.46**	.47**	.49**	.41**	.48**	.45**
28. Social integration (T6)	.26**	.30**	.31**	.38**	.37**	.58**	.28**	.36**	.35**	.29**	.43**	.44**
29. Social integration (T7)	.22**	.28**	.35**	.26**	.42**	.44**	.66**	.56**	.46**	.42**	.48**	.42**
30. Social integration (T8)	.24**	.34**	.39**	.34**	.46**	.44**	.47**	.75**	.49**	.41**	.46**	.37**
31. Social integration (T9)	.19**	.35**	.33**	.30**	.41**	.50**	.52**	.50**	.72**	.33**	.44**	.33**
32. Social integration (T10)	.31**	.28**	.36**	.35**	.45**	.48**	.43**	.48**	.46**	.72**	.49**	.52**
33. Social integration (T11)	.27**	.26**	.34**	.32**	.45**	.52**	.49**	.50**	.48**	.49**	.80**	.55**
34. Social integration (T12)	.28**	.26**	.33**	.33**	.46**	.50**	.42**	.51**	.38**	.50**	.59**	.79**

TABLE 2: (Continued)

Variable	23	24	25	26	27	28	29	30	31	32	33	34
23. Social integration (T1)	(.91)											
24. Social integration (T2)	.58**	(.94)										
25. Social integration (T3)	.38**	.52**	(.93)									
26. Social integration (T4)	.44**	.56**	.54**	(.94)								
27. Social integration (T5)	.37**	.54**	.49**	.66**	(.94)							
28. Social integration (T6)	.32**	.43**	.40**	.49**	.46**	(.88)						
29. Social integration (T7)	.33**	.42**	.46**	.38**	.45**	.46**	(.95)					
30. Social integration (T8)	.29**	.45**	.50**	.43**	.53**	.46**	.63**	(.93)				
31. Social integration (T9)	.30**	.44**	.43**	.41**	.52**	.47**	.61**	.64**	(.96)			
32. Social integration (T10)	.29**	.36**	.39**	.37**	.50**	.41**	.54**	.54**	.49**	(.87)		
33. Social integration (T11)	.29**	.33**	.42**	.36**	.46**	.50**	.57**	.52**	.50**	.58**	(.96)	
34. Social integration (T12)	.34**	.43**	.41**	.40**	.48**	.50**	.55**	.52**	.50**	.53**	.64**	(.97)

Notes. T0 = Time 0, T1 = Time 1, T2 = Time 2, T3 = Time 3, T4 = Time 4, T5 = Time 5, T6 = Time 6, T7 = Time 7, T8 = Time 8, T9 = Time 9, T10 = Time 10, T11 = Time 11, T12 = Time 12. Coefficient alphas are on the diagonal.

^a 0 = male, 1 = female. ^b 0 = Without bachelor's degree, 1 = With bachelor's degree or higher. ^c 0 = Without work experience, 1 = With work experience.

* p < .05, ** p < .01.

TABLE 1.3: Discontinuous Growth Model Results for Baseline Model and Differential Effects of Job Rotation on Task Mastery (Study 1)

Variable	Model 1: Task Mastery			Model 2: Task Mastery			Model 3: Task Mastery		
	Coef.	Coef.SE	t	Coef.	Coef.SE	t	Coef.	Coef.SE	t
Fixed Effects									
Level 1 Model									
Intercept	4.30***	.04	104.02	4.31***	.06	74.66	4.29***	.06	67.63
PRE	.02**	.01	3.26	.02**	.01	3.26	.01	.01	1.52
TRANS	-.19***	.04	-4.35	-.19***	.04	-4.35	-.05	.07	-.69
POST	.06***	.01	5.38	.06***	.01	5.38	.05*	.02	2.89
Level 2 Model									
Job Rotation				-.01	.07	-.19	.02	.08	.26
Job Rotation × PRE							.01	.01	.81
Job Rotation × TRANS							-.26** (H1a)	.09	-2.92
Job Rotation × POST							.02	.02	.84
Fit Indices									
-2Log(REML)		2849.76			2851.48			2854.47	
AIC		5729.51			5734.95			5746.93	
BIC		5819.29			5830.71			5860.62	
Pseudo R ²		.21			.21			.21	

Notes. n = 2941 Observations (nested in 255 new nurses).

PRE = The trajectory of task mastery in the first department;

TRANS = The change in task mastery from the first department to the second department;

POST = The trajectory of task mastery in the second department.

AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; REML = restricted maximum likelihood.

†p < .10, *p < .05, **p < .01, ***p < .001.

TABLE 1.4: Discontinuous Growth Model Results for Baseline Model and Differential Effects of Job Rotation on Social Integration (Study 1)

Variable	Model 1: Social Integration			Model 2: Social Integration			Model 3: Social Integration		
	Coef.	Coef.SE	t	Coef.	Coef.SE	t	Coef.	Coef.SE	t
Fixed Effects									
Level 1 Model									
Intercept	4.79***	.05	101.13	4.78***	.06	76.12	4.82***	.07	66.38
PRE	-.06**	.02	-2.95	-.06**	.02	-2.95	-.08*	.03	-2.41
PRE ²	.01**	.002	2.67	.01**	.002	2.67	.01 [†]	.004	1.85
TRANS	.02	.05	-.45	.02	.05	.45	.14 [†]	.08	1.78
POST	-.12***	.03	-4.17	-.12***	.03	-4.17	-.16***	.05	-3.64
POST ²	.03***	.01	4.41	.03***	.01	4.41	.03***	.01	3.66
Level 2 Model									
Job Rotation				.01	.07	.17	-.05	.10	-.53
Job Rotation × PRE							.03	.04	.65
Job Rotation × PRE ²							-.001	.01	-.15
Job Rotation × TRANS							-.21* (H1b)	.11	-1.96
Job Rotation × POST							.07	.06	1.18
Job Rotation × POST ²							-.01	.01	-1.01
Fit Indices									
-2Log(REML)		2895.96			2897.66			2911.31	
AIC		5847.92			5853.32			5890.63	
BIC		6015.49			6026.86			6094.03	
Pseudo R ²		.25			.25			.25	

Notes. n = 2941 Observations (nested in 255 new nurses).

PRE = The trajectory of social integration in the first department;

PRE² = The quadratic term of the trajectory of social integration in the first department;

TRANS = The change in social integration from the first department to the second department;

POST = The trajectory of social integration in the second department;

POST² = The quadratic term of the trajectory of social integration in the second department.

AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; REML = Restricted maximum likelihood.

[†]p < .10, * p < .05, ** p < .01, *** p < .001.

TABLE 1.5: Discontinuous Growth Model Results for Baseline Model and Differential Effects of Learning Orientation and Job Complexity on Task Mastery for Study 1

Variable	Model 1			Model 2			Model 3		
	Coef.	Coef.SE	t	Coef.	Coef.SE	t	Coef.	Coef.SE	t
Fixed Effects									
Level 1 Model									
Intercept	3.95***	.85	4.67	2.79**	.81	3.42	2.67**	.83	3.21
PRE	.03**	.01	3.19	.03**	.01	3.17	.09†	.05	1.80
TRANS	-.30***	.06	-4.98	-.30***	.06	-4.98	-1.13**	.35	-3.25
POST	.06***	.02	4.11	.06***	.02	4.04	.24**	.09	2.69
Level 2 Model									
Control Variables ^a	Included			Included			Included		
Learning Orientation				.26***	.05	5.52	.28***	.06	4.88
Job Complexity (T3)				-.07	.05	-1.55	-.07	.05	-1.55
Learning Orientation × PRE							-.01	.01	-1.27
Learning Orientation × TRANS							.15** (H2)	.06	2.41
Learning Orientation × POST							-.03*	.02	-2.01
Job Complexity (T3) × PRE									
Job Complexity (T3) × TRANS									
Job Complexity (T3) × POST									
Fit Indices									
-2Log(REML)		1584.18			1563.27			1569.02	
AIC		3228.36			3190.54			3208.05	
BIC		3389.47			3362.13			3395.65	
Pseudo R2		.21			.21			.21	

TABLE 1.5: (Continued)

Variable	Model 4			Model 5		
	Coef.	Coef.SE	t	Coef.	Coef.SE	t
Fixed Effects						
Level 1 Model						
Intercept	2.88***	.82	3.51	2.78**	.84	3.30
PRE	.02	.03	.61	.09	.06	1.37
TRANS	-.19	.21	-.93	-1.11*	.44	-2.51
POST	-.04	.05	-.74	.13	.11	1.14
Level 2 Model						
Control Variables ^a	Included			Included		
Learning Orientation	.26***	.05	5.51	.27***	.06	4.76
Job Complexity (T3)	-.10 [†]	.06	-1.79	-.10 [†]	.06	-1.73
Learning Orientation × PRE				-.02	.01	-1.22
Learning Orientation × TRANS				.15*	.06	2.34
Learning Orientation × POST				-.03 [†]	.02	-1.70
Job Complexity (T3) × PRE	.003	.05	.33	.001	.01	.09
Job Complexity (T3) × TRANS	-.03	.06	-.54	-.01	.06	-.09
Job Complexity (T3) × POST	.03* (H4)	.02	2.01	.03 [†]	.02	1.67
Fit Indices						
-2Log(REML)		1569.44			1575.63	
AIC		3208.88			3227.25	
BIC		3396.48			3430.87	
Pseudo R ²		.22			.22	

Notes. Model 1: n = 1607 Observations (nested in 137 new nurses); Model 2, Model 3, Model 4 and Model 5: n = 1596 observations (nested in 136 new graduate nurses). ^a Control variables include age, gender, work experience, education, newcomers' first departments, newcomers' second departments, and job complexity in the second department; PRE = The trajectory of task mastery in the first department; TRANS = The change in task mastery from the first department to the second department; POST = The trajectory of task mastery in the second department.

AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; REML = restricted maximum likelihood.

[†]p < .10, * p < .05, ** p < .01, *** p < .001.

TABLE 1.6: Discontinuous Growth Model Results for Baseline Model and Differential Effects of Proactive Personality and Social Undermining on Social Integration (Study 1)

Variable	Model 1			Model 2			Model 3		
	Coef.	Coef.SE	t	Coef.	Coef.SE	t	Coef.	Coef.SE	t
Fixed Effects									
Level 1 Model									
Intercept	4.89***	.74	6.65	4.25***	.71	5.98	3.42***	.92	3.72
PRE	-.05 [†]	.03	-1.66	-.05 [†]	.03	-1.68	.13	.20	.64
PRE ²	.01 [†]	.003	1.76	.01 [†]	.003	1.77	.003	.02	.13
TRANS	-.05	.08	-.55	-.05	.08	-.55	-1.67*	.53	-3.16
POST	-.11*	.04	-2.61	-.11*	.04	-2.58	.51 [†]	.28	1.83
POST ²	.02**	.01	2.97	.02**	.01	2.98	-.06	.06	-1.00
Level 2 Model									
Control Variables ^a		Included			Included			Included	
Proactive Personality				.19***	.05	3.73	.20**	.08	2.62
Social Undermining (T4)				-.13**	.04	-3.21	/ ^b	/	/
Proactive Personality × PRE							-.03	.04	-.90
Proactive Personality × PRE ²							.001	.004	.14
Proactive Personality × TRANS							.31** (H3)	.10	3.07
Proactive Personality × POST							-.12*	.05	-2.20
Proactive Personality × POST ²							.02	.01	1.40
Social Undermining (T4) × PRE									
Social Undermining (T4) × PRE ²									
Social Undermining (T4) × TRANS									
Social Undermining (T4) × POST									
Social Undermining (T4) × POST ²									
Fit Indices									
-2Log(REML)		1574.66			1568.17			1712.92	
AIC		3225.33			3226.34			3521.84	
BIC		3465.32			3466.97			3781.27	
Pseudo R ²		.27			.27			.26	

TABLE 1.6: (Continued)

Variable	Model 4			Model 5		
	Coef.	Coef.SE	t	Coef.	Coef.SE	t
Fixed Effects						
Level 1 Model						
Intercept	4.20***	.72	5.85	3.94***	.78	5.03
PRE	.05	.08	.63	.22	.22	.99
PRE ²	-.01 [†]	.01	-.69	-.01	.03	-.33
TRANS	-.01	.21	-.04	-1.73*	.60	-2.90
POST	-.22*	.11	-2.06	.39	.30	1.29
POST ²	.04*	.02	2.07	-.04	.06	-.69
Level 2 Model						
Control Variables ^a	Included			Included		
Proactive Personality	.19**	.05	3.73	.24**	.08	3.06
Social Undermining (T4)	-.11 [†]	.06	-1.85	-.11 [†]	.06	-1.81
Proactive Personality × PRE				-.03	.04	-.83
Proactive Personality × PRE ²				.0004	.004	.10
Proactive Personality × TRANS				.32**	.11	3.07
Proactive Personality × POST				-.12*	.05	-2.14
Proactive Personality × POST ²				.02	.01	1.49
Social Undermining (T4) × PRE	-.04	.02	-1.42	-.04	.03	-1.47
Social Undermining (T4) × PRE ²	.01	.003	1.53	.01	.003	1.53
Social Undermining (T4) × TRANS	-.02	.08	-.20	-.001	.08	-.01
Social Undermining (T4) × POST	.04 (H5)	.04	1.12	.04	.04	.98
Social Undermining (T4) × POST ²	-.01	.01	-.96	-.01	.01	-.86
Fit Indices						
-2Log(REML)		1582.48			1592.67	
AIC		3264.95			3295.34	
BIC		3532.15			3589.08	
Pseudo R ²		.27			.27	

Notes. Model 3: n = 1670 Observations (nested in 145 new nurses). Model 1, Model 2, Model 4 and Model 5: n = 1575 observations (nested in 134 new nurses).

^a Control variables include age, gender, work experience, education, newcomers' first departments, newcomers second departments, and job undermining in the second department.

^b The model did not converge when including social undermining (T4) in the model. Therefore, Model 3 did not include social undermining (T4) as a predictor.

PRE = The trajectory of social integration in the first department;

PRE² = The quadratic term of the trajectory of social integration in the first department;

TRANS = The change in social integration from the first department to the second department;

TRANS² = The quadratic term of the trajectory of social integration in the second department;

POST = The trajectory of social integration in the second department.

AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; REML = restricted maximum likelihood.

[†]p < .10, * p < .05, ** p < .01, *** p < .001.

TABLE 2.1: Coding and Interpretation of Change Variables in the Discontinuous Growth Models (Study 2)

Measurement occasion	Coding		
	PRE	TRANS	POST
T1	0	0	0
T2	1	0	0
T3	2	0	0
T4	3	0	0
T5	4	0	0
T6	6	1	0
T7	8	1	2
T8	10	1	4
T9	11	1	5
T10	12	1	6
Interpretation	Linear change of professional identification during socialization process before the outbreak of COVID-19 pandemic	Change of professional identification's from before to after the outbreak of COVID-19 pandemic ^a	Relative linear change of professional identification after the outbreak of COVID-19 pandemic ^b

Notes. ^a The TRANS change is based on the linear model if the outbreak of COVID-19 had not occurred.

^b The POST change is compared to the linear model before the outbreak of COVID-19.

I coded the change variables based on the actual time intervals of the data collection. For example, the time interval between T5 and T6 was 2 months; therefore, for PRE term, I coded T6 as 6 after coding T5 as 4.

TABLE 2.2: Descriptive Statistics and Correlations of Study Variables (Study 2)

	N	Mean	SD	1	2	3	4	5	6	7
1. Age	322	21.80	1.06							
2. Gender	322	.12	.32	-.08						
3. Education	322	.29	.45	.53**	-.04					
4. Rotation	322	.72	.45	.23**	-.24**	.32**				
5. Department 1 (T6)	322	.07	.25	.05	-.06	.10	.17**			
6. Department 2 (T6)	322	.13	.34	.10	-.11*	.18**	.22**	-.11		
7. Department 3 (T6)	322	.05	.22	-.02	-.09	.00	.12*	-.06	-.09	
8. Department 4 (T6)	322	.17	.38	.17**	.45**	.26**	.01	-.12*	-.18**	-.11
9. Department 5 (T6)	322	.07	.25	-.08	.02	-.06	-.21**	-.07	-.11	-.06
10. Department 6 (T6)	322	.41	.49	-.27**	-.29**	-.49**	-.26**	-.23**	-.33**	-.20**
11. Department 7 (T6)	322	.10	.30	.16**	.14*	.24**	.11*	-.09	-.13*	-.08
12. Professional identification (T6)	313	4.74	0.87	-.08	-.15**	-.14*	.08	-.02	-.06	.12*
13. Work stress (T6)	313	3.11	1.07	.04	.19**	.06	.05	.05	-.06	-.13*
14. Workload increase (T6)	313	2.93	1.10	.06	.09	.02	.10	-.02	-.03	-.07
15. Sensegiving (T6)	313	5.13	0.83	-.04	-.11	-.09	.01	-.02	.08	.16**
16. Moral elevation (T6)	313	4.79	1.27	-.02	-.03	-.02	.10	-.03	.01	.16**

TABLE 2.2: (Continued)

	8	9	10	11	12	13	14	15	16
9. Department 5 (T6)	-.12*								
10. Department 6 (T6)	-.38**	-.23**							
11. Department 7 (T6)	-.15**	-.09	-.28**						
12. Professional identification (T6)	-.14*	-.10	.14*	.03	.93				
13. Work stress (T6)	.17**	.01	-.08	.05	-.29**	.97			
14. Workload increase (T6)	.03	-.11*	.07	.05	-.18**	.48**	.82		
15. Sensegiving (T6)	-.10	-.01	-.04	.01	.57**	-.31**	-.32**	.98	
16. Moral elevation (T6)	.02	.00	-.03	-.10	.50**	-.25**	-.17**	.32**	.98

Notes. For illustrative purposes, I only present the correlation for professional identification and work stress based on the assessments at T6.

T6 = Time 6.

Cronbach's alphas are on the diagonal.

Gender: 0 = female, 1 = male. Education: 0 = college and below, 1 = bachelor's degree and above. Rotation: 0 = Without rotation; 1 = With rotation

Department 1: 0 = not in department of internal medicine, 1 = in department of internal medicine. Department 2: 0 = not in department of surgery, 1 = in department of surgery.

Department 3: 0 = not in department of obstetrics, gynecology, and pediatrics, 1 = in department of obstetrics, gynecology, and pediatrics.

Department 4: 0 = not in intensive care unit, 1 = in intensive care unit. Department 5: 0 = not in operating room, 1 = in operating room.

Department 6: 0 = not in department of outpatients, 1 = in department of outpatients. Department 7: 0 = department of emergency, 1 = in department of emergency.

* $p < .05$, ** $p < .01$.

TABLE 2.3: Discontinuous Growth Model Results for Baseline Model and Differential Effects of Sensegiving and Moral Elevation on Professional Identification (Study 2)

Variable	Model 1 (Base model)			Model 2 (Main effect model)			Model 3 (Interaction model)		
	Coef.	Coef. SE	t	Coef.	Coef. SE	t	Coef.	Coef. SE	t
Fixed Effects									
Level 1 Model									
Intercept	4.76***	.04	116.41	2.88***	.66	4.35	3.32***	.67	4.96
PRE	-.04*** (H1a)	.01	-3.44	-.04***	.01	-3.71	-.04**	.01	-3.68
TRANS	.19*** (H1b)	.05	3.89	.18***	.05	3.66	-.67***	.19	-3.54
POST	.02 [†]	.01	1.72	.03*	.01	2.25	.03*	.01	2.17
Work stress				-.05***	.01	-4.43	-.05**	.01	-4.04
Level 2 Model									
Age				-.01	.03	-.65	-.02	.03	-.63
Gender				.05	.11	.48	-.05	.11	-.48
Education				-.15 [†]	.08	-1.92	-.15 [†]	.08	-1.94
Rotation				.17*	.07	2.55	.17*	.07	2.54
Department 1				-.24 [†]	.13	-1.76	-.24 [†]	.13	-1.75
Department 2				-.41**	.11	-3.40	-.41**	.11	-3.68
Department 3				-.27 [†]	.14	-1.89	-.27 [†]	.14	-1.86
Department 4				-.26*	.11	-2.39	-.26*	.11	-2.40
Department 5				-.30*	.14	-2.18	-.30*	.14	-2.17
Department 6				-.11	.11	-.99	-.11	.11	-.98
Workload increase				-.01	.03	-.21	-.01	.03	-.37
Sensegiving				.32***	.03	9.33	.25***	.04	6.54
Moral elevation				.20***	.02	9.34	.18***	.02	7.65
Workload increase × TRANS							.01	.02	.34
Sensegiving × TRANS							.13*** (H2)	.02	4.40
Moral elevation × TRANS							.03[†] (H3)	.02	1.81

TABLE 2.3 : (Continued)

		Correlation				Correlation				Correlation		
	Variance	1	2	3	Variance	1	2	3	Variance	1	2	3
Random Effects (Variance components)												
1. Intercept	.38	--			.26	--			.25	--		
2. PRE	.01	-.31	--		.01	-.48	--		.01	-.46	--	
3. TRANS	.15	.26	-.5	--	.12	-.02	-.58	--	.11	.05	-.67	--
4. POST	.02	.21	-.8	.18	.02	.46	-.81	-.25	.02	.42	-.81	-.26
Residual	.26				.26				.26			
Fit Indices												
Log likelihood		-2848.47				-2715.20				-2709.03		
AIC		5728.94				5490.40				5484.07		
BIC		5825.60				5671.10				5682.81		
Pseudo R ²		.10				.10				.10		

Notes. Model 1: n = 3110 observations (nested in 322 new graduate nurses). Model 2 and Model 3: n = 3070 observations (nested in 313 new graduate nurses).

Gender: 0 = female, 1 = male. Education: 0 = college and below, 1 = bachelor's degree and above.

Department 1: 0 = not in department of internal medicine, 1 = in department of internal medicine. Department 2: 0 = not in department of surgery, 1 = in department of surgery. Department 3: 0 = not in department of obstetrics, gynecology, and pediatrics, 1 = in department of obstetrics, gynecology, and pediatrics.

Department 4: 0 = not in intensive care unit, 1 = in intensive care unit. Department 5: 0 = not in operating room, 1 = in operating room.

Department 6: 0 = not in department of outpatients, 1 = in department of outpatients.

PRE = the trajectory of professional identification before the outbreak of the COVID-19 pandemic;

TRANS = the change in professional identification from before to after the outbreak of the COVID-19 pandemic;

POST = the trajectory of professional identification after the outbreak of the COVID-19 pandemic.

AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion;

†p < .10, *p < .05, **p < .01, ***p < .001.

TABLE A1.1: Discontinuous Growth Model Results for Baseline Model and Differential Effects of Learning Orientation and Job Complexity on Task Mastery with No Control Variables (Study 1)

Variable	Model 1			Model 2			Model 3		
	Coef.	Coef.SE	t	Coef.	Coef.SE	t	Coef.	Coef.SE	t
Fixed Effects									
Level 1 Model									
Intercept	4.31***	.06	73.76	3.08**	.31	9.92	2.95***	.35	8.37
PRE	.03**	.01	2.95	.03**	.01	3.19	.09 [†]	.05	1.83
TRANS	-.31***	.06	-5.09	-.32***	.06	-5.38	-1.05**	.34	-3.09
POST	.06***	.01	4.34	.07***	.02	4.38	.22*	.09	2.52
Level 2 Model									
Learning Orientation				.29***	.05	6.37	.32***	.06	4.99
Job Complexity				-.11*	.04	-2.55	-.11*	.04	-2.55
Learning Orientation × PRE							-.01	.01	-1.30
Learning Orientation × TRANS							.14*	.06	2.18
Learning Orientation × POST							-.03 [†]	.02	-1.78
Job Complexity × PRE									
Job Complexity × TRANS									
Job Complexity × POST									
Fit Indices									
-2Log(REML)		1659.11			1619.81			1626.17	
AIC		3348.22			3273.61			3292.34	
BIC		3429.58			3365.69			3400.51	
Pseudo R ²		.23			.22			.22	

TABLE A1.1: (Continued)

Variable	Model 4			Model 5		
	Coef.	Coef.SE	t	Coef.	Coef.SE	t
Fixed Effects						
Level 1 Model						
Intercept	3.16***	.32	9.73	2.88***	.40	7.14
PRE	.03	.03	1.06	.09	.06	1.36
TRANS	-.29	.20	-1.42	-1.10*	.44	-2.51
POST	-.03	.05	-.59	.13	.11	1.14
Level 2 Model						
Learning Orientation	.29***	.05	6.36	.34***	.06	5.79
Job Complexity (T3)	-.13*	.05	-2.55	-.14*	.06	-2.53
Learning Orientation × PRE				-.01	.01	-1.21
Learning Orientation × TRANS				.15*	.07	2.34
Learning Orientation × POST				-.03 [†]	.02	-1.71
Job Complexity (T3) × PRE	-.001	.01	-.12	.001	.01	.08
Job Complexity (T3) × TRANS	-.01	.06	-.17	-.01	.06	-.09
Job Complexity (T3) × POST	.03*	.02	1.95	.03 [†]	.02	1.68
Fit Indices						
-2Log(REML)		1626.12			1578.42	
AIC		3292.23			3204.84	
BIC		3400.40			3333.65	
Pseudo R ²		.22			.22	

Notes. Model 1: n = 1679 Observations (nested in 146 new nurses); Model 2, Model 3 and Model 4: n = 1659 observations (nested in 144 new graduate nurses); Model 5: n = 1596 observations (nested in 136 new graduate nurses).

PRE = the trajectory of task mastery in the first department;

TRANS = The change in task mastery from the first department to the second department;

POST = the trajectory of task mastery in the second department.

AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; REML = restricted maximum likelihood.

[†]p < .10, * p < .05, ** p < .01, *** p < .001.

TABLE A1.2: Discontinuous Growth Model Results for Baseline Model and Differential Effects of Proactivity and Social Undermining on Social Integration without Control Variables (Study 1)

Variable	Model 1			Model 2			Model 3		
	Coef.	Coef.SE	t	Coef.	Coef.SE	t	Coef.	Coef.SE	t
Fixed Effects									
Level 1 Model									
Intercept	4.77***	.06	75.60	4.31***	.29	14.84	3.92***	.39	9.99
PRE	-.05 [†]	.03	-1.80	-.05 [†]	.03	-1.70	.11	.20	.57
PRE ²	.01 [†]	.003	1.87	.01 [†]	.003	1.81	.004	.02	.17
TRANS	-.07	.08	-.84	-.07	.08	-.93	-1.63*	.53	-3.06
POST	-.10*	.04	-2.34	-.10*	.04	-2.35	.52 [†]	.28	1.86
POST ²	.02**	.01	2.62	.02**	.01	2.63	-.06	.06	-1.04
Level 2 Model									
Proactivity				.23***	.05	4.42	.30**	.07	4.17
Social Undermining (T4)				-.30***	.04	-7.91	-.30***	.04	-7.89
Proactivity × PRE							-.03	.04	-.83
Proactivity × PRE ²							.0004	.004	.10
Proactivity × TRANS							.30**	.10	2.95
Proactivity × POST							-.12*	.05	-2.23
Proactivity × POST ²							.02	.01	1.44
Social Undermining (T4) × PRE									
Social Undermining (T4) × PRE ²									
Social Undermining (T4) × TRANS									
Social Undermining (T4) × POST									
Social Undermining (T4) × POST ²									
Fit Indices									
-2Log(REML)		1719.20			1677.13			1686.73	
AIC		3494.40			3414.25			3443.47	
BIC		3646.23			3576.56			3632.72	
Pseudo R ²		.26			.26			.25	

TABLE A1.2: (Continued)

Variable	Model 4			Model 5		
	Coef.	Coef.SE	t	Coef.	Coef.SE	t
Fixed Effects						
Level 1 Model						
Intercept	4.24***	.30	13.94	3.85***	.41	9.42
PRE	.04	.07	.50	.21	.21	.98
PRE ²	-.01	.01	-.54	-.01	.02	-.32
TRANS	-.01	.20	-.04	-1.57**	.56	-2.79
POST	-.19 [†]	.11	-1.82	.43	.30	1.43
POST ²	.04 [†]	.02	1.84	-.04	.06	-.68
Level 2 Model						
Proactive Personality	.23***	.05	4.43	.30***	.07	4.14
Social Undermining (T4)	-.27***	.05	-5.16	-.27***	.05	-5.10
Proactivity × PRE				-.03	.04	-.86
Proactivity × PRE ²				.001	.004	.14
Proactivity × TRANS				.30**	.10	2.96
Proactivity × POST				-.12*	.05	-2.22
Proactivity × POST ²				.02	.01	1.42
Social Undermining (T4) × PRE	-.04	.03	-1.28	-.04	.03	-1.30
Social Undermining (T4) × PRE ²	.004	.003	1.38	.004	.003	1.38
Social Undermining (T4) × TRANS	-.03	.08	-.36	-.02	.07	-.28
Social Undermining (T4) × POST	.04	.04	.98	.04	.04	.93
Social Undermining (T4) × POST ²	-.01	.01	-.88	-.01	.01	-.85
Fit Indices						
-2Log(REML)		1693.15			1702.53	
AIC		3456.29			3485.06	
BIC		3645.55			3701.23	
Pseudo R ²		.26			.26	

Notes. Model 1: n = 1679 Observations (nested in 146 new nurses). Model 2, Model 3, Model 4, Model 5: n = 1661 observations (nested in 144 new nurses).

a Control variables include age, gender, work experience, education, newcomers' first departments, newcomers second departments, and job complexity in the second department

PRE = the trajectory of social integration in the first department;

PRE2 = the quadratic term of the trajectory of social integration in the first department;

TRANS = the change in social integration from the first department to the second department;

TRANS2 = the quadratic term of the trajectory of social integration in the second department;

POST = the trajectory of social integration in the second department.

AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; REML = restricted maximum likelihood.

[†]p < .10, *p < .05, **p < .01, ***p < .001.

TABLE A1.3: Discontinuous Growth Model Results for Baseline Model and Differential Effects of Proactivity on Task Mastery (Study 1)

Variable	Model 1			Model 2		
	Coef.	Coef.SE	t	Coef.	Coef.SE	t
Fixed Effects						
Level 1 Model						
Intercept	2.54***	.84	3.03	2.37***	.86	2.75
PRE	.03***	.01	3.19	.08	.06	1.44
TRANS	-.32***	.06	-5.37	-.91*	.40	-2.29
POST	.07***	.01	4.41	.28**	.10	2.78
Level 2 Model						
Control Variables ^a		Included			Included	
Proactivity	.25***	.06	4.33	.28***	.07	4.18
Proactivity × PRE				-.01	.01	-.98
Proactivity × TRANS				.11	.08	1.51
Proactivity × POST				-.04*	.02	-2.14
Fit Indices						
-2Log(REML)		1631.25			1636.86	
AIC		3322.50			3339.73	
BIC		3484.78			3518.17	
Pseudo R ²		.22			.22	

Notes. n = 1670 Observations (nested in 145 new nurses).

^a Control variables include age, gender, work experience, education, newcomers' first departments, newcomers second departments, and job complexity in the second department.

PRE = The trajectory of task mastery in the first department;

TRANS = The change in task mastery from the first department to the second department;

POST = The trajectory of task mastery in the second department.

AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; REML = restricted maximum likelihood.

†p < .10, * p < .05, ** p < .01, *** p < .001.

TABLE A1.4: Discontinuous Growth Model Results for Baseline Model and Differential Effects of Job Rotation on Role Clarity (Study 1)

Variable	Model 1: Role Clarity			Model 2: Role Clarity			Model 3: Role Clarity		
	Coef.	Coef.SE	t	Coef.	Coef.SE	t	Coef.	Coef.SE	t
Fixed Effects									
Level 1 Model									
Intercept	4.56***	.04	124.63	4.54***	.05	86.59	4.55***	.06	81.16
PRE	.004	.01	.80	.004	.01	.80	-.004	.01	-.57
TRANS	-.09*	.04	-2.40	-.09*	.04	-2.40	-.04	.06	-.67
POST	.02**	.01	2.59	.02**	.01	2.59	.03*	.01	2.14
Level 2 Model									
Job Rotation				.03	.07	.49	.01	.07	.15
Job Rotation × PRE							.02	.01	1.45
Job Rotation × TRANS							-.09	.08	-1.20
Job Rotation × POST							-.01	.02	-.59
Fit Indices									
-2Log(REML)		-2586.92			-2588.60			-2595.34	
AIC		5203.83			5209.21			5228.68	
BIC		5293.61			5304.97			5342.37	
Pseudo R ²		.17			.17			.17	

Notes. n = 2941 Observations (nested in 255 new nurses).

PRE = The trajectory of role clarity in the first department;

TRANS = The change in role clarity from the first department to the second department;

POST = The trajectory of role clarity in the second department.

AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; REML = restricted maximum likelihood.

†p < .10, * p < .05, ** p < .01, *** p < .001.

TABLE A1.5: Measurement Invariance of Repeated Measures in Task Mastery (Study 1)

Model fit	chi-square	df	CFI	TLI	RMSEA	SRMR
Model with free factor loadings	1174.08	528	.94	.93	.07	.03
Model with constrained factor loadings	1195.54	550	.94	.93	.07	.04

Notes. n = 255.

TABLE A1.6: Measurement Invariance of Repeated Measures in Social Integration (Study 1)

Model fit	chi-square	df	CFI	TLI	RMSEA	SRMR
Model with free factor loadings	378.37	186	.97	.95	.06	.02
Model with constrained factor loadings	388.15	197	.97	.96	.06	.03

Notes. n = 255.

TABLE A1.7: Confirmatory factor analysis of variables measured at T3 (Study 1)

Model	χ^2	df	<i>p</i>	RMSEA	SRMR	CFI	TLI
Model 1 ^a	36.396	11	<.001	.10	.02	.98	.96
Model 2 ^b	274.231	13	<.001	.28	.25	.81	.69
Model 3 ^c	221.206	13	<.001	.25	.12	.85	.75
Model 4 ^d	527.047	13	<.001	.40	.28	.62	.38
Model 5 ^e	459.007	14	<.001	.35	.14	.67	.50

Notes. n = 253.

^a. 3-factor model, including task mastery, social integration and job complexity at T3;

^b. 2-factor model, combined task mastery and social integration based on the 3-factor model;

^c. 2-factor model, combined task mastery and job complexity based on the 3-factor model;

^d. 2-factor model, combined social integration and job complexity based on the 3-factor model;

^e. 1-factor model, combined all variables as a single factor.

TABLE A1.8: Confirmatory factor analysis of variables measured at T4 (Study 1)

Model	χ^2	df	<i>p</i>	RMSEA	SRMR	CFI	TLI
Model 1 ^a	121.081	32	<.001	.11	.02	.97	.96
Model 2 ^b	406.692	34	<.001	.21	.10	.87	.83
Model 3 ^c	912.189	34	<.001	.32	.22	.70	.61
Model 4 ^d	576.48	34	<.001	.25	.17	.82	.76
Model 5 ^e	1246.618	35	<.001	.37	.24	.59	.48

Notes. n = 253.

^a. 3-factor model, including task mastery, social integration and social undermining at T4;

^b. 2-factor model, combined task mastery and social integration based on the 3-factor model;

^c. 2-factor model, combined task mastery and social undermining based on the 3-factor model;

^d. 2-factor model, combined social integration and social undermining based on the 3-factor model;

^e. 1-factor model, combined all variables as a single factor.

TABLE A1.9: Confirmatory factor analysis of task mastery and social integration measured at T12 (Study 1)

Model	χ^2	df	<i>p</i>	RMSEA	SRMR	CFI	TLI
Model 1 ^a	18.46	4	<.001	.13	.01	.99	.98
Model 2 ^b	291.93	5	<.001	.50	.06	.82	.65

Notes. n = 227.

^a 2-factor model, including task mastery and social integration at T12;

^b 1-factor model, combined task mastery and social integration as a single factor.

TABLE A1.10: Coding And Interpretation Of Change Variables In The Discontinuous Growth Models based on the COVID-19 (Study 1)

Measurement occasion	Time of data collection	Coding		
		PRE-COVID 19	COVID 19	POST-COVID 19
T1	Beginning of September 2019	0	0	0
T2	Beginning of October 2019	1	0	0
T3	Beginning of November 2019	2	0	0
T4	Beginning of December 2019	3	0	0
T5	End of December 2019	4	0	0
T6	End of April 2020	4	1	0
T7	End of June 2020	4	1	2
T8	End of July 2020	4	1	3
T9	End of August 2020	4	1	4
T10	End of September 2020	4	1	5
T11	End of October 2020	4	1	6
T12	End of November 2020	4	1	7
Interpretation of Change Variables		Linear change of task mastery or social integration before the outbreak of the COVID-19 pandemic	Change in task mastery or social integration from before to after the outbreak of the COVID-19 pandemic ^a	Linear change of task mastery or social integration after the outbreak of the COVID-19 pandemic ^b

Note. ^a The COVID 19 change is based on the linear model compared with zero.

^b The POST-COVID 19 change is compared to zero.

TABLE A1.11: Discontinuous Growth Model Results for Baseline Model and Differential Effects of the Outbreak of the COVID-19 Pandemic on Task Mastery (Study 1)

Variable	Model 1			Model 2			Model 3		
	Coef.	Coef.SE	t	Coef.	Coef.SE	t	Coef.	Coef.SE	t
Fixed Effects									
Level 1 Model									
Intercept	4.27***	.05	90.98	4.28***	.06	69.28	4.24***	.07	58.99
PRE-COVID 19	.04**	.02	2.94	.04**	.01	2.94	.04*	.02	2.13
COVID 19	-.10**	.04	-2.63	-.10**	.04	-2.63	-.09	.06	-1.51
POST-COVID 19	.02***	.01	3.59	.02***	.01	3.59	.04***	.01	3.46
Level 2 Model									
Job Rotation				-.02	.07	-.23	.05	.10	.54
Job Rotation × PRE-COVID 19							-.01	.03	-.28
Job Rotation × COVID 19							-.02	.08	-.26
Job Rotation × POST-COVID 19							-.02	.01	-1.45
Fit Indices									
-2Log(REML)		2867.80			2869.52			2875.33	
AIC		5765.60			5771.03			5788.66	
BIC		5855.38			5866.79			5902.35	
Pseudo R ²		.21			.21			.21	

Notes. n = 2941 Observations (nested in 255 new nurses).

PRE-COVID 19 = the trajectory of task mastery before the outbreak of the COVID-19 pandemic;

COVID 19 = The change in task mastery from before to after the outbreak of the COVID-19 pandemic;

POST-COVID 19 = the trajectory of task mastery after the outbreak of the COVID-19 pandemic.

AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; REML = restricted maximum likelihood.

†p < .10, * p < .05, ** p < .01, *** p < .001.

TABLE A1.12: Discontinuous Growth Model Results for Baseline Model and Differential Effects of the Outbreak of the COVID-19 Pandemic on Social Integration (Study 1)

Variable	Model 1			Model 2			Model 3		
	Coef.	Coef.SE	t	Coef.	Coef.SE	t	Coef.	Coef.SE	t
Fixed Effects									
Level 1 Model									
Intercept	4.78***	.05	97.84	4.78***	.06	74.64	4.81***	.07	65.25
PRE-COVID 19	-.05	.04	-1.37	-.05	.04	-1.37	-.12*	.06	-2.04
PRE-COVID 19 ²	.003	.01	.37	.003	.01	.37	.02	.01	1.32
TRANS-COVID 19	.10*	.05	2.01	.10*	.05	2.01	.03	.08	.33
POST-COVID 19	-.07**	.02	-2.73	-.06**	.02	-2.73	-.04	.04	-1.24
POST-COVID 19 ²	.01**	.003	2.64	.01**	.003	2.64	.01	.004	1.35
Level 2 Model									
Job Rotation				.002	.07	.03	-.07	.10	-.72
Job Rotation × PRE-COVID 19							.11	.08	1.48
Job Rotation × PRE-COVID 19 ²							-.02	.02	-1.31
Job Rotation × TRANS-COVID 19							.12	.10	1.15
Job Rotation × POST-COVID 19							-.05	.05	-1.06
Job Rotation × POST-COVID 19 ²							.01	.01	.85
Fit Indices									
-2Log(REML)		2908.32			2910.03			2921.86	
AIC		5872.63			5878.06			5911.72	
BIC		6040.20			6051.60			6115.12	
Pseudo R ²		.28			.28			.28	

Notes. n = 2941 Observations (nested in 255 new nurses).

PRE = the trajectory of social integration before the outbreak of the COVID-19 pandemic;

PRE² = the quadratic term of the trajectory of social integration before the outbreak of the COVID-19 pandemic;

TRANS = The change in social integration from before to after the outbreak of the COVID-19 pandemic;

POST = the trajectory of social integration after the outbreak of the COVID-19 pandemic.

POST² = the quadratic term of the trajectory of social integration after the outbreak of the COVID-19 pandemic.

AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; REML = restricted maximum likelihood.

†p < .10, *p < .05, **p < .01, ***p < .001.

TABLE A1.13: Discontinuous Growth Model Results for Baseline Model and Differential Effects of Job Rotation on Social Integration of Three Items (Study 1)

Variable	Model 1			Model 2			Model 3			Model 4		
	Coef.	Coef.SE	t	Coef.	Coef.SE	t	Coef.	Coef.SE	t	Coef.	Coef.SE	t
Fixed Effects												
Level 1 Model												
Intercept	4.75***	.05	103.31	4.71***	.06	77.72	4.76***	.07	67.54	4.73***	.07	71.63
PRE	-.14***	.02	-6.56	-.14***	.02	-6.56	-.18***	.03	-5.55	-.15***	.02	-6.69
PRE ²	.01*	.01	2.17	.01***	.002	5.13	.02***	.003	4.33	.01***	.002	5.13
TRANS	-.004	.05	-.10	-.004	.05	-.10	.07	.07	.89	.08	.07	1.20
POST	-.07*	.03	-2.31	-.07*	.03	-2.31	-.09 [†]	.05	-1.88	-.07*	.03	-2.33
POST ²	.01*	.01	2.17	.01*	.01	2.17	.02 [†]	.01	1.70	.01*	.01	2.18
Level 2 Model												
Job Rotation				.08	.07	1.10	-.01	.09	-.14	.04	.08	.52
Job Rotation × PRE							.07 [†]	.04	1.65	.02	.01	1.43
Job Rotation × PRE ²							-.01	.01	-.36			
Job Rotation × TRANS							-.12	.10	-1.26	-.15 [†]	.09	-1.75
Job Rotation × POST							.03	.06	.48			
Job Rotation × POST ²							-.004	.01	-.36	.01	.02	.48
Fit Indices												
-2Log(REML)		2870.89			2872.07			2885.73			2878.69	
AIC		5797.77			5802.15			5839.46			5821.37	
BIC		5965.34			5975.69			6042.86			6012.83	
Pseudo R ²		.22			.22			.22			.22	

Notes. n = 2941 Observations (nested in 255 new nurses).

PRE = the trajectory of social integration in the first department;

PRE² = the quadratic term of the trajectory of social integration in the first department;

TRANS = The change in social integration from the first department to the second department;

POST = the trajectory of social integration in the second department.

POST² = the quadratic term of the trajectory of social integration in the second department

AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; REML = restricted maximum likelihood.

[†]p < .10, * p < .05, ** p < .01, *** p < .001.

TABLE A1.14: Discontinuous Growth Model Results for Baseline Model and Differential Effects of Learning Orientation and Job Complexity of Three Items on Task Mastery (Study 1)

Variable	Model 1			Model 2		
	Coef.	Coef.SE	t	Coef.	Coef.SE	t
Fixed Effects						
Level 1 Model						
Intercept	2.99***	.85	3.53	2.87**	.86	3.31
PRE	.03**	.01	3.17	.09 [†]	.05	1.79
TRANS	-.30***	.06	-4.98	-1.13**	.35	-3.25
POST	.06***	.02	4.04	.24**	.09	2.69
Level 2 Model						
Control Variables ^a		Included			Included	
Learning Orientation	.26***	.05	5.72	.29***	.06	5.00
Job Complexity (T3)	-.12 [†]	.06	-1.98	-.12 [†]	.06	-1.97
Learning Orientation × PRE				-.01	.01	-1.27
Learning Orientation × TRANS				.15*	.06	2.40
Learning Orientation × POST				-.03*	.02	-2.01
Job Complexity × PRE						
Job Complexity × TRANS						
Job Complexity × POST						
Fit Indices						
-2Log(REML)		1561.84			1567.60	
AIC		3187.68			3205.20	
BIC		3359.27			3392.81	
Pseudo R ²		.21			.21	

TABLE A1.14: (Continued)

Variable	Model 3			Model 4		
	Coef.	Coef.SE	t	Coef.	Coef.SE	t
Fixed Effects						
Level 1 Model						
Intercept	3.08***	.86	3.59	2.96***	.88	3.36
PRE	.03	.04	.70	.10	.07	1.44
TRANS	-.21	.28	-.74	-1.11*	.47	-2.37
POST	-.07	.07	-1.00	.10	.12	.88
Level 2 Model						
Control Variables ^a		Included			Included	
Learning Orientation	.26***	.05	.24	.28***	.06	4.94
Job Complexity	-.15*	.08	-1.98	-.15 [†]	.08	-1.93
Learning Orientation × PRE				-.01	.01	-1.27
Learning Orientation × TRANS				.15*	.06	2.38
Learning Orientation × POST				-.03 [†]	.02	-1.83
Job Complexity × PRE	< -.001	.01	-.002	-.002	.01	-.16
Job Complexity × TRANS	-.03	.08	-.36	-.01	.08	-.07
Job Complexity × POST	.04*	.02	1.94	.03 [†]	.02	1.73
Fit Indices						
-2Log(REML)		1567.56			1573.57	
AIC		3205.13			3223.13	
BIC		3392.73			3426.74	
Pseudo R ²		.21			.21	

Notes. Model 1: n = 1679 Observations (nested in 146 new nurses); Model 2 and Model 3: n = 1670 observations (nested in 145 new graduate nurses); Model 4 and Model 4: n = 1596 observations (nested in 136 new graduate nurses).

^aControl variables include age, gender, work experience, education, newcomers' first departments, newcomers second departments, and job complexity in the second department; PRE = the trajectory of task mastery in the first department;

TRANS = The change in task mastery from the first department to the second department; POST = the trajectory of task mastery in the second department.

AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; REML = restricted maximum likelihood.

[†]p < .10, * p < .05, ** p < .01, *** p < .001.

TABLE A2.1: Discontinuous Change Level 1 Model Building for Professional Identification for New Graduate Nurses (Study 2)

Variable	Model 1 (Null Model)			Model 2 (Linear Discontinuous Growth Model)			Model 3 (Quadratic Discontinuous Growth Model)			Model 4 (Model 2+ Random Slopes)			Model 5 (Model 4+ Heteroscedasticity)		
	Coef.	SE	t	Coef.	SE	t	Coef.	SE	t	Coef.	SE	t	Coef.	SE	t
Fixed Effects															
Intercept	4.69***	.04	132.77	4.76***	.04	115.64	4.75***	.04	107.42	4.76***	.04	116.41	4.76***	.04	116.41
PRE				-.04***	.01	-3.76	-.01	.03	-.31	-.04***	.01	-3.42	-.04***	.01	-3.44
TRANS				.18***	.05	3.91	.27*	.12	2.21	.19***	.05	3.86	.19***	.04	3.89
POST				.02 [†]	.01	1.91	.08	.07	1.13	.02 [†]	.02	1.72	.02 [†]	.01	1.72
PRE2							-.01	.01	-.79						
POST2							.01	.01	.62						
Random Effects (variance components)															
Intercept	.37			.37			.37			.39			.38		
PRE										.01			.01		
TRANS										.17			.14		
POST										.02			.02		
Residual	.29			.29			.29			.24			.26		
Fit Indices															
Log likelihood	-2905.65			-2907.07			-2915.28			-2850.82			-2848.47		
AIC	5817.30			5826.14			5846.56			5731.64			5728.94		
BIC	5835.42			5862.39			5894.88			5822.26			5825.60		

Notes. n = 3110 Observations (nested in 322 new graduate nurses).

PRE = the trajectory of professional identification before the outbreak of the COVID-19 pandemic;

TRANS = The change in professional identification from before to after the outbreak of the COVID-19 pandemic;

POST = the trajectory of professional identification after the outbreak of the COVID-19 pandemic.

AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion;

[†]p < .10, * p < .05, ** p < .01, *** p < .001.

Variable	Model 1 (Without control)			Model 2 (With POST interaction)				
	Coef.	SE	t	Coef.	SE	t		
Fixed Effects								
Level 1 Model								
Intercept	2.54***	.19	13.12	3.36***	.67	5.01		
PRE	-.04***	.01	-3.38	-.04**	.01	-3.68		
TRANS	-.68***	.15	-4.42	-1.04***	.26	-4.07		
POST	.02	.01	1.63	.15*	.06	2.58		
Level 2 Model								
Age				-.02	.03	-.63		
Gender				-.05	.11	-.47		
Education				-.15 [†]	.08	-1.94		
Rotation				.17	.07	2.55		
Department 1				-.24 [†]	.13	-1.73		
Department 2				-.41***	.11	-3.69		
Department 3				-.27 [†]	.18	-1.88		
Department 4				-.26*	.11	-2.40		
Department 5				-.30*	.14	-2.18		
Department 6				-.11	.11	-.98		
Workload increase				-.01	.03	-.38		
Work stress				-.05***	.01	-4.03		
Sensegiving	.14***	.03	4.76	.25***	.04	6.42		
Moral elevation	.03 [†]	.02	1.85	.18***	.02	7.56		
Workload × TRANS				.01	.03	.40		
Sensegiving × TRANS				.18***	.04	4.42		
Moral elevation × TRANS				.06*	.03	2.58		
Workload × POST				-.001	.01	-.24		
Sensegiving × POST				-.02 [†]	.01	-1.78		
Moral elevation × POST				-.01	.01	-1.26		
Random Effects (variance components)								
	Correlation			Correlation				
	Variance	1	2	3	Variance	1	2	3
1. Intercept	.29	--			.25	--		
2. PRE	.01	-.50	--		.01	-.46	--	
3. TRANS	.12	.13	-.67	--	.12	-.06	-.68	--
4. POST	.02	.46	-.82	.28	.02	.43	-.81	.27
Residual	.26				.26			
Fit Indices								
Log likelihood	-2710.38			2717.76				
AIC	5460.76			5507.53				
BIC	5581.30			5724.31				
Pseudo R ²	.10			.07				

Notes: n = 3070 observations (nested in 313 new graduate nurses). Gender: 0 = female, 1 = male. Education: 0 = college and below, 1 = bachelor's degree and above.

Department 1: 0 = not in department of internal medicine, 1 = in department of internal medicine. Department 2: 0 = not in department of surgery, 1 = in department of surgery. Department 3: 0 = not in department of obstetrics, gynecology and pediatrics, 1 = in department of obstetrics, gynecology and pediatrics. Department 4: 0 = not in intensive care unit, 1 = in intensive care unit. Department 5: 0 = not in operating room, 1 = in operating room. Department 6: 0 = not in department of outpatients, 1 = in department of outpatients.

PRE = the trajectory of professional identification before the outbreak of the COVID-19 pandemic.

TRANS = The change in professional identification from before to after the outbreak of the COVID-19 pandemic.

POST = the trajectory of professional identification after the outbreak of the COVID-19 pandemic.

AIC = Akaike Information Criterion. BIC = Bayesian Information Criterion.

[†]p < .10, * p < .05, ** p < .01, *** p < .001.

TABLE A2.3: Discontinuous Change Level 1 Model Building for Turnover Intention (Study 2)

Variable	Model 1 (Null Model)			Model 2 (Linear Discontinuous Growth Model)			Model 3 (Quadratic Discontinuous Growth Model)			Model 4 (Model 2+ Random Slopes)			Model 5 (Model 4+ Heteroscedasticity)		
	Coef.	SE	t	Coef.	SE	t	Coef.	SE	t	Coef.	SE	t	Coef.	SE	t
Fixed Effects															
Intercept	2.45***	.05	46.24	2.34***	.06	37.75	2.33***	.07	34.96	2.34***	.06	37.30	2.34***	.06	37.29
PRE				.03*	.01	2.05	.05	.05	.96	.03 [†]	.02	1.87	.03 [†]	.02	1.87
TRANS				-.31***	.07	-4.27	-.19	.19	-1.00	-.32***	.06	-4.33	-.32***	.07	-4.32
POST				.05**	.02	3.07	.01	.11	.10	.05**	.02	2.75	.05***	.02	2.73
PRE2							-.004	.01	-.39						
POST2							.02	.02	1.37						
Random Effects (variance components)															
Intercept	.83			.83			.83			.97			.97		
PRE										.03			.03		
TRANS										.43			.45		
POST										.05			.05		
Residual	.70			.67			.67			.51			.49		
Fit Indices															
Log likelihood	-4253.98			-4220.68			-4225.44			-4106.35			-4106.17		
AIC	8513.95			8453.35			8466.89			8242.71			8244.35		
BIC	8532.08			8489.60			8515.21			8333.33			8341.01		

Notes. n = 3110 Observations (nested in 322 new graduate nurses).

PRE = the trajectory of professional identification before the outbreak of the COVID-19 pandemic.

TRANS = the change in professional identification from before to after the outbreak of the COVID-19 pandemic.

POST = the trajectory of professional identification after the outbreak of the COVID-19 pandemic.

AIC = Akaike Information Criterion. BIC = Bayesian Information Criterion.

[†]p < .10, * p < .05, ** p < .01, *** p < .001.

TABLE A2.4: Discontinuous Change Level 1 Model Building for Job Satisfaction (Study 2)

Variable	Model 1 (Null Model)			Model 2 (Linear Discontinuous Growth Model)			Model 3 (Quadratic Discontinuous Growth Model)			Model 4 (Model 2+ Random Slopes)			Model 5 (Model 4+ Heteroscedasticity)		
	Coef.	SE	t	Coef.	SE	t	Coef.	SE	t	Coef.	SE	t	Coef.	SE	t
Fixed Effects															
Intercept	4.72***	.04	132.95	4.86***	.04	113.17	4.85***	.05	104.00	4.85***	.04	114.21	4.86***	.04	114.19
PRE				-.04***	.01	-4.10	-.03	.04	-.89	-.05***	.01	-3.99	-.05***	.01	-3.98
TRANS				.22***	.05	4.06	.25 [†]	.15	1.79	.22***	.04	3.37	.22***	.05	4.36
POST				.001	.01	.11	.03	.07	.42	.002	.01	.18	.003	.01	.19
PRE2							-.002	.01	-.29						
POST2							.001	.01	.09						
Random Effects (variance components)															
Intercept	.36			.36			.36			.40			.41		
PRE										.01			.01		
TRANS										.06			.08		
POST										.02			.02		
Residual	.38			.37			.37			.30			.27		
Fit Indices															
Log likelihood	-3292.49			-3266.81			-3274.98			-3185.28			-3182.46		
AIC	6590.99			6545.62			6565.96			6400.55			6396.93		
BIC	6609.11			6581.86			6614.28			6491.17			6493.59		

Notes. n = 3110 Observations (nested in 322 new graduate nurses).

PRE = the trajectory of professional identification before the outbreak of the COVID-19 pandemic.

TRANS = the change in professional identification from before to after the outbreak of the COVID-19 pandemic.

POST = the trajectory of professional identification after the outbreak of the COVID-19 pandemic.

AIC = Akaike Information Criterion. BIC = Bayesian Information Criterion.

[†]p < .10, * p < .05, ** p < .01, *** p < .001.

TABLE A2.5: Absolute Coding and Interpretation of Change Variables in the Discontinuous Growth Models (Study 2)

Measurement occasion	Coding		
	PRE.A	TRANS	POST
T1	0	0	0
T2	1	0	0
T3	2	0	0
T4	3	0	0
T5	4	0	0
T6	4	1	0
T7	4	1	2
T8	4	1	4
T9	4	1	5
T10	4	1	6
Interpretation	Linear change of professional identification during socialization process before the outbreak of COVID-19 pandemic	Professional identification's change from before to after the outbreak of COVID-19 pandemic ^a	Linear change of professional identification after the outbreak of COVID-19 pandemic ^b

Notes. ^a The TRANS change is compared to zero.

^b The POST slope is compared to zero.

TABLE A2.6: Discontinuous Growth Model Results for Baseline Model in Absolute Coding

Variable	Model			
	Coef.	Coef.SE	t	
Fixed Effects				
Level 1 Model				
Intercept	4.76***	.04	116.40	
PRE	-.04***	.01	-3.44	
TRANS	.12**	.04	3.26	
POST	-.01*	.01	-2.04	
			Correlation	
	Variance		1	2 3
Random Effects (variance components)				
1. Intercept	.39	--		
2. PRE	.01	-.31	--	
3. TRANS	.10	.11	-.06	--
4. POST	.01	-.06	-.06	-.66
Residual	.26			
Fit Indices				
Log likelihood	-2848.47			
AIC	5728.94			
BIC	5825.60			
Pseudo R ²	.10			

Notes. n = 3110 Observations (nested in 322 new graduate nurses).

PRE = the trajectory of professional identification before the outbreak of the COVID-19 pandemic;

TRANS = The change in professional identification from before to after the outbreak of the COVID-19 pandemic;

POST = the trajectory of professional identification after the outbreak of the COVID-19 pandemic.

AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion;

*p < .10, **p < .05, ***p < .01, ****p < .001.

TABLE A2.7: Robustness Check of Setting T4-T5 as Turning Point (Study 2)

Measurement occasion	Coding		
	PRE	TRANS	POST
T1	0	0	0
T2	1	0	0
T3	2	0	0
T4	3	0	0
T5	3	1	0
T6	3	1	2
T7	3	1	4
T8	3	1	6
T9	3	1	7
T10	3	1	8
Interpretation	Linear change of professional identification from T1 to T4	Professional identification's change from T4 to T5	Relative linear change of professional identification from T5 to T10

TABLE A2.8: Robustness Check of Setting T6-T7 as Turning Point (Study 2)

Measurement occasion	Coding		
	PRE	TRANS	POST
T1	0	0	0
T2	1	0	0
T3	2	0	0
T4	3	0	0
T5	4	0	0
T6	6	0	0
T7	6	1	0
T8	6	1	2
T9	6	1	3
T10	6	1	4
Interpretation	Linear change of professional identification from T1 to T6	Professional identification's change from T6 to T7	Relative linear change of professional identification from T7 to T10

TABLE A2.9: Model Fit of Invariance Test for Professional Identification, Turnover Intention and Job Satisfaction (Study 2)

Variables and Model	χ^2	df	p	RMSE A	CFI	TLI	SRM R	$\Delta\chi^2$	Δd_f	ΔCFI
Professional identification										
Configural model	1032.967	288	<.001	.090	.926	.889	.040			
Metric model	1066.016	306	<.001	.088	.925	.893	.052	33.049	18	-0.001
Job satisfaction										
Configural model	834.004	288	<.001	.077	.915	.871	.082			
Metric model	851.680	306	<.001	.074	.915	.879	.081	17.676	18	0.000

Notes: For the metric model, I constrained the factor loadings to be the same across time. I remained the results to the three decimal places for model comparison.

FIGURE 1.1: Hypothesized Baseline Model (H1): How Job Rotation Impacts Adjustment Trajectories (Study 1)

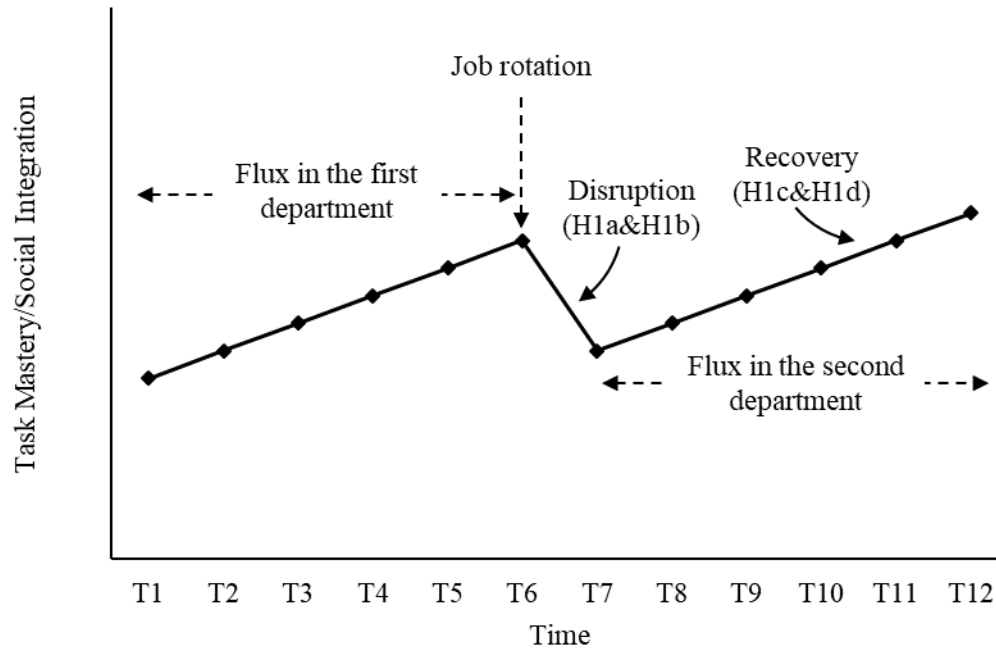


FIGURE 1.2a: New nurses' task mastery as a function of job rotation (Study 1)

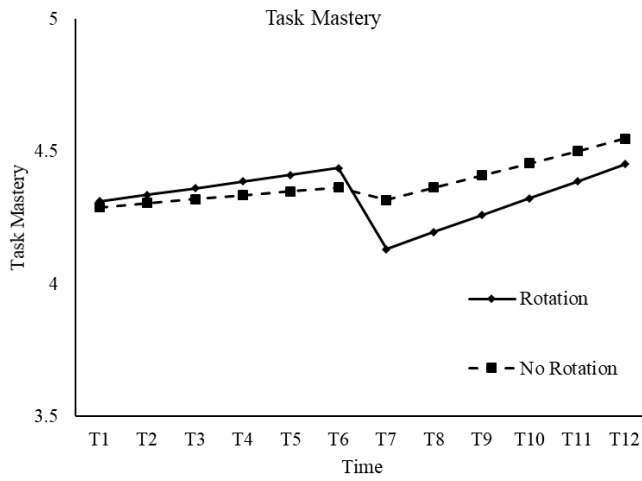


FIGURE 1.2b: New nurses' social integration as a function of job rotation (Study 1)

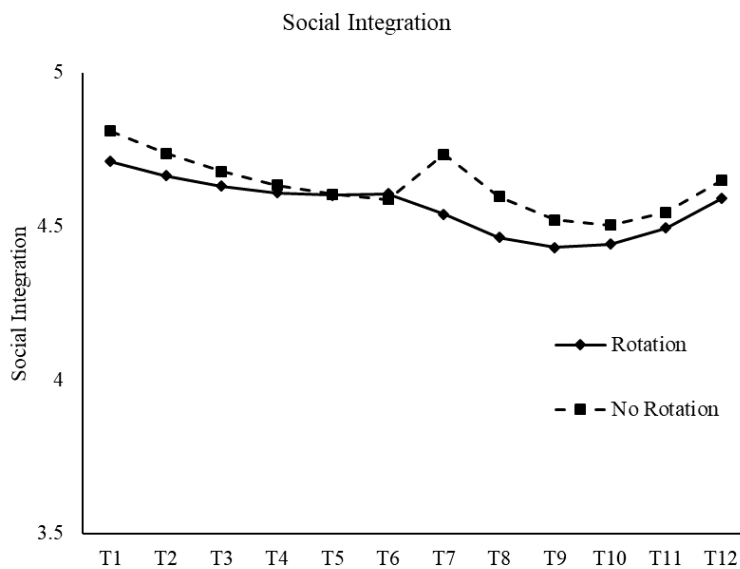


FIGURE 1.3a: New nurses' task mastery as a function of learning orientation (Study 1)

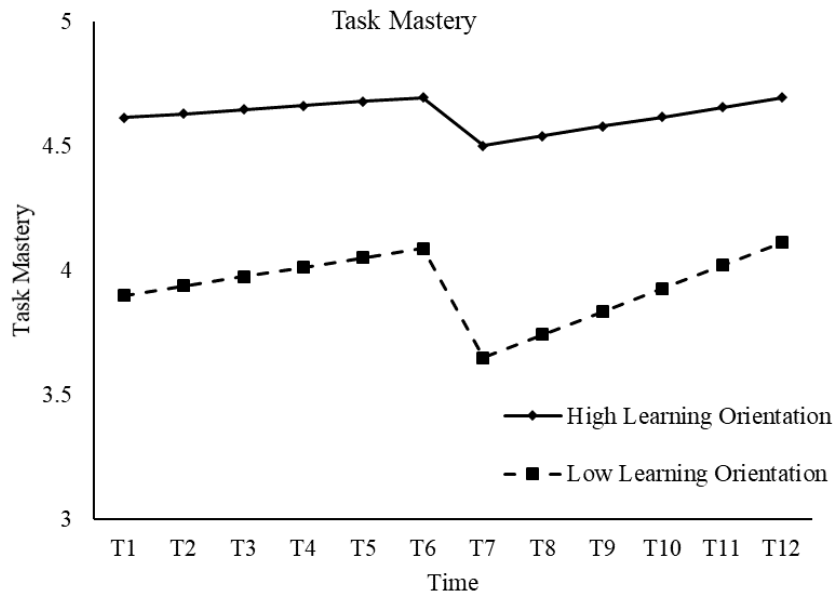


FIGURE 1.3b: New nurses' social integration as a function of proactive personality (Study 1)

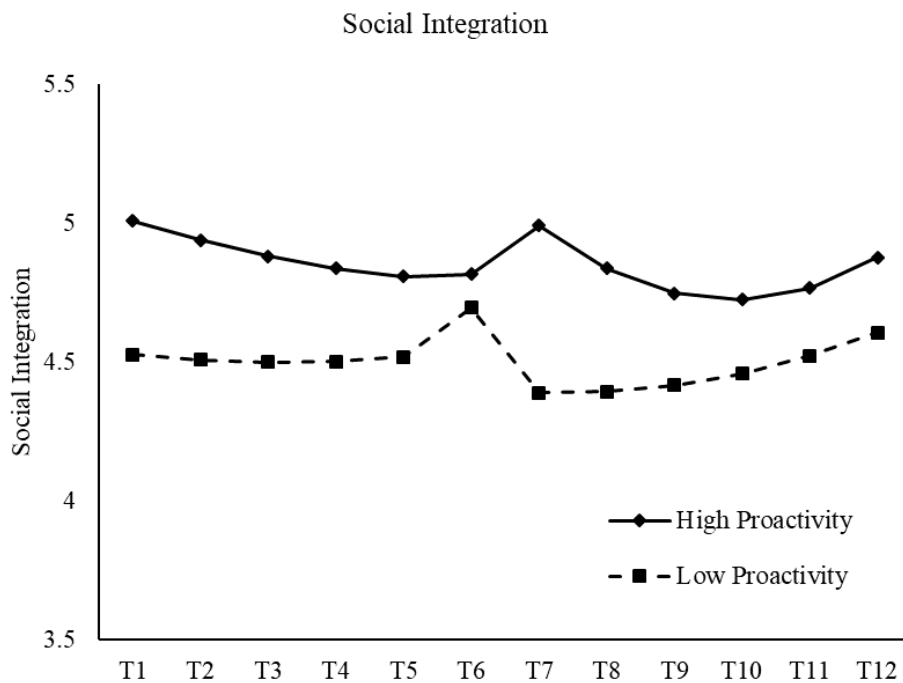


FIGURE 1.4: New nurses' task mastery as a function of job complexity in the first department (Study 1)

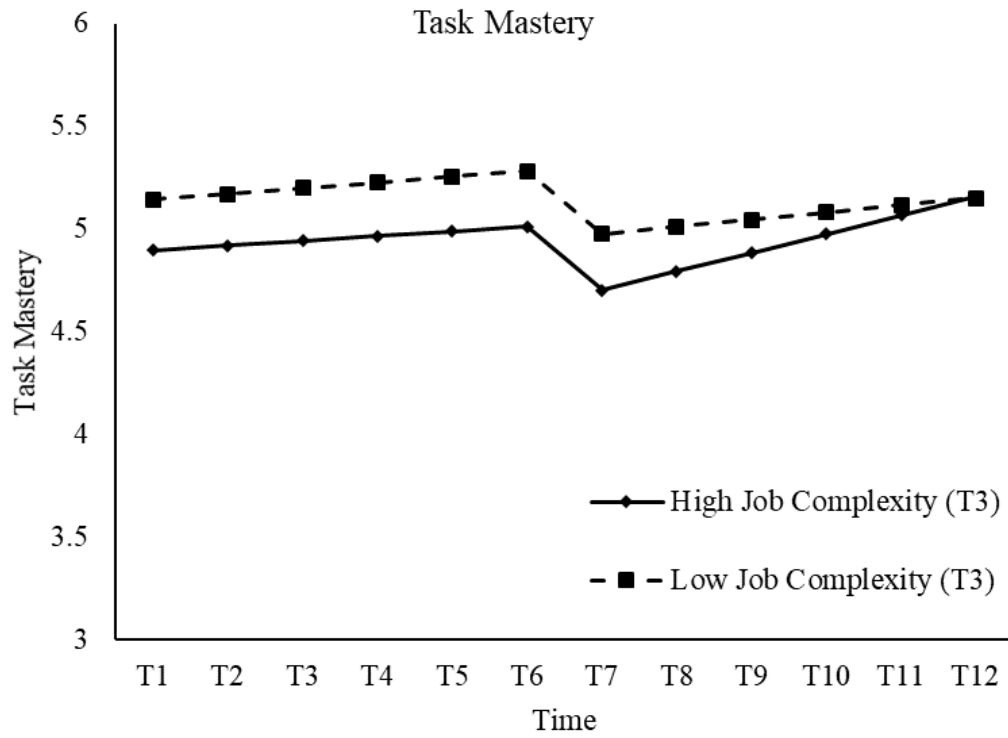


FIGURE 1.5: New nurses' task mastery and social integration as a function of job rotation based on the raw data (Study 1)

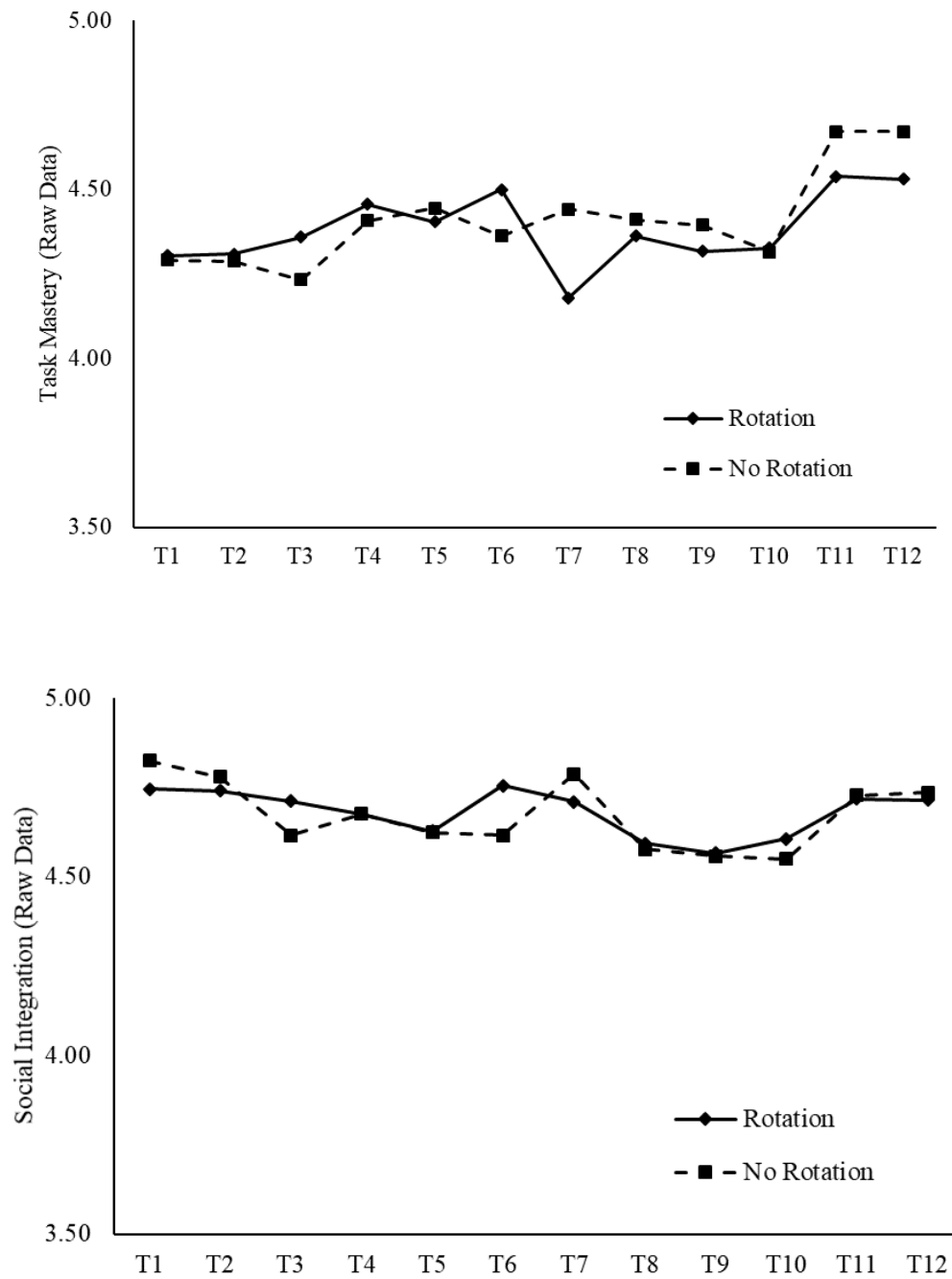


FIGURE 2.1: General Trajectory of Professional Identification from Time 1 to Time 10 Without Any Predictor (Study 2)

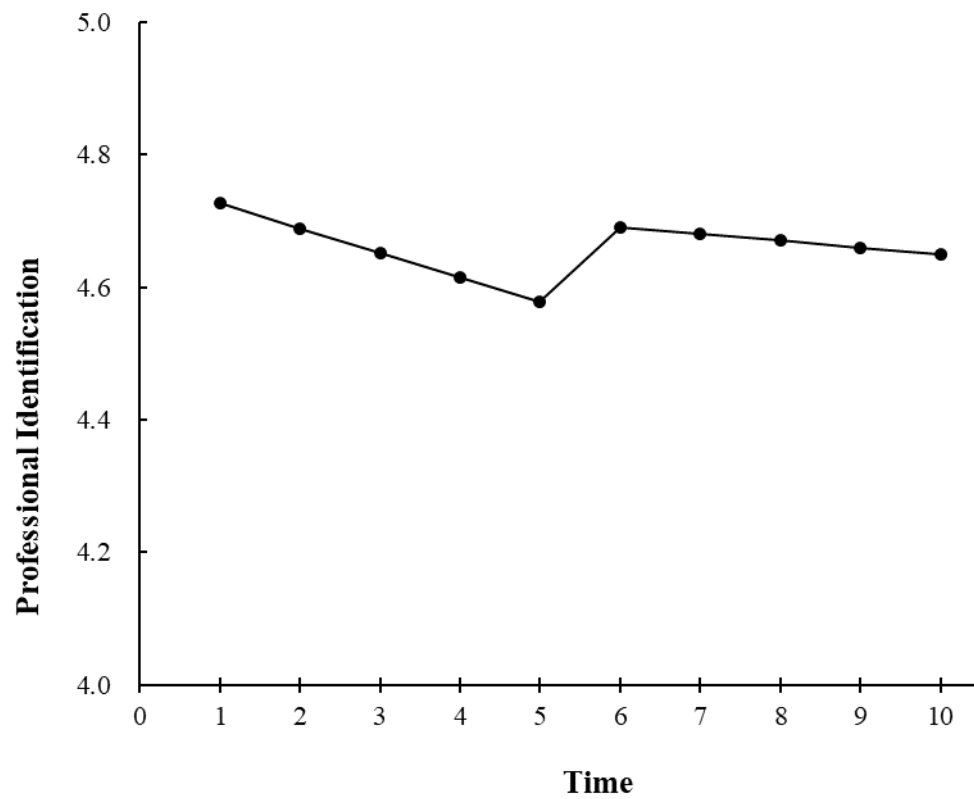


FIGURE 2.2a: Trajectory of Professional Identification as a Function of Sensegiving (Study 2)

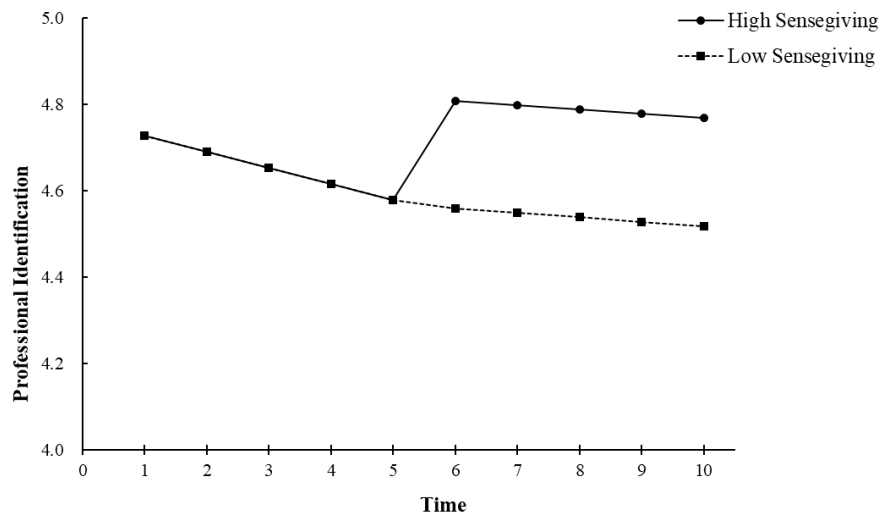


FIGURE 2.2b: Trajectory of Professional Identification as the Function of Moral Elevation (Study 2)

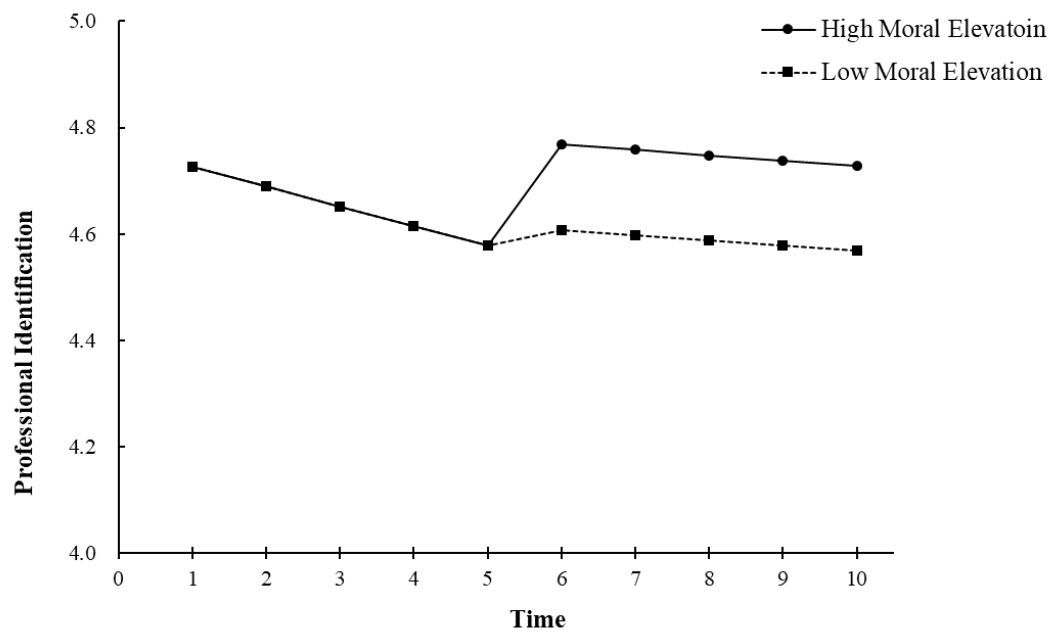


FIGURE A2.1a: General Trajectory of Turnover Intention from Time 1 to Time 10 (Study 2)

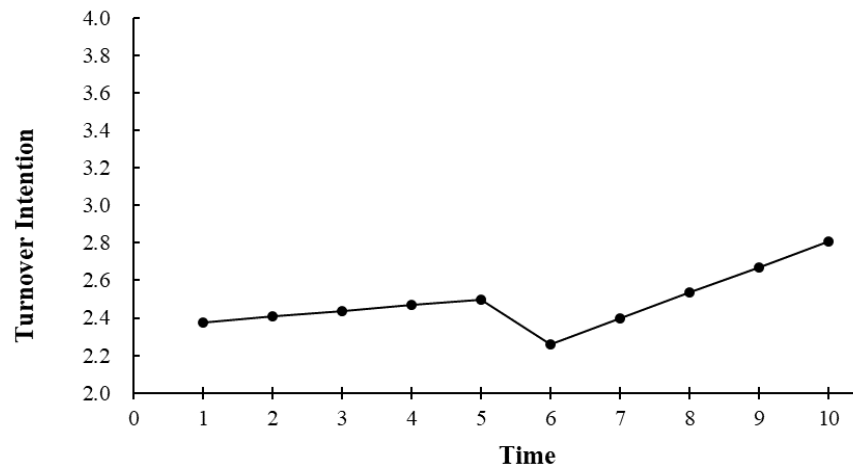
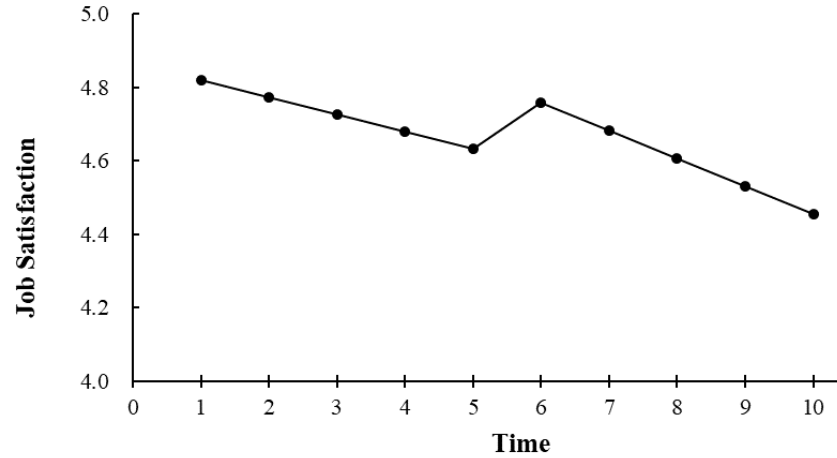


FIGURE A2.1b: General Trajectory of Job Satisfaction from Time 1 to Time 10 (Study 2)



REFERENCES

- Aguinis, H., & Glavas, A. (2017). On corporate social responsibility, sensemaking, and the search for meaningfulness through work. *Journal of Management*, 45(3), 1057-1086.
<https://doi.org/10.1177/0149206317691575>
- Algoe, S. B., & Haidt, J. (2009). Witnessing excellence in action: The 'other-praising' emotions of elevation, gratitude, and admiration. *Journal of Positive Psychology*, 4(2), 105-127.
<https://doi.org/10.1080/17439760802650519>
- Ali, S. S. (2020, May). Why some nurses have quit during the coronavirus pandemic. *NBC News*.
<https://www.nbcnews.com/news/us-news/why-some-nurses-have-quit-during-coronavirus-pandemic-n1201796>
- Allen, D. G. (2006). Do organizational socialization tactics influence newcomer embeddedness and turnover? *Journal of Management*, 32(2), 237-256. <https://doi.org/10.1177/0149206305280103>
- Allen, T. D., Eby, L. T., Chao, G. T., & Bauer, T. N. (2017). Taking stock of two relational aspects of organizational life: Tracing the history and shaping the future of socialization and mentoring research. *Journal of Applied Psychology*, 102(3), 324-337.
<https://www.ncbi.nlm.nih.gov/pubmed/28125264>
- Ancona, D. G., Okhuysen, G. A., & Perlow, L. A. (2001). Taking time to integrate temporal research. *Academy of Management Review*, 26(4), 512-529. <https://doi.org/10.5465/amr.2001.5393887>
- Anteby, M., Chan, C. K., & DiBenigno, J. (2016). Three lenses on occupations and professions in organizations: Becoming, doing, and relating. *The Academy of Management Annals*, 10(1), 183-244. <https://doi.org/10.1080/19416520.2016.1120962>
- Aquino, K., McFerran, B., & Laven, M. (2011). Moral identity and the experience of moral elevation in response to acts of uncommon goodness. *Journal of Personality and Social Psychology*, 100(4), 703-718. <https://doi.org/10.1037/a0022540>
- Armstrong-Stassen, M. (2003). Job transfer during organizational downsizing. *Group & Organization Management*, 28(3), 392-415. <https://doi.org/10.1177/1059601102250824>
- Ashford, S. J., & Black, J. S. (1996). Proactivity during organizational entry: The role of desire for control. *Journal of Applied Psychology*, 81(2), 199-214.
- Ashforth, B. E. (2001). *Role transitions in organizational life: An identity-based perspective*. Erlbaum.
- Ashforth, B. E. (2012). The role of time in socialization. In C. R. Wanberg (Ed.), *The oxford handbook of organizational socialization* (Vol. 161). Oxford University Press.
- Ashforth, B. E. (2020). Identity and identification during and after the pandemic: How might covid-19 change the research questions we ask? *Journal of Management Studies*, 57(8), 1763-1766.
<https://doi.org/10.1111/joms.12629>
- Ashforth, B. E., Harrison, S. H., & Corley, K. G. (2008). Identification in organizations: An examination of four fundamental questions. *Journal of Management*, 34(3), 325-374.
<https://doi.org/10.1177/0149206308316059>
- Ashforth, B. E., Harrison, S. H., & Sluss, D. M. (2014). Becoming: The interaction of socialization and identity in organizations over time. In A. J. Shipp & Y. Fried (Eds.), *Current issues in work and organizational psychology: Time and work*. Vol. 1. *How time impacts individuals* (pp. 11-39). Psychology Press.
- Ashforth, B. E., Harrison, S. H., & Sluss, D. M. (2018). Becoming: The interaction of socialization and identity in organizations over time. In C. Cooper (Ed.), *Current issues in work and organizational psychology* (pp. 316-339). Routledge.
- Ashforth, B. E., Joshi, M., Anand, V., & O'Leary-Kelly, A. M. (2013). Extending the expanded model of organizational identification to occupations. *Journal of Applied Social Psychology*, 43(12), 2426-2448. <https://doi.org/10.1111/jasp.12190>

- Ashforth, B. E., & Saks, A. M. (1995). Work-role transitions: A longitudinal examination of the nicholson model. *Journal of Occupational and Organizational Psychology*, 68(2), 157-175. <https://doi.org/https://doi.org/10.1111/j.2044-8325.1995.tb00579.x>
- Ashforth, B. E., & Saks, A. M. (1996). Socialization tactics: Longitudinal effects on newcomer adjustment. *Academy of Management Journal*, 39(1), 149-178. <https://doi.org/10.5465/256634>
- Ashforth, B. E., & Schinoff, B. S. (2016). Identity under construction: How individuals come to define themselves in organizations. *Annual Review of Organizational Psychology and Organizational Behavior*, 3(1), 111-137. <https://doi.org/10.1146/annurev-orgpsych-041015-062322>
- Ashforth, B. E., Sluss, D. M., & Harrison, D. A. (2007). Socialization in orgnizational contexts. In G. P. Hodgkinson & J. K. Ford (Eds.), *International review of industrial and organizational psychology*. Wiley.
- Ashforth, B. E., Sluss, D. M., & Saks, A. M. (2007). Socialization tactics, proactive behavior, and newcomer learning: Integrating socialization models. *Journal of Vocational Behavior*, 70(3), 447-462. <https://doi.org/10.1016/j.jvb.2007.02.001>
- Baard, S. K., Rench, T. A., & Kozlowski, S. W. J. (2014). Performance adaptation: A theoretical integration and review. *Journal of Management*, 40(1), 48-99. <https://doi.org/10.1177/0149206313488210>
- Bacharach, S. B., & Bamberger, P. A. (2007). 9/11 and new york city firefighters' post hoc unit support and control climates: A context theory of the consequences of involvement in traumatic work-related events. *Academy of Management Journal*, 50(4), 849-868. <https://doi.org/10.5465/amj.2007.26279180>
- Bauer, T. N., Bodner, T., Erdogan, B., Truxillo, D. M., & Tucker, J. S. (2007). Newcomer adjustment during organizational socialization: A meta-analytic review of antecedents, outcomes, and methods. *Journal of Applied Psychology*, 92(3), 707-721. <https://doi.org/https://doi.org/10.1037/0021-9010.92.3.707>
- Bauer, T. N., & Erdogan, B. (2014). Delineating and reviewing the role of newcomer capital in organizational socialization. *Annu. Rev. Organ. Psychol. Organ. Behav.*, 1(1), 439-457.
- Bauer, T. N., & Green, S. G. (1998). Testing the combined effects of newcomer information seeking and manager behavior on socialization. *Journal of Applied Psychology*, 83(1), 72-83. <https://doi.org/10.1037/0021-9010.83.1.72>
- Baumeister, R. F., Bratslavsky, E., Finkenauer, C., & Vohs, K. D. (2001). Bad is stronger than good. *Review of General Psychology*, 5(4), 323-370. <https://doi.org/10.1037/1089-2680.5.4.323>
- Bell, B. S., & Kozlowski, S. W. (2008). Active learning: Effects of core training design elements on self-regulatory processes, learning, and adaptability. *Journal of Applied Psychology*, 93(2), 296-316. <https://doi.org/10.1037/0021-9010.93.2.296>
- Bell, B. S., & Kozlowski, W. J. (2002). Goal orientation and ability: Interactive effects on self-efficacy, performance, and knowledge. *Journal of Applied Psychology*, 87(3), 497-505. <https://doi.org/10.1037/0021-9010.87.3.497>
- Bennett, B. (2003). Job rotation: Its role in promoting learning in organizations. *Development and Learning in Organizations*, 17(4), 7-9. <https://doi.org/0.1108/14777280310698386>
- Berlew, D. E., & Hall, D. T. (1966). The socialization of managers: Effects of expectations on performance. *Administrative Science Quarterly*, 207-223. <https://doi.org/10.2307/2391245>
- Bliese, P. D. (2000). Within-group agreement, non-independence, and reliability: Implications for data aggregation and analysis. In *Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions*. (pp. 349-381). Jossey-Bass.
- Bliese, P. D., Adler, A. B., & Flynn, P. (2016). Transition processes: A review and synthesis integrating methods and theory. *Annual Review of Organizational Psychology & Organizational Behavior*, 4(1), 263-286. <https://doi.org/10.1177/1094428116633502>
- Bliese, P. D., Kautz, J., & Lang, J. W. B. (2020). Handbook on the temporal dynamics of organizational behavior. In *Discontinuous growth models: Illustrations, recommendations, and an r function for*

- generating the design matrix. Edward Elgar Publishing.
<https://doi.org/https://doi.org/10.4337/9781788974387.00030>
- Bliese, P. D., & Lang, J. W. B. (2016). Understanding relative and absolute change in discontinuous growth models. *Organizational Research Methods*, 19(4), 562-592.
<https://doi.org/10.1177/1094428116633502>
- Bliese, P. D., & Ployhart, R. E. (2002). Growth modeling using random coefficient models: Model building, testing, and illustrations. *Organizational Research Methods*, 5(4), 362-387.
<https://doi.org/10.1177/109442802237116>
- Bluedorn, A. C., & Denhardt, R. B. (1988). Time and organizations. *Journal of Management*, 14(2), 299-320. <https://doi.org/10.1177/014920638801400209>
- Boswell, W. R., Boudreau, J. W., & Tichy, J. (2005). The relationship between employee job change and job satisfaction: The honeymoon-hangover effect. *Journal of Applied Psychology*, 90(5), 882-892. <https://doi.org/10.1037/0021-9010.90.5.882>
- Boswell, W. R., Shipp, A. J., Payne, S. C., & Culbertson, S. S. (2009). Changes in newcomer job satisfaction over time: Examining the pattern of honeymoons and hangovers. *Journal of Applied Psychology*, 94(4), 844-858. <https://doi.org/10.1037/a0014975>
- Bradt, G. B. (2012). Socializing socialization: Everything is connected—especially recruiting, hiring, and accelerating talent. In C. Wanberg (Ed.), *The oxford handbook of organizational socialization* (pp. 315-324). Oxford University Press.
- Brett, J. F., & VandeWalle, D. (1999). Goal orientation and goal content as predictors of performance in a training program. *Journal of Applied Psychology*, 84(6), 863-873. <https://doi.org/10.1037/0021-9010.84.6.863>
- Bullis, C., & Bach, B. W. (1989). Socialization turning points: An examination of change in organizational identification. *Western Journal of Speech Communication*, 53(3), 273-293.
<https://doi.org/10.1080/10570318909374307>
- Cable, D. M., & Parsons, C. K. (2001). Socialization tactics and person-organization fit. *Personnel Psychology*, 54(1), 1-23. <https://doi.org/10.1111/j.1744-6570.2001.tb00083.x>
- Campion, M. A., Cheraskin, L., & Stevens, M. J. (1994). Career-related antecedents and outcomes of job rotation. *Academy of Management Journal*, 37(6), 1518-1542. <https://doi.org/10.5465/256797>
- Caza, B. B., Vough, H., & Puranik, H. (2018). Identity work in organizations and occupations: Definitions, theories, and pathways forward. *Journal of Organizational Behavior*, 39(7), 889-910.
<https://doi.org/10.1002/job.2318>
- Chan, D. (1998). The conceptualization and analysis of change over time: An integrative approach incorporating longitudinal mean and covariance structures analysis (lmcs) and multiple indicator latent growth modeling (mlgm). *Organizational Research Methods*, 1(4), 421-483.
<https://doi.org/10.1177/109442819814004>
- Chan, D. (2000). Understanding adaptation to changes in the work environment: Integrating individual difference and learning perspectives. In G. R. Ferris (Ed.), *Research in personnel and human resources management* (Vol. 18, pp. 1-42). JAI Press.
- Chan, D. (2014). Emerging themes in adaptability research. In D. Chan (Ed.), *Individual adaptability to changes at work: New directions in research* (pp. 176-192). Routledge.
- Chan, D., & Schmitt, N. (2000). Interindividual differences in intraindividual changes in proactivity during organizational entry: A latent growth modeling approach to understanding newcomer adaptation. *Journal of Applied Psychology*, 85(2), 190-210. <https://doi.org/10.1037/0021-9010.85.2.190>
- Chao, G. T., O'Leary-Kelly, A. M., Wolf, S., Klein, H. J., & Gardner, P. D. (1994). Organizational socialization: Its content and consequences. *Journal of Applied Psychology*, 79(5), 730-743.
<https://doi.org/10.1037/0021-9010.79.5.730>
- Chen, G. (2005). Newcomer adaptation in teams: Multilevel antecedents and outcomes. *Academy of Management Journal*, 48(1), 101-116.

- Chen, G., & Firth, B. M. (2014). The motivational underpinnings of adaptability. In G. Chen (Ed.), *Individual adaptability to changes at work: New directions in research* (pp. 18-35). Routledge.
- Chen, G., & Klimoski, R. J. (2003). The impact of expectations on newcomer performance in teams as mediated by work characteristics, social exchanges, and empowerment. *Academy of Management Journal*, 46(5), 591-607. <https://doi.org/10.5465/30040651>
- Chen, G., Thomas, B., & Wallace, J. C. (2005). A multilevel examination of the relationships among training outcomes, mediating regulatory processes, and adaptive performance. *Journal of Applied Psychology*, 90(5), 827-841. <https://doi.org/10.1037/0021-9010.90.5.827>
- Chen, S. Y., Wu, W. C., Chang, C. S., & Lin, C. T. (2015). Job rotation and internal marketing for increased job satisfaction and organisational commitment in hospital nursing staff. *Journal of Nursing Management*, 23(3), 297-306.
- Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling: A Multidisciplinary Journal*, 9(2), 233-255. https://doi.org/10.1207/s15328007sem0902_5
- Chreim, S. (2002). Influencing organizational identification during major change: A communication-based perspective. *Human Relations*, 55(9), 1117-1137. <https://doi.org/10.1177/0018726702055009022>
- Chreim, S., Williams, B. E., & Hinings, C. R. (2007). Interlevel influences on the reconstruction of professional role identity. *Academy of Management Journal*, 50(6), 1515-1539. <https://doi.org/10.5465/amj.2007.28226248>
- Comper, M. L. C., Dennerlein, J. T., Evangelista, G. D. S., Rodrigues da Silva, P., & Padula, R. S. (2017). Effectiveness of job rotation for preventing work-related musculoskeletal diseases: A cluster randomised controlled trial. *Occupational and Environmental Medicine*, 74(8), 545-552. <https://doi.org/10.1136/oemed-2016-104077>
- Copeland, C. (2019). Trends in employee tenure, 1983–2018. *EBRI Issue Brief*, 474, 4-16.
- Dailey, S. L. (2016). I'm new...again: Reconceptualizing the socialization process through rotational programs. *Communication Studies*, 67(2), 183-208. <https://doi.org/10.1080/10510974.2016.1145130>
- De Pater, I. E., Van Vianen, A. E., Humphrey, R. H., Sleeth, R. G., Hartman, N. S., & Fischer, A. H. (2009). Individual task choice and the division of challenging tasks between men and women. *Group & Organization Management*, 34(5), 563-589. <https://doi.org/10.1177/1059601108331240>
- De Vos, A., & Freese, C. (2011). Sensemaking during organizational entry: Changes in newcomer information seeking and the relationship with psychological contract fulfilment. *Journal of Occupational and Organizational Psychology*, 84(2), 288-314. <https://doi.org/10.1111/j.2044-8325.2011.02024.x>
- Derue, D. S., & Wellman, N. (2009). Developing leaders via experience: The role of developmental challenge, learning orientation, and feedback availability. *Journal of Applied Psychology*, 94(4), 859-875. <https://doi.org/10.1037/a0015317>
- DeShon, R. P., & Gillespie, J. Z. (2005). A motivated action theory account of goal orientation. *Journal of Applied Psychology*, 90(6), 1096-1127. <https://doi.org/10.1037/0021-9010.90.6.1096>
- Dhanraj, D., & Parumasur, S. B. (2014). Perceptions of the impact of job rotation on employees, productivity, the organization and on job security. *Corporate Ownership & Control*, 11(4), 682-691. <https://doi.org/10.13106/jafeb.2022.vol9.no5.531>
- DiBenigno, J. (2022). How idealized professional identities can persist through client interactions. *Administrative Science Quarterly*, 67(3), 865-912. <https://doi.org/10.1177/00018392221098954>
- Dierdorff, E. C. (2019). Toward reviving an occupation with occupations. *Annual Review of Organizational Psychology and Organizational Behavior*, 6(1), 397-419. <https://doi.org/10.1146/annurev-orgpsych-012218-015019>
- Dong, E., Du, H., & Gardner, L. (2020). An interactive web-based dashboard to track covid-19 in real time. *The Lancet Infectious Diseases*, 20(5), 533-534. [https://doi.org/10.1016/s1473-3099\(20\)30120-1](https://doi.org/10.1016/s1473-3099(20)30120-1)

- Dweck, C. S. (1986). Motivational processes affecting learning. *American Psychologist*, 41(10), 1040-1048. <https://doi.org/10.1037/0003-066X.41.10.1040>
- Ellis, A. M., Bauer, T., & Erdogan, B. (2015). New employee organizational socialization: Adjusting to new organizations, insiders, and roles. In J. Grusec & P. Hastings (Eds.), *Handbook of socialization: Theory and research* (pp. 301-324). Guilford.
- Eriksson, T., & Ortega, J. (2006). The adoption of job rotation: Testing the theories. *ILR Review*, 59(4), 653-666.
- Fang, R., Duffy, M. K., & Shaw, J. D. (2011). The organizational socialization process: Review and development of a social capital model. *Journal of Management*, 37(1), 127-152. <https://doi.org/10.1177/0149206310384630>
- Feldman, D. C. (1981). The multiple socialization of organization members. *Academy of Management Review*, 6(2), 309-318.
- Fine, G. A. (1996). Justifying work: Occupational rhetorics as resources in restaurant kitchens. *Administrative Science Quarterly*, 41(1), 90-115. <https://doi.org/10.2307/2393987>
- Firth, B. M., Chen, G., Kirkman, B. L., & Kim, K. (2014). Newcomers abroad: Expatriate adaptation during early phases of international assignments. *Academy of Management Journal*, 57(1), 280-300. <https://doi.org/10.5465/amj.2011.0574>
- Fisher, C. D. (1986). Organizational socialization: An integrative review. In G. R. Ferris & K. M. Rowland (Eds.), *Research in personnel and human resources management* (Vol. 4, pp. 101-145). JAI Press.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of marketing research*, 18(1), 39-50. <https://doi.org/10.1177/002224378101800104>
- Frase-Blunt, M. (2001). Ready, set rotate! *HRMAGAZINE*, 46(10), 46-53. <http://ezproxy.lib.polyu.edu.hk/login?url=https://www.proquest.com/trade-journals/ready-set-rotate/docview/205028482/se-2?accountid=16210>
- http://julac.hosted.exlibrisgroup.com/openurl/HKPU_ALMA/HKPU_SERVICES_PAGE?sid=proquest&auinit=Martha&aulast=Frase-Blunt&atitle=Ready%2C+set+rotate%21&stitle=HRMagazine&bttitle=&id=doi:&title=Ready%2C+set+rotate%21&volume=46&issue=10&date=2001&spage=46&isbn=&issn=10473149&genre=article&
- George, J. M., & Jones, G. R. (2000). The role of time in theory and theory building. *Journal of Management*, 26(4), 657-684. [https://doi.org/10.1016/S0149-2063\(00\)00051-9](https://doi.org/10.1016/S0149-2063(00)00051-9)
- Gioia, D. A., & Chittipeddi, K. (1991). Sensemaking and sensegiving in strategic change initiation. *Strategic Management Journal*, 12(6), 433-448. <https://doi.org/10.1002/smj.4250120604>
- Grant, A. M., Parker, S., & Collins, C. (2009). Getting credit for proactive behavior: Supervisor reactions depend on what you value and how you feel. *Personnel Psychology*, 62(1), 31-55.
- Gundry, L. K. (1993). Fitting into technical organizations: The socialization of newcomer engineers. *IEEE Transactions on engineering management*, 40(4), 335-345. <https://doi.org/10.1109/17.257726>
- Gundry, L. K., & Rousseau, D. M. (1994). Critical incidents in communicating culture to newcomers: The meaning is the message. *Human Relations*, 47(9), 1063. <http://ezproxy.lib.polyu.edu.hk/login?url=https://www.proquest.com/scholarly-journals/critical-incidents-communicating-culture/docview/231457708/se-2?accountid=16210>
- https://julac-hkpu.primo.exlibrisgroup.com/openurl/852JULAC_HKPU/852JULAC_HKPU:HKPU?sid=proquest&auinit=Lisa&aulast=Gundry&atitle=Critical+incidents+in+communicating+culture+to+newcomers%3A+The+meaning+is+the+message&stitle=Human+Relations&bttitle=&id=doi:&title=Cr

- [itital+incidents+in+communicating+culture+to+newcomers%3A+The+meaning+is+the+message&volume=47&issue=9&date=1994&spage=1063&isbn=&genre=article&](#)
- Haidt, J. (2003). The moral emotions. In R. J. Davidson, K. R. Scherer, & H. H. Goldsmith (Eds.), *Handbook of affective sciences* (pp. 852-870). Oxford University Press.
- Hällgren, M., Rouleau, L., & de Rond, M. (2018). A matter of life or death: How extreme context research matters for management and organization studies. *Academy of Management Annals*, 12(1), 111-153. <https://doi.org/10.5465/annals.2016.0017>
- Hekman, D. R., Bigley, G. A., Steensma, H. K., & Hereford, J. F. (2009). Combined effects of organizational and professional identification on the reciprocity dynamic for professional employees. *Academy of Management Journal*, 52(3), 506-526. <https://doi.org/10.5465/amj.2009.41330897>
- Hennekam, S., Ladge, J., & Shymko, Y. (2020). From zero to hero: An exploratory study examining sudden hero status among nonphysician health care workers during the covid-19 pandemic. *Journal of Applied Psychology*, 105(10), 1088-1100. <https://doi.org/10.1037/apl0000832>
- Ho, W. H., Chang, C. S., Shih, Y. L., & Liang, R. D. (2009). Effects of job rotation and role stress among nurses on job satisfaction and organizational commitment. *BMC Health Services Research*, 9, 8. <https://doi.org/10.1186/1472-6963-9-8>
- Huang, H. J. (1999). Job rotation from the employees point of view. *Research and Practice in Human Resource Management*, 7(1), 75-85.
- Huang, J. L., Shoss, M. K., & Jundt, D. K. (2018). Adaptive performance. In D. S. Ones, N. Anderson, C. Viswesvaran, & H. K. Sinangil (Eds.), *The sage handbook of industrial, work and organizational psychology: Personnel psychology and employee performance* (2nd Edition ed.). SAGE Publications Ltd.
- Ibarra, H. (1999). Provisional selves: Experimenting with image and identity in professional adaptation. *Administrative Science Quarterly*, 44(4), 764-791. <https://doi.org/10.2307/2667055>
- Johns, G. (2018). Advances in the treatment of context in organizational research. *Annual Review of Organizational Psychology and Organizational Behavior*, 5(1), 21-46. <https://doi.org/10.1146/annurev-orgpsych-032117-104406>
- Johnson, M. D., Morgeson, F. P., Ilgen, D. R., Meyer, C. J., & Lloyd, J. W. (2006). Multiple professional identities: Examining differences in identification across work-related targets. *Journal of Applied Psychology*, 91(2), 498-506. <https://doi.org/10.1037/0021-9010.91.2.498>
- Jokisaari, M., & Nurmi, J.-E. (2009). Change in newcomers' supervisor support and socialization outcomes after organizational entry. *Academy of Management Journal*, 52(3), 527-544. <https://doi.org/10.5465/amj.2009.41330971>
- Jones, G. R. (1986). Socialization tactics, self-efficacy, and newcomers' adjustments to organizations. *Academy of Management Journal*, 29, 262-279.
- Jorgensen, M., Davis, K., Kotowski, S., Aedla, P., & Dunning, K. (2005). Characteristics of job rotation in the midwest us manufacturing sector. *Ergonomics*, 48(15), 1721-1733. <https://doi.org/10.1080/00140130500247545>
- Jundt, D. K., Shoss, M. K., & Huang, J. L. (2015). Individual adaptive performance in organizations: A review. *Journal of Organizational Behavior*, 36(S1), S53-S71. <https://doi.org/10.1002/job.1955>
- Kammeyer-Mueller, J. D., & Wanberg, C. R. (2003). Unwrapping the organizational entry process: Disentangling multiple antecedents and their pathways to adjustment. *Journal of Applied Psychology*, 88(5), 779-794. <https://doi.org/10.1037/0021-9010.88.5.779>
- Kammeyer-Mueller, J. D., Wanberg, C. R., Rubenstein, A., & Song, Z. (2013). Support, undermining, and newcomer socialization: Fitting in during the first 90 days. *Academy of Management Journal*, 56(4), 1104-1124. <https://doi.org/10.5465/amj.2010.0791>
- Kampkötter, P., Harbring, C., & Sliwka, D. (2018). Job rotation and employee performance – evidence from a longitudinal study in the financial services industry. *The International Journal of Human Resource Management*, 29(10), 1709-1735. <https://doi.org/10.1080/09585192.2016.1209227>

- Katz, R. (1980). Time and work: Toward an integrative perspective. In B. M. Staw & L. L. Cummings (Eds.), *Research in organizational behavior* (Vol. 2, pp. 81-127). JAI Press.
- Khan, M. M., Rehman, A. U., Ahmed, T., Yusoff, R. M., Rasli, A. M., & Khan, F. (2014). Job rotation, job performance, organizational commitment: An empirical study on bank employees. *Journal of Management Info*, 1(3), 10-13. <https://doi.org/10.31580/jmi.v3i1.8>
- Kim, T.-Y., Cable, D. M., & Kim, S.-P. (2005). Socialization tactics, employee proactivity, and person-organization fit. *Journal of Applied Psychology*, 90(2), 232.
- Klein, H. J., & Polin, B. (2012). *Are organizations on board with best practices onboarding?* Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780199763672.013.0014>
- Klein, H. J., Polin, B., & Leigh Sutton, K. (2015). Specific onboarding practices for the socialization of new employees. *International Journal of Selection and Assessment*, 23(3), 263-283. <https://doi.org/10.1111/ijsa.12113>
- Lang, J. W., & Bliese, P. D. (2009). General mental ability and two types of adaptation to unforeseen change: Applying discontinuous growth models to the task-change paradigm. *Journal of Applied Psychology*, 94(2), 411-428. <https://doi.org/10.1037/a0013803>
- Lee, K., Carswell, J. J., & Allen, N. J. (2000). A meta-analytic review of occupational commitment: Relations with person-and work-related variables. *Journal of Applied Psychology*, 85(5), 799-811. <https://doi.org/10.1037/0021-9010.85.5.799>
- Leider, P. C., Boschman, J. S., Frings-Dresen, M. H., & van der Molen, H. F. (2015). Effects of job rotation on musculoskeletal complaints and related work exposures: A systematic literature review. *Ergonomics*, 58(1), 18-32. <https://doi.org/10.1080/00140139.2014.961566>
- LePine, J. A. (2005). Adaptation of teams in response to unforeseen change: Effects of goal difficulty and team composition in terms of cognitive ability and goal orientation. *Journal of Applied Psychology*, 90(6), 1153-1167.
- Lindsley, D. H., Brass, D. J., & Thomas, J. B. (1995). Efficacy-performing spirals: A multilevel perspective. *Academy of Management Review*, 20(3), 645-678. <https://doi.org/10.5465/amr.1995.9508080333>
- Liu, D., Chen, Y., & Li, N. (2021). Tackling the negative impact of covid-19 on work engagement and taking charge: A multi-study investigation of frontline health workers. *Journal of Applied Psychology*, 106(2), 185-198. <https://doi.org/10.1037/apl0000866>
- Liu, S., Bamberger, P., Wang, M., Nahum-Shani, I., Larimer, M., & Bacharach, S. B. (2022). Behavior change versus stability during the college-to-work transition: Life course and the “stickiness” of alcohol misuse at career entry. *Personnel Psychology*. <https://doi.org/10.1111/peps.12519>
- Lord, R. G., Diefendorff, J. M., Schmidt, A. M., & Hall, R. J. (2010). Self-regulation at work. *Annual Review of Psychology*, 61(1), 543-568.
- Louis, M. R. (1980). Surprise and sense making: What newcomers experience in entering unfamiliar organizational settings. *Administrative Science Quarterly*, 25(2), 226-251. <https://doi.org/10.2307/2392453>
- Maia, L. G., & Solinger, O. N. (2016). Which factors make the difference for explaining growth in newcomer organizational commitment? A latent growth modeling approach. *Journal of Organizational Behavior*, 37(4), 537-557. <https://doi.org/10.1002/job.2096>
- Maitlis, S., & Christianson, M. (2014). Sensemaking in organizations: Taking stock and moving forward. *The Academy of Management Annals*, 8(1), 57-125. <https://doi.org/10.1080/19416520.2014.873177>
- Mansfield, R. (1972). The initiation of graduates in industry: The resolution of identity-stress as a determinant of job satisfaction in the early months at work. *Human Relations*, 25(1), 77-86. <https://doi.org/10.1177/001872677202500107>
- Martin, J., & Schmidt, C. (2010). How to keep your top talent. *Harvard Business Review*, 88(5), 54-61.

- Megheirkouni, M. (2016). Leadership development methods and activities: Content, purposes, and implementation. *Journal of Management Development*, 35(2), 237-260. <https://doi.org/10.1108/jmd-09-2015-0125>
- Miscenko, D., & Day, D. V. (2016). Identity and identification at work. *Organizational Psychology Review*, 6(3), 215-247. <https://doi.org/10.1177/2041386615584009>
- Morgeson, F. P., & Humphrey, S. E. (2006). The work design questionnaire (wdq): Developing and validating a comprehensive measure for assessing job design and the nature of work. *Journal of Applied Psychology*, 91(6), 1321-1339. <https://doi.org/10.1037/0021-9010.91.6.1321>
- Morgeson, F. P., Mitchell, T. R., & Liu, D. (2015). Event system theory: An event-oriented approach to the organizational sciences. *Academy of Management Review*, 40(4), 515-537. <https://doi.org/10.5465/amr.2012.0099>
- Morrison, E. W. (1993a). Longitudinal study of the effects of information seeking on newcomer socialization. *Journal of Applied Psychology*, 78(2), 173. <https://doi.org/10.1037/0021-9010.78.2.173>
- Morrison, E. W. (1993b). Newcomer information seeking: Exploring types, modes, sources, and outcomes. *Academy of Management Journal*, 36, 557-589. <https://doi.org/10.5465/256592>
- Motowidlo, S. J., Packard, J. S., & Manning, M. R. (1986). Occupational stress: Its causes and consequences for job performance. *Journal of Applied Psychology*, 71(4), 618-629. <https://doi.org/10.1037/0021-9010.71.4.618>
- Moyle, P., & Parkes, K. (1999). The effects of transition stress: A relocation study. *Journal of Organizational Behavior*, 20(5), 625-646. [https://doi.org/https://doi.org/10.1002/\(SICI\)1099-1379\(199909\)20:5<625::AID-JOB898>3.0.CO;2-7](https://doi.org/https://doi.org/10.1002/(SICI)1099-1379(199909)20:5<625::AID-JOB898>3.0.CO;2-7)
- National Association of Colleges and Employers. (2017). *Nace's 2016 recruiting benchmarks survey*. <https://www.nacweb.org/talent-acquisition/onboarding/rotational-programs-yield-higher-retention-rates/>
- Ng, T. W. H., Sorensen, K. L., Eby, L. T., & Feldman, D. C. (2007). Determinants of job mobility: A theoretical integration and extension. *Journal of Occupational and Organizational Psychology*, 80(3), 363-386. <https://doi.org/10.1348/096317906x130582>
- Niessen, C., & Jimmieson, N. L. (2016). Threat of resource loss: The role of self-regulation in adaptive task performance. *Journal of Applied Psychology*, 101(3), 450-462. <https://doi.org/10.1037/apl0000049>
- Niessen, C., & Lang, J. W. B. (2021). Cognitive control strategies and adaptive performance in a complex work task. *Journal of Applied Psychology*, 106(10), 1586-1599. <https://doi.org/10.1037/apl0000830>
- Ostroff, C., & Clark, M. A. (2001). Maintaining an internal market: Antecedents of willingness to change jobs. *Journal of Vocational Behavior*, 59(3), 425-453. <https://doi.org/10.1006/jvbe.2001.1801>
- Ostroff, C., & Kozlowski, S. W. (1992). Organizational socialization as a learning process: The role of information acquisition. *Personnel Psychology*, 45(4), 849-874.
- Padula, R. S., Comper, M. L. C., Sparer, E. H., & Dennerlein, J. T. (2017). Job rotation designed to prevent musculoskeletal disorders and control risk in manufacturing industries: A systematic review. *Applied Ergonomics*, 58, 386-397. <https://doi.org/10.1016/j.apergo.2016.07.018>
- Pasila, K., Elo, S., & Kaariainen, M. (2017). Newly graduated nurses' orientation experiences: A systematic review of qualitative studies. *International Journal of Nursing Studies*, 71, 17-27. <https://doi.org/10.1016/j.ijnurstu.2017.02.021>
- Peeples, L. (2020). Brutality and racial bias: What the data say. *Nature*, 583(7814), 22-24. <https://doi.org/10.1038/d41586-020-01846-z>
- Pratt, M. G. (2000). The good, the bad, and the ambivalent: Managing identification among amway distributors. *Administrative Science Quarterly*, 45(3), 456-493. <https://doi.org/10.2307/2667106>
- Pratt, M. G., Rockmann, K. W., & Kaufmann, J. B. (2006). Constructing professional identity: The role of work and identity learning cycles in the customization of identity among medical residents. *Academy of Management Journal*, 49(2), 235-262. <https://doi.org/10.5465/amj.2006.20786060>

- Preenen, P. T. Y., Dorenbosch, L., Plantinga, E., & Dhondt, S. (2016). The influence of task challenge on skill utilization, affective wellbeing and intrapreneurial behaviour. *Economic and Industrial Democracy*, 40(4), 954-975. <https://doi.org/10.1177/0143831x16677367>
- Qureshi, I., & Fang, Y. (2010). Socialization in open source software projects: A growth mixture modeling approach. *Organizational Research Methods*, 14(1), 208-238. <https://doi.org/10.1177/1094428110375002>
- Rizzo, J. R., House, R. J., & Lirtzman, S. I. (1970). Role conflict and ambiguity in complex organizations. *Administrative Science Quarterly*, 150-163. <https://doi.org/10.2307/2391486>
- Rollag, K. (2004). The impact of relative tenure on newcomer socialization dynamics. *Journal of Organizational Behavior*, 25(7), 853-872. <https://doi.org/10.1002/job.280>
- Rouleau, L. (2005). Micro-practices of strategic sensemaking and sensegiving: How middle managers interpret and sell change every day. *Journal of Management Studies*, 42(7), 1413-1441.
- Saks, A. M., & Ashforth, B. E. (1997a). A longitudinal investigation of the relationships between job information sources, applicant perceptions of fit, and work outcomes. *Personnel Psychology*, 50(2), 395-426. <https://doi.org/https://doi.org/10.1111/j.1744-6570.1997.tb00913.x>
- Saks, A. M., & Ashforth, B. E. (1997b). Socialization tactics and newcomer information acquisition. *International Journal of Selection and Assessment*, 5(1), 48-61. <https://doi.org/10.1111/1468-2389.00044>
- Saks, A. M., Uggerslev, K. L., & Fassina, N. E. (2007). Socialization tactics and newcomer adjustment: A meta-analytic review and test of a model. *Journal of Vocational Behavior*, 70(3), 413-446. <https://doi.org/10.1016/j.jvb.2006.12.004>
- Schaubroeck, J., Ganster, D. C., Sime, W. E., & Ditman, D. (1993). A field experiment testing supervisory role clarification. *Personnel Psychology*, 46(1), 1-25. <https://doi.org/https://doi.org/10.1111/j.1744-6570.1993.tb00865.x>
- Seibert, S. E., Crant, J. M., & Kraimer, M. L. (1999). Proactive personality and career success. *Journal of Applied Psychology*, 84(3), 416-427.
- Shipp, A. J., & Jansen, K. J. (2021). The “other” time: A review of the subjective experience of time in organizations. *Academy of Management Annals*, 15(1), 299-334. <https://doi.org/10.5465/annals.2018.0142>
- Skorikov, V. B., & Vondracek, F. W. (2011). Occupational identity. In S. J. Schwartz, K. Luyckx, & V. L. Vignoles (Eds.), *Handbook of identity theory and research* (pp. 693-714). Springer New York. https://doi.org/10.1007/978-1-4419-7988-9_29
- Solinger, O. N., Olffen, W. V., Roe, R. A., & Hofmans, J. (2013). On becoming uncommitted: A taxonomy and test of newcomer onboarding scenarios. *Organization Science*, 24(6), 1640-1661. <https://doi.org/10.1287/orsc.1120.0818>
- Song, Y., Liu, Y., Shi, J., & Wang, M. (2017). Use of proactive socialization tactics and socialization outcomes: A latent growth modeling approach to understanding newcomer socialization process. *Academy of Management Discoveries*, 3(1), 42-63. <https://doi.org/10.5465/amd.2014.0142>
- Sun, N., Wei, L., Shi, S., Jiao, D., Song, R., Ma, L., Wang, H., Wang, C., Wang, Z., You, Y., Liu, S., & Wang, H. (2020). A qualitative study on the psychological experience of caregivers of covid-19 patients. *American Journal of Infection Control*, 48(6), 592-598. <https://doi.org/10.1016/j.ajic.2020.03.018>
- Taylor, M. S. (1981). The motivational effects of task challenge: A laboratory investigation. *Organizational Behavior and Human Performance*, 27(2), 255-278. [https://doi.org/10.1016/0030-5073\(81\)90049-0](https://doi.org/10.1016/0030-5073(81)90049-0)
- van Dick, R., Wagner, U., Stellmacher, J., & Christ, O. (2005). Category salience and organizational identification. *Journal of Occupational and Organizational Psychology*, 78(2), 273-285. <https://doi.org/10.1348/096317905x25779>
- Van Knippenberg, D., Van Knippenberg, B., Monden, L., & de Lima, F. (2002). Organizational identification after a merger: A social identity perspective. *British Journal of Social Psychology*, 41(2), 233-252. <https://doi.org/10.1348/014466602760060228>

- Van Maanen, J., & Schein, E. H. (1979). Toward a theory of organizational socialization. *Research in Organizational Behavior*, 1, 209-264.
- Van Vianen, A. E., Pater, I. E. D., & Preenen, P. T. (2008). Career management: Taking control of the quality of work experiences. In J. A. Athanasou & R. Van Esbroeck (Eds.), *International handbook of career guidance* (pp. 283-301). Springer Science and Business Media.
- van Zoonen, W., Rice, R. E., & Ter Hoeven, C. L. (2022). Sensemaking by employees in essential versus non-essential professions during the covid-19 crisis: A comparison of effects of change communication and disruption cues on mental health, through interpretations of identity threats and work meaningfulness. *Management Community Quarterly*, 36(2), 318-349. <https://doi.org/10.1177/08933189221087633>
- Vandenbergh, C., Panaccio, A., Bentein, K., Mignonac, K., & Roussel, P. (2011). Assessing longitudinal change of and dynamic relationships among role stressors, job attitudes, turnover intention, and well-being in neophyte newcomers. *Journal of Organizational Behavior*, 32(4), 652-671. <https://doi.org/10.1002/job.732>
- VandeWalle, D. (1997). Development and validation of a work domain goal orientation instrument. *Educational and Psychological Measurement*, 57(6), 995-1015. <https://doi.org/10.1177/0013164497057006009>
- VandeWalle, D., Cron, W. L., & Slocum, J. W., Jr. (2001). The role of goal orientation following performance feedback. *Journal of Applied Psychology*, 86(4), 629-640. <https://doi.org/10.1037/0021-9010.86.4.629>
- Verbruggen, M., De Cooman, R., & Vansteenkiste, S. (2015). When and why are internal job transitions successful? Transition challenges, hindrances, and resources influencing motivation and retention through basic needs satisfaction. *Group & Organization Management*, 40(6), 744-775. <https://doi.org/10.1177/1059601115595935>
- Vianello, M., Galliani, E. M., & Haidt, J. (2010). Elevation at work: The effects of leaders' moral excellence. *The Journal of Positive Psychology*, 5(5), 390-411. <https://doi.org/10.1080/17439760.2010.516764>
- Vignoles, V. L., Regalia, C., Manzi, C., Gollidge, J., & Scabini, E. (2006). Beyond self-esteem: Influence of multiple motives on identity construction. *Journal of Personality and Social Psychology*, 90(2), 308-333. <https://doi.org/10.1037/0022-3514.90.2.308>
- Vinokur, A. D., Price, R. H., & Caplan, R. D. (1996). Hard times and hurtful partners: How financial strain affects depression and relationship satisfaction of unemployed persons and their spouses. *Journal of Personality and Social Psychology*, 71(1), 166-179.
- Vinokur, A. D., & Van Ryn, M. (1993). Social support and undermining in close relationships: Their independent effects on the mental health of unemployed persons. *Journal of Personality and Social Psychology*, 65(2), 350-359. <https://doi.org/10.1037/0022-3514.65.2.350>
- Wanberg, C. R. (2012). Facilitating organizational socialization: An introduction. In C. R. Wanberg (Ed.), *The oxford handbook of organizational socialization*. Oxford University Press.
- Wanberg, C. R., & Kammeyer-Mueller, J. (2008). A self-regulatory perspective on navigating career transitions. In G. C. R. Kanfer & R. D. Pritchard (Eds.), *Work motivation: Past, present, and future* (pp. 433-469). : Routledge.
- Wanberg, C. R., & Kammeyer-Mueller, J. D. (2000). Predictors and outcomes of proactivity in the socialization process. *Journal of Applied Psychology*, 85(3), 373-385.
- Wang, M. O., Zhan, Y., McCune, E., & Truxillo, D. (2011). Understanding newcomers' adaptability and work-related outcomes: Testing the mediating roles of perceived p-e fit variables. *Personnel Psychology*, 64(1), 163-189.
- Weick, K. E. (1988). Enacted sensemaking in crisis situations. *Journal of Management Studies*, 25(4), 305-317.
- Xu, R. (2003). Measuring explained variation in linear mixed effects models. *Statistics in Medicine*, 22(22), 3527-3541. <https://doi.org/10.1002/sim.1572>

- Zhang, Y., Wu, J., Fang, Z., Zhang, Y., & Wong, F. K. (2017). Newly graduated nurses' intention to leave in their first year of practice in shanghai: A longitudinal study. *Nursing Outlook*, 65(2), 202-211. <https://doi.org/10.1016/j.outlook.2016.10.007>
- Zhou, J., Li, N., & Chi, W. (2021). Getting ahead or getting along? How motivational orientations forge newcomers' cohort network structures, task assistance, and turnover. *Journal of Organizational Behavior*, 43(3), 410-429. <https://doi.org/10.1002/job.2584>
- Zhou, L., Park, J., Kammeyer-Mueller, J. D., Shah, P. P., & Campbell, E. M. (2021). Rookies connected: Interpersonal relationships among newcomers, newcomer adjustment processes, and socialization outcomes. *Journal of Applied Psychology*. <https://doi.org/10.1037/apl0000894>
- Zhu, J., Frese, M., & Li, W. (2014). Proactivity and adaptability. In G. Chen (Ed.), *Individual adaptability to changes at work: New directions in research* (pp. 36-51). Routledge.
- Zhu, J., Tatachari, S. R., & Chattopadhyay, P. (2017). Newcomer identification: Trends, antecedents and consequences. *Academy of Management Journal*, 60(3), 855-879. <https://doi.org/10.5465/amj.2015.0466>
- Zhu, J., Wanberg, C. R., Harrison, D. A., & Diehn, E. W. (2016). Ups and downs of the expatriate experience? Understanding work adjustment trajectories and career outcomes. *Journal of Applied Psychology*, 101(4), 549-568. <https://doi.org/10.1037/apl0000073>
- Zhu, Y., Chen, T., Wang, J., Wang, M., Johnson, R. E., & Jin, Y. (2020). How critical activities within covid-19 intensive care units increase nurses' daily occupational calling. *Journal of Applied Psychology*, 106(1), 4-14. <https://doi.org/10.1037/apl0000853>