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Emotion regulation in the workplace: Enhancing forgiveness skill
through expressive writing and reappraisal

Dissertation presented to Universidade Católica
Portuguesa to obtain a Master's Degree in Psychology in
Business and Economics

by Alessa Löwe

Faculty of Human Sciences

September 2023

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Under the supervision of
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Abstract

This research aims to investigate the potential of an emotion regulation-based intervention in fostering forgiveness skill in organizational settings. Drawing upon frameworks of expressive writing and reappraisal techniques, this study goes beyond considering forgiveness as a trait or as a state, to also view it as a skill that can develop over time. Participants' baseline ability to forgive, encompassing traits such as forgiveness, self-control, and forgiveness self-efficacy, was measured and held against the post-intervention outcome. This study consisted of three writing sessions over five days and a follow-up after 18 days. Participants were randomly assigned to one of three conditions: control, forgiveness knowledge + skill training, and forgiveness skill training only. Results indicated a non-linear progression in forgiveness over time. Day 1 indicated the highest forgiveness outcome, which sharply declined on day 2 and somewhat rebounded on day 3. On the follow-up day, the outcomes differed across conditions but did not recover fully to the initial levels. Trait forgivingness and forgiveness self-efficacy played a significant role in the forgiveness outcomes. The study challenges traditional perceptions and analyzes forgiveness as a skill, influenced by traits, emotion regulation strategies and external factors, creating a foundation for future studies in this domain.

Keywords: Forgiveness, emotion-regulation, expressive writing, reappraisal, interpersonal transgressions at work, trait forgivingness, trait self-control, self-efficacy, intervention

Resumo

Esta investigação tem como objetivo investigar o potencial de uma intervenção baseada na regulação emocional para promover a capacidade de perdoar em contextos organizacionais. Com base em molduras teóricas de escrita expressiva e técnicas de reavaliação, este estudo avança a conceptualização do perdão para além dos entendimentos tradicionais focados em traço ou estado, para apresentar uma nova conceptualização que vê o perdão como uma competência que se pode desenvolver ao longo do tempo. A capacidade de base dos participantes para perdoar, abrangendo características como o perdão-traço, o autocontrolo e a auto-eficácia em perdoar, foi medida e comparada com o resultado pós-intervenção. Este estudo consistiu em três sessões de escrita expressiva ao longo de cinco dias e um follow-up após 18 dias. Os participantes foram selecionados aleatoriamente para uma de três condições: controlo, conhecimento do perdão + treino de competências do perdão, e treino de competências do perdão. Os resultados indicaram uma progressão não linear do perdão ao longo do tempo. O primeiro dia indicou o resultado mais elevado de perdão, que diminuiu acentuadamente no segundo dia e recuperou ligeiramente no terceiro dia. No follow-up, os resultados diferiram entre as condições, mas não recuperaram totalmente para os níveis iniciais. A capacidade de perdoar-traço e a auto-eficácia em perdoar desempenharam um papel significativo nos resultados do perdão. O estudo desafia as perceções tradicionais e analisa o perdão como uma competência, influenciada por traços, estratégias de regulação da emoção e fatores externos, criando uma base para estudos futuros neste domínio.

Palavras-chave: Perdão, regulação da emoção, escrita expressiva, reavaliação, transgressões interpessoais no trabalho, traço de perdão, autocontrolo, auto-eficácia do perdão

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Introduction

Extant research has demonstrated the importance of individuals' forgiveness, including its beneficial effects on a variety of psychological, physical, and relational outcomes (e.g., Riek & Mania, 2012). Within this literature, forgiveness has most often been studied either as a trait (i.e., trait forgivingness, when individuals show cross-situational and cross-time consistency in forgiving; Worthington et al., 2015), or as a response to a specific offense (i.e., state forgiveness, traditionally defined as a complex response to an interpersonal offense involving the replacement of negative thoughts, emotions, motivations, and behaviors with prosocial thoughts, emotions, motivations, and behaviors towards the offender; Worthington et al., 2015).

Recent research has further conceptualized forgiveness as emotion regulation that occurs in the context of an interpersonal transgression, decreasing negative emotions and/or increasing positive emotions towards a transgressor. According to this conceptualization, forgiveness involves a process over time where emotion regulation strategies are employed to change from current emotions into desired emotions felt towards a transgressor (Brady et al., 2023). Although forgiveness has been studied as a process by many scholars, components influencing the process and moderating the outcome require further investigation (McElroy-Hetzl et al., 2019; Wade & Tittler, 2020). As stated by Brady et al. (2023), interventions that target these specific components in the forgiveness process can be beneficial, such as interventions that target emotional regulations strategies or desired emotional states, and/or interventions (such as training programs) that can teach and educate individuals about forgiveness-related emotion regulation strategies and foster the skill of emotion regulation – that is, interventions that help individuals develop their capacity to engage in a forgiveness-related process, if they so desire. However, although the small body of literature investigating improved skills of coping and emotion regulation via participation in forgiveness interventions shows promising results (e.g., Landry et al., 2023), limited research yet exists on such interventions (Brady et al., 2023).

While forgiveness has received widespread attention in areas such as clinical psychology/therapy and health psychology, only recently has forgiveness evolved to gain attention within the fields of organizational psychology and organizational behavior (Fehr

& Gelfand, 2019). Similar to the general forgiveness literature, forgiveness in organizational contexts has most often been investigated from a state or trait perspective and has been found to promote a variety of positive outcomes. For example, forgiveness at work has been linked to outcomes such as enhanced well-being, reduced burnout, and reduced stress (Fehr & Gelfand, 2012). According to Aquino et al. (2003), forgiveness can also have a major impact on workplace-specific outcomes, such as an employee's performance and productivity as it releases negative emotions and allows trust to be restored in workplace relationships. Aligned with this reasoning, a recent literature review suggests that forgiveness in organizational contexts is associated with enhanced job satisfaction and affective commitment, and with decreased psychological withdrawal (Fehr & Gelfand, 2019).

Despite the importance of forgiveness for organizational contexts, there is little research that specifically focuses on proposing forgiveness interventions in organizational contexts (for an exception, see Barclay & Saldanha, 2016), and no identifiable research involving forgiveness skill. The concept of forgiveness skill, introduced in this dissertation, is defined as a person's capacity to engage in a forgiveness-related process. Forgiveness skill is particularly important in organizational contexts because interpersonal offenses are an unfortunate, but unavoidable, reality of organizational contexts (Aquino et al., 2003). As such, interventions focused on promoting forgiveness skills could help individuals be better prepared to deal with future offenses they may encounter (Barclay & Saldanha, 2015).

Taken together, this suggests that there is an opportunity to create a novel intervention to promote individuals' forgiveness skill in workplace contexts. To do so, this dissertation relies on a novel conceptualization of forgiveness that examines it through an emotion regulation lens (Brady et al., 2023), as well as complementary theoretical perspectives (e.g., stress-and-coping model, Strelan, 2020; emotion-regulation strategy, Naragon-Gainley et al., 2017; expressive writing, Pennebaker; 2003), to propose an intervention aimed at enhancing this skill over time.

Conceptual underpinnings

Research has shown that the effective management of social transgressions, including via forgiveness, is a crucial skill in organizational settings in order to create better team performance and job satisfaction (Struthers et al., 2005). Attewell (1990) explains that knowledge and ability are key terms that define skill. The ability to apply knowledge in real-life situations shows that both theoretical and practical aspects are necessary to be able to perform, learn and train a skill. As this research aims to understand if forgiveness as a skill can be trained through specific methods and, therefore, be implemented as an organizational training program, the following chapter shall distinguish the different terms that involve the concept of skill and identify which key works define skill to create a general understanding of the concept, as well as of the process that could be adopted to promote forgiveness skill in an organizational environment.

The definition of forgiveness skill and underlying concepts

In this dissertation, forgiveness skill is defined as a person's capacity to engage in a forgiveness emotion regulation-based process.

Skills are learned abilities that enable individuals to perform specific organizational tasks automatically, effectively, efficiently, and consistently (Spenner, 1990; Boyatzis & Kolb, 1995).

Because skills depend on abilities, individuals can be equally skilled but obtain different results due to different baseline ability. An ability example is weightlifting. Two individuals can be equally skilled to lift (e.g., are equally familiar with weightlifting techniques, and can execute them with the same level of proficiency). However, due to differences in strength, speed, stamina, etc., one can lift 150 pounds, while the other can only lift 140 pounds (Stanley & Williamson, 2017). In summary, baseline ability presents the starting point from which individuals can build and improve their skills through practice, learning and conscious effort. Applied to forgiveness, this suggests that trait forgivingness – an important aspect that can reflect a person's baseline ability to forgive – may influence forgiveness skill.

Other factors that can reflect baseline ability to forgive, and therefore influence skill, are forgiveness self-efficacy and trait self-control. Self-efficacy has been found to impact self-regulation and other psychological factors (Harris & Thoresen, 2006). For example, a study by Bell and Kozlowski (2002), among other research, has shown that focusing on performance is associated with a positive connection to self-efficacy among individuals with high abilities, whereas it is negatively linked to self-efficacy among individuals with low abilities. Moreover, owning or gaining a skill in forgiveness does not necessarily mean that one is capable of activating such skill in a specific condition or context. To engage in an activity or make an individual choice, self-efficacy for that specific task or domain is one major determinant (Braun et al., 2020).

Further, individuals high in trait self-control tend to perceive positive (negative) emotions as more useful (less useful) and experience more (less) positive (negative) emotions following an emotion regulation task, ultimately leading to better performance in self-control (Tornquist & Miles, 2023). This suggests that trait self-control can positively influence an individual's emotion regulation. Therefore, traits such as self-control and the level of forgiveness self-efficacy can also influence the forgiveness outcome.

For the aim of this research, this highlights the need to measure and control for the baseline ability to forgive, in the form of trait forgivingness, trait self-control, and trait forgivingness self-efficacy, as to determine the effect of a forgiveness intervention on an individual level.

The interconnection between skills and knowledge

A manifestation of a skill is a manifestation of different knowledge states and actions based on guidance. Knowledge is propositional and an automatic set of constructs applied at times when one knows how to, when to, where to, and whether to. Sometimes knowledge is considered as a concrete example of general intelligence, but in reality, it is the result of the interaction between intelligence (the ability to learn) and situations (the opportunity to learn), making it more socially influenced than intelligence.

Knowledge includes fundamental principles and ideas as well as tacit knowledge acquired through personal experiences and the performance of specific tasks (Winterton &

Stringfellow, 2005). Indeed, two types of knowledge can be distinguished – declarative knowledge and procedural knowledge. Whereas declarative describes the knowledge of facts and concepts that an individual can apply, procedural knowledge includes the connection of declarative knowledge pieces and is generally knowledge that cannot be communicated but rather refers to the knowledge of how to perform a task or a skill, i.e., how to execute a particular procedure using specific techniques and strategies (Baartman & Bruin, 2011).

Skills involve situation-specific knowledge, knowing the situation and how to act. When someone retains a knowledge state, one can apply it across different situations (Stanley & Williamson, 2017). Knowledge in declarative form allows for flexibility, but it comes at a significant cost in terms of time and working memory space. Indeed, retrieving declarative information from long-term memory is a slow process, and requires constant refinement of conditions in order to promote generality. Consequently, learning steps are often intentionally small to become compiled into a procedural form (Anderson, 1964). As such, in the context of this research, to promote and train the skill of forgiveness in an organizational context, it is inevitable to educate about forgiveness as declarative knowledge. This knowledge can subsequently transform into procedural knowledge, allowing individuals to retrieve it in diverse situations and apply it as personalized strategies for forgiveness.

Specifically, a skill needs to be trained by the process of learning and strategies which “enable learners to choose at appropriate times the intellectual skills and knowledge they will bring to bear on learning, remembering and problem-solving (Gagne, 1984, p.38). Fitts (1964) divides the process of acquiring a skill into three stages. The first stage is cognitive/declarative, where the learner encodes information required to generate a rough approximation of the skill. The second stage is associative/knowledge compilation, where the learner works on minimizing errors in performance. The third stage is autonomous/procedural, where the learner gradually improves their performance over time (Anderson, 1982; Fitts, 1964). Ryle (1949) states that learning how is not like learning that. Developing a skill in forgiveness in an organizational context requires individuals to undergo a training process and apply specific strategies that enable them to choose the appropriate intellectual skills and knowledge necessary to forgive (cross-situational consistency,

conducting measurements pertaining to the construct of trait forgivingness to enhance the research's relevance). By practicing forgiveness strategies (e.g., emotion regulation; Brady et al., 2023) individuals can develop their forgiveness skill, apply the skill in multiple situations, and cultivate and maintain positive relationships with colleagues and other stakeholders within the organization.

For this research, to acquire a forgiveness skill, it is therefore assumed that an individual needs to gain declarative knowledge forming into procedural knowledge, as it is relevant to know what forgiveness is, how to forgive, to undergo the process of forgiveness and put knowledge into action. However, tacit knowledge (personal experiences) and baseline ability (such as trait forgivingness, self-control and self-efficacy) may also influence the degree to which one can forgive. For example, someone who has experienced social transgression stronger or more frequently than someone who did not will probably have more difficulties forgiving (Fehr & Gelfand, 2010).

The process of forgiveness

Although forgiveness has been extensively theorized by researchers, there has been little empirical investigation into the actual processes involved in forgiving. As mentioned, antecedents of forgiveness and their influence on the actual process to forgive can vary across individuals and situations. For example, personality traits, religiosity, relationship-specific influences, offence-specific influences, the severity of the offence, social-cognitive influences on forgiveness, apology, empathy, rumination, and attributions about offender's behavior are all factors that can influence the process of forgiveness (Riek & Mania, 2012).

Decisional forgiveness is when an individual intends to behave with a forgiving attitude, meaning, to avoid displaying resentment towards the transgressor and behave in ways that treat the transgressor with value (Exline et al., 2003). In contrast, emotional forgiveness is a process, a transformation towards an improved state where emotions towards a transgressor become less negative, more neutral, or even positive. Specifically, negative emotions such as anger, fear, and resentment are mitigated, and possibly replaced with positive ones like empathy, compassion, and love (Worthington, 2019). Emotional forgiveness, then, is an internal shift from negative emotions towards the offender to neutral or even positive emotions (Garthe & Guz, 2019).

Building on this distinction between decisional and emotional forgiveness, it is essential to revisit the emotion regulation perspective that serves as the primary theoretical foundation for this study (Brady et al., 2023). This emotion regulation-based framework provides a nuanced understanding of an individual's forgiveness process, particularly in what concerns the complexity of emotional processes involved in forgiveness. In particular, it suggests that emotion regulation strategies can be used to mitigate negative and/or enhance positive emotions towards the transgressor. Emotion regulation is a method individuals use to manage their emotions, influencing when and how to express and/or even feel them (Gross, 1998). In the context of forgiveness and this research, emotion regulation can be understood as strategies intended to manage the emotional responses evoked by a transgression. In the design of the proposed intervention, an emotion regulation framework will be applied to help individuals enhance their forgiveness skill. Specifically, they will receive information and/or be trained on a specific emotion regulation strategy, intended to develop their capacity to engage in a process of forgiveness (i.e., to promote their forgiveness skill).

Forgiveness intervention

Intervention models are not comprehensive theories per se, rather, they seek to engage individuals in a theory-based activity that could potentially lead to a specific outcome (Worthington, 2019). Forgiveness can occur naturally, or it can occur while an individual undertakes an intervention where one follows a set of guided experiences. In this way, interventions can support individuals in their engagement in a forgiveness process.

For example, Harris et al. (2006) found that a forgiveness training program can significantly reduce offence-specific unforgiveness compared to the control condition. In their research, both groups showed improvement over time, but the reduction in offence-specific unforgiveness was faster and to a greater extent in the intervention group. Therefore, forgiveness can occur naturally. But a study by McCullough et al. (2010) builds on Harris et al., suggesting that without intervention the power curve of unforgiveness decreases over time. Still, individuals react differently, and the responses varied across the sample group. Wade et al. (2014) tested the effects sized of 62 forgiveness interventions compared to other treatment modalities in a meta-analysis and overall showed that forgiveness interventions improve psychological well-being and promote forgiveness.

As mentioned, conflicts in organizations are inevitable. Individuals from different backgrounds represent different values and maintain different ways of working and elaborating on a task. Day-to-day conflicts, cases of bullying, and harassment have the potential to find manifestation in organizational life and harm productivity in the long run (Aquino & Tau, 2009; De Wit et al., 2012). Early recognition and the implementation of forgiveness as a conflict management strategy in organizations can help to prevent further negative effects and instead cultivate a forgiveness climate (Brady et al., 2023; Fehr & Gelfand, 2012). Forgiveness skill can be particularly important in this regard, because, as highlighted earlier, it represents an individual's capacity to engage in forgiveness-based emotion regulation strategies. By cultivating and maintaining such skill in forgiveness, individuals could handle interpersonal transgressions and workplace conflicts more constructively and navigate negative emotions in challenging situations towards resilience and understanding.

Following the meta-analysis of the forgiveness intervention by Baskin & Enright (2004) suggesting greater effectiveness for process-based individual format interventions, this study assumes a process-based individual format intervention. Specifically, this research aims to create forgiveness skill training methods that can be applied in organizational settings. Nevertheless, any organizational training, especially to sensitive topics such as workplace conflicts and forgiveness, should be mindful of the direct and indirect costs associated with the implementation as well as the confidentiality of participants' experiences and responses (Barclay & Saldanha, 2015). Further, in the context of intervention, it is important to point out that the process of forgiveness should not be rushed or forced upon the individual (Barclay & Saldanha, 2016). However, when people express a desire to forgive, it is important to provide them with appropriate tools, support them in drawing on existing skills, and provide them with knowledge about the forgiveness process. These tools serve to facilitate the development of forgiveness skills and enable more effective and informed practice.

Expressive writing

Expressive writing is an intervention technique that provides people with a cathartic outlet for their emotions, help the, gain insight into their experiences, and potentially facilitates psychological healing (Pennebaker & Beall, 1986). Research has shown that engaging in expressive writing can have various benefits such as improved emotional well-being, lower stress levels, improved coping mechanisms and greater self-esteem (Lepore & Smyth 2002; Pennebaker & Chung, 2007). Additionally, implementing expressive writing techniques in an organizational setting is simple, cost-effective and can be self-administrated. These constraints offer a practical and accessible solution for individuals in the workplace.

Research has already demonstrated the beneficial outcomes of expressive writing on forgiveness. Expressive writing as a self-performed task has been shown to facilitate forgiveness for individuals who have experienced unjust incidents. It was used as a relatively straightforward intervention, in which individuals perform expressive writing exercises that can contribute to the forgiveness process by undergoing different writing exercises, first expressing negative emotions and further writing about forgiveness (Barclay & Saldanha, 2016).

Taken together, this suggests the relevance of adopting expressive writing as the paradigm for the present intervention.

Emotion Regulation – Reappraisal

Writing about traumatic events promotes cognitive processing and encourages the understanding of emotions which could otherwise be suppressed (Pennebaker et al., 2003). For example, Boggio et al. (2020) conducted an intervention to examine the impact of gratitude on emotion-regulation strategies, where participants wrote about their personal experiences of gratitude. Compared to a control group that wrote about non-emotional routines, both gratitude groups were more effective at emotional reappraisal, showing that focusing on personal past experiences of gratitude can enhance present emotion regulation. However, these findings were only tested on individuals in an intrapersonal context, but not in the context of interpersonal forgiveness towards a transgressor.

The framework of forgiveness as a process of emotion regulation suggests that individuals can manage their emotional responses and facilitate the transition from hurt to healing. The research of Boggio et al. (2020) highlights the importance of positive emotions to foster well-being. Moreover, Witvliet et al. (2015) have explored specific strategies that can support the process. In particular, compassionate reappraisal aligns with the idea of positive emotions by encouraging individuals to perceive transgressions with more understanding, whereas strategies like emotion suppression can be counterproductive and potentially have a negative emotional impact on the processing of interpersonal transgressions.

Taken together, previous findings on expressive writing, positive emotions, forgiveness, and moreover the focus on reappraisal, suggest a novel writing intervention on forgiveness skill.

In the psychological context reappraisal, refers to a cognitive approach or emotion regulation technique to interpret an emotional experience or change an individual's perspective in order to repair one's emotions through decreasing negative emotions and increasing positive emotions (Golding et al., 2008; Denson et al., 2012). As an example, an individual is getting criticized in an organizational context and uses the method of reappraisal to shift the

emotional experience into a more positive direction and rather focus on the potential growth through the given feedback. Witvliet et al.'s research (2020) suggests that using emotion regulation strategies such as reappraisal in the process of forgiveness might shift an individual's perception of the hurtful event and emotions towards forgiveness.

This research uses the emotion regulation method of reappraisal because of the demonstrated effectiveness in reframing emotional experiences, especially transgression into more positive perspectives. By using reappraisal individuals can be empowered to navigate interpersonal offences in organizational settings and foster a forgiving environment.

Methodology

This research aims to develop an emotion-regulation based intervention to promote forgiveness skill, taking into consideration factors that can reflect differences in baseline ability to forgive (trait forgivingness, self-control, and forgiveness self-efficacy). The intended implication of this research is to provide insights into the feasibility of using such emotion regulation practices in organizational contexts, thereby promoting forgiveness skill and, ultimately, improving both psychological and physical well-being.

Specifically, in the present research participants will undergo an intervention training program designed to enhance their forgiveness skills. To this end, the present study employs training on emotion regulation strategies, in particular on reappraisal, delivered via an expressive writing intervention format (Barclay & Saldanha, 2016; Witvliet et al., 2020). Specifically, within the framework of this study, participants will engage in emotion regulation via an expressive writing paradigm to explore their feelings of hurt, anger, and resentment, applying reappraisal techniques to reinterpret and reframe those emotions.

The surveys were created on the platform Qualtrics, whereas participants were recruited through Prolific. Methodologically, two experimental conditions (forgiveness knowledge + skill training, forgiveness skill training only) and one control condition were created. The experimental conditions focus on two different aspects of forgiveness training. One emphasizes forgiveness skill training by using a reappraisal writing intervention, while the other combines forgiveness knowledge + skill training in order to investigate if providing knowledge (education about forgiveness) followed by also using a reappraisal writing intervention has an even higher impact on forgiveness skill development over time. The control condition does not use reappraisal (instead, it uses a similarly formulated and delivered intervention based on an unrelated construct – motivation) and serves as a baseline to compare the effects of the two experimental conditions. The primary purpose of using an experimental method was to determine causality – that is, to determine whether manipulating the type of training participants engaged with had an effect on their level of forgiveness skill over time. Participants were randomly assigned to the three study conditions to ensure that sample composition was equivalent across conditions. Random assignment is crucial to control for potential confounding variables and ensures the internal validity of experimental

design (Field, 2013). Analytically, the study employs a repeated measures ANCOVA with both a within-subjects factor (time) and a between-subjects factor (condition) as recommended for examining effects over time in different groups (Field, 2013).

The experimental conditions build upon, but are different from, the previously explored forgiveness intervention (Barclay & Saldanha, 2016; Romero 2008). Specifically, previous interventions aimed at enhancing state forgiveness by focusing participants on a specific offense they had suffered, and then helping individuals to both process their emotions and actively work on changing their perspective, leading to a deeper and more holistic understanding of forgiveness. As the focus of this research is to develop forgiveness skill, in the first of the experimental conditions of the present research participants will instead be presented with fictional scenarios and will be asked to engage in expressive writing under reappraisal instructions (forgiveness skill training condition). However, due to the interconnection of knowledge and skill, it is inevitable to educate about forgiveness as declarative knowledge. As such, in the second experimental condition, after being presented with fictional scenarios, participants will first be presented information about forgiveness, and only then will be asked to engage in expressive writing under reappraisal instructions (forgiveness knowledge + skill training condition).

However, as previous research suggested that individuals high in some traits might forgive more naturally (Worthington et al., 2007), this research takes into account three key constructs (trait forgivingness, self-control, and forgiveness self-efficacy) that measure different aspects related to forgiveness. Measuring traits will provide a general understanding of the baseline ability to forgive at the starting point of the intervention. This includes assessing the ability to regulate emotion and the general tendency to forgive and the extent of forgiveness after undergoing the intervention. Therefore, the study measures trait self-control, trait forgivingness, and forgiveness self-efficacy, which is “an individual's belief in his or her own ability to organize and implement action to produce the desired achievements and results” specifically pertaining to forgiveness (Bandura, 1997, p. 3) as control variables.

In summary, previous literature findings will be taken into account in the methodology and aim of this research. These are:

1. Certain traits, particularly self-control, can positively influence self-regulation (Tornquist & Miles, 2023). Self-efficacy also has an impact on self-regulation (Harris & Thoresen, 2006). Both phenomena are postulated to lead to the resolution of forgiveness, underscoring the imperative of quantifying and accounting for individual attributes such as trait (self-control) and self-efficacy. Additionally, trait forgivingness serves as a characteristic that can shape an individual's engagement in forgiveness (Worthington et al., 2015).
2. To learn and train a skill, knowledge is required (Stanley & Williamson, 2018). Participants need to be educated about techniques to forgive in order to apply these in future situations according to Fitt's (1964) process of acquiring a skill.

This research hypothesizes the following:

H1: Participants in the forgiveness skill training only condition (H1a) and the forgiveness knowledge + skill training condition (H1b) will acquire higher improvements in forgiveness skill levels over time compared to participants in the control condition.

H2: Participants in the forgiveness knowledge + skill training condition will acquire higher improvements in forgiveness skill levels over time compared to participants in the forgiveness skill training only condition.

Methods

Procedure

The study consisted of three sessions over a period of five working days, plus a follow-up survey 18 days later.

Initially, participants were informed about the structure and objective of the study. Subsequently, their voluntary participation was sought through a formalized consent process. The study encompassed three distinct segments. The first segment was the pre-intervention questionnaire measuring participants' trait self-control, trait forgivingness and forgiveness self-efficacy. In the second segment, participants were randomly assigned to one

of the three conditions: control, forgiveness knowledge + skill training, and forgiveness skill training only. In the third segment, participants completed three days of self-practice of their assigned exercises (intervention days), as well as a short follow-up questionnaire 18 days after the intervention.

During the three intervention days, participants engaged in self-practice based on their respective condition. On any given day, all participants received the same scenario (with each day including a different scenario), and were asked to write for 5 minutes under different instructions. Participants in the forgiveness knowledge + skill training condition and the forgiveness skill training only condition were asked to think about the specific situation presented in the scenario from the perspective of a neutral third party. These instructions were based on reappraisal instructions developed by Finkel et al. (2013) and were specifically designed to promote interpersonal forgiveness. These exercises should encourage participants to reflect on conflicts and use reappraisal techniques to process the negative emotions associated with forgiveness. Additionally, participants in the forgiveness knowledge + skill training condition were given relevant information about forgiveness. In contrast, the control group was given a neutral writing task about motivation (“Today, we ask you to please think about your motivation in this specific situation”) that is unrelated with forgiveness. Ending the writing exercise, participants were asked to fill out the 8-item forgiveness scale.

Eighteen days after the third questionnaire, all participants received a follow-up questionnaire with a fourth scenario. As the purpose of the follow-up was to investigate the persistence of any changes accrued during the intervention days, no writing exercise took place, and only the 8-item forgiveness scale was presented to participants. All questionnaires were administered via Qualtrics (2023) Survey Software. Attention check items were included in the questionnaires to monitor participants' attention, ensuring they are engaged and following the given instructions.

Participants

A total of 150 participants were recruited through Prolific, a software to conduct research (Prolific, 2023). So that materials can remain in English, the study ran with US participants. Some participants were excluded from the data because of failed attention checks or because

they dropped off after the first questionnaire (Q1). The research measured participants' attention in order to generate high-quality data and have evidence that participants paid full attention during the survey, e.g., participants who did not answer option two in the question "To ensure everyone is keeping up with instructions, select option two in this item" were excluded. In Q1 four participants failed, whereas in Q2 three participants failed, in Q3 no participant failed, and in the follow-up questionnaire two participants failed the attention check. Regarding retention, 21 participants dropped off in Q1 – Q3 and four participants dropped off in the follow-up questionnaire. Across all questionnaires, participants were continuously asked to indicate their gender and age at the end of each questionnaire, which is a further mechanism to track that people indicate the right thing. No participants were excluded from the research based on these criteria. Thus, only retention and attention checks were used as inclusion criteria. Taken together retention and attention check data, this yielded a final sample of 118 participants.

Participants responded to eight demographic variables: age, gender, ethnic identity, educational background, work hours per week, site work, tenure in current organization, and occupation. Of the 118 participants, 48 were female, 69 were male and one identified as non-binary. Participant age ranged from 22 to 73 with a mean age of 42.7 (SD= 12.18). The most represented ethnic identity was White/Caucasian (80.5%), followed by Black/African-American with 8.5%. Most participants have a college degree (44.1%) and work around 40 hours per week (59.3%) with a mean of 32.75 (SD= 7.15) of which 30.5% work on-site with a mean of 20.59 (SD= 14.19). The average tenure of participants in their current organization is 8.87 years, with a standard deviation of 7.47 years. The five most common occupations were Computer and Mathematical (15.3%), Sales and related (10.2%), Education, Training and Library (9.3%), Management (8.5%) and Office & Administration (7.6%), indicating a sample from different work environmental contexts. The complete demographic overview of the demographic information can be found in Appendix 1.

Measures

To account for individual differences, Trait Self-control, Trait Forgivingness, Forgiveness Self-efficacy and Positive and Negative Affect Schedule are variables that were measured at the beginning of the study to get an understanding of the participant's starting point (baseline

ability to forgive). All scales were adapted to a 7-point Likert scale. Scale instructions were adapted in order to generate constant consistency and anchors for the participants that provided a simple understanding of each measurement. Further, participants were randomly assigned to one of the three conditions over the whole period of the study. After reading the scenario and writing under their respective instructions for 5 minutes, post-intervention forgiveness scores were measured, allowing for an assessment of the evolution of forgiveness skill over time. All scales can be found in Appendix 2.

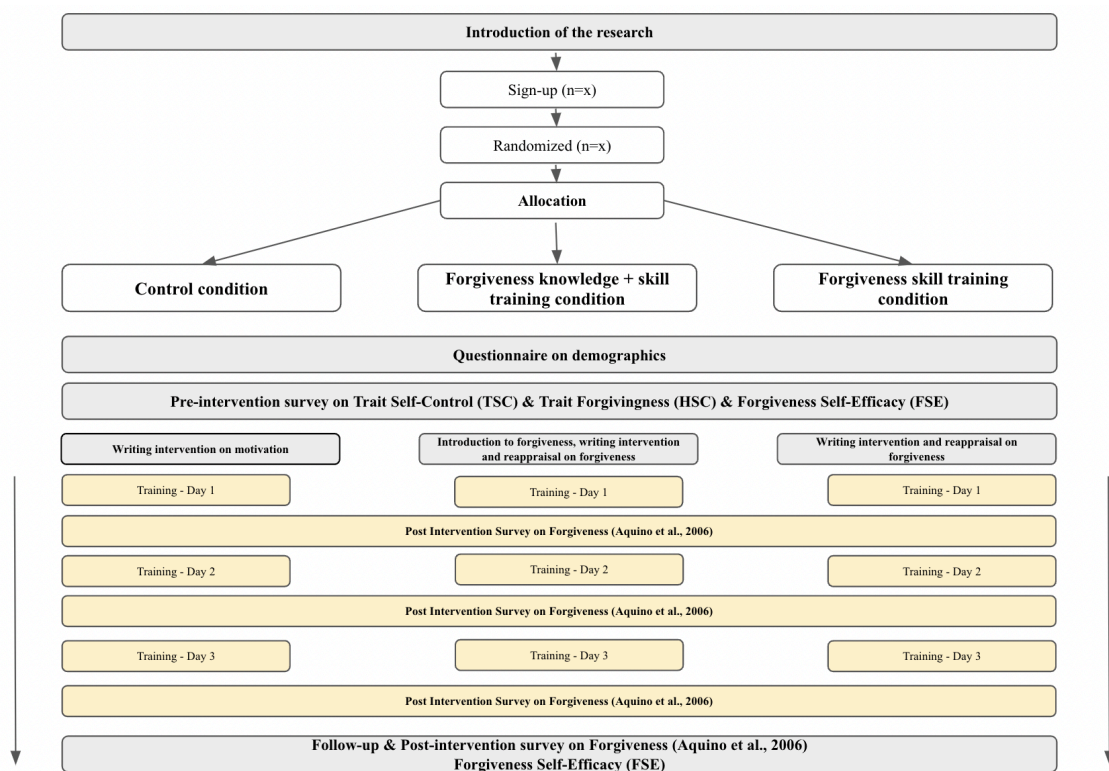


Figure 1: *Procedure*

Trait Self-Control

Trait Self-Control (TSC) was measured using a validated self-report TSC scale (Tornquist & Miles, 2023). Specifically, the Brief Self-Control Scale (Tangney et al., 2004) was used to measure self-control. Participants needed to rate 13 items, including questions like “I am good at resisting temptation” on a scale of 1 (not at all) to 7 (a great deal). The total scores were derived from the average of the 13 items (nine items are scored in the reverse direction and were thus reverse-coded for the analysis). Elevated scores correspond to higher levels of TSC.

Trait Forgivingness

Trait forgivingness was measured with the Heartland Forgiveness Scale (HFS). It is an 18-item self-assessment questionnaire with a 7-point scale from 1 (Not at all) to 7 (A great deal) designed to assess a person's dispositional forgiveness (i.e., general tendency to forgive) rather than forgiveness of a specific event or person. The full HFS consists of items that reflect a person's tendency to forgive self, others, and situations that are beyond a person's control (e.g., a natural disaster) (Yamhure Thompson, 2005). For the purpose of this research, just the items that reflect the tendency to forgive others were used (three items are scored in the reverse direction and were thus reverse-coded for the analysis). Elevated scores correspond to higher levels of trait forgivingness.

Forgiveness Self-efficacy

Forgiveness self-efficacy was measured with the Forgiveness Self-Efficacy Scale (FSE). It is an instrument consisting of 14 items and was designed to measure a person's confidence in their ability to perform forgiveness-related tasks. The scale focuses on distinguishing between a person's actual level of forgiveness and their belief in their ability to forgive or perform specific forgiveness-related actions. This confidence is called 'forgiveness self-efficacy' (Harris et al., 2006). The scale has not been validated in other research but is helpful for the purpose of this study and for understanding forgiveness within this modern framework. For the purpose of this research, the scale has been adapted to a questionnaire with a 7-point scale from 1 (Not at all) to 7 (A great deal).

Forgiveness Outcome

The level of forgiveness skill was determined using the same forgiveness scale across all conditions and data collection days. This allowed for a direct comparison of forgiveness scores between the three conditions and an assessment of possible changes in forgiveness skill over time.

To assess the extent to which an individual embraced forgiveness through the process of releasing negative emotions triggered by the offence and enhanced positive emotions as part of the expressive writing and reappraisal intervention, five items were adapted from Aquino et al. forgiveness scale (2006) (e.g., "I let go of negative feelings I had against them"). Items

for compassion, empathy, and positive emotions were added, so that a 8-item scale was used. The items were answered by means of a 7-point Likert scale format in order to keep measurement consistency for all participants (1 = not at all, 7 = very much).

Filler items

In order to cover the true purpose towards the participants across data collection days, five filler items have been added (e.g. “I am capable of finding pleasure in everyday activities”). As these items served filler purposes only, they will not be analyzed further.

PANAS

Including the Positive and Negative Affect Schedule (PANAS) in a pre-questionnaire for a forgiveness study can help consider and understand the role of participants’ emotional states that they bring to the study and further might impact the forgiveness process. The 10-item scale measures positive and negative affect on individuals (e.g., inspired, afraid) (Watson et al., 1988). The PANAS has been adapted to a 7-point Likert scale format (1 = not at all, 7 = very much).

Scenarios and source

This research used standardized fictional scenarios to ensure that all participants in all three conditions were exposed to the same context, minimizing variability in the experimental condition. The justification for this research’s approach to scenario development lies in the intention to capture a range of common and realistic workplace situations. These scenarios were deliberately chosen to address situations that are not immediately forgivable due to their severity and potential consequences. By focusing on such scenarios, this research aims to provide participants with training that will enable them to effectively manage non-trivial situations. All scenarios can be found in Appendix 4 and the instructions for the knowledge condition in Appendix 5.

By selecting these scenarios, the potential impact on the individual and the workplace is carefully considered. For the aim of this research a given scenario from previous research was slightly adapted to the forgiveness intervention (Barclay & Saldanha, 2016), as cited in Wenzel & Okimoto, 2014). All further scenarios were inspired by the first scenario, using

different interpersonal transgression contexts, but with similar fundamental conditions (e.g., similar types of negative behavior in terms of severity and consequences, same power levels between colleagues, gender-neutral name of the offender). This ensures not only that the (possible) effectiveness of the training will not just apply to one type of offence but generalize across different offences, but also that no extraneous factors (e.g., severity) affect the manipulations.

Participants in the forgiveness knowledge + skill training condition as well as the forgiveness skill training condition were asked to put themselves into the perspective of a neutral third party who wants the best for all involved, someone who sees things from a neutral point of view. This approach is grounded in the principles of emotion regulation and reappraisal. These instructions were taken from research on conflict reappraisal by Finkel et al. (2013) and adapted to an organizational scenario for the purpose of this research.

The scenarios were followed by a writing intervention (writing for 5 minutes, each group under their respective writing conditions).

In the forgiveness knowledge + skill training condition, prior to the writing instructions, participants were provided information about forgiveness. As taken from previous research, a skill can be obtained by going through different knowledge states (Gagne, 1984, p.38). Therefore, each day the participants were informed about different aspects of forgiveness in order to test the impact of procedural knowledge on skill. The forgiveness content was informed by previous research on forgiveness (e.g., Brady et al., 2023; Enright, 2012; Riek & Mania, 2012), and adapted to a more simple and understandable manner for the participants in this condition with the help of mainstream media sources (Forgiveness Defined, 2012; Mayo Foundation for Medical Education and Research, 2022).

Data analysis

Decisions on whether to include or exclude participants based on exceeding the time of the writing intervention were made. While some participants exceeded the time for the writing intervention of 5 minutes, a decision was made not to exclude them. Firstly, to ensure further quality of the research and a larger sample group. Secondly, it was concluded that these data

points were not primarily issues of data quality, but rather reflect the notion that the process of expressive writing is deeply personal and can vary across individuals (Pennebaker & Chung, 2007).

The data was collected in Qualtrics and processed by using SPSS. For the trait self-control variable as well as the forgiveness variable it was necessary to perform reverse coding. Means of all scales were computed. Subsequently, a detailed correlation analysis to better understand the relationships between the scales was conducted. Results are presented in Table 2. This table showcases the patterns of relationships between scales, helping to highlight meaningful correlations.

Reliability testing was performed on the items for each scale using Cronbach's alpha. This analysis investigates the internal consistency of the items within each scale. A scale with high internal consistency indicates that the items within the scale measure the same construct or factor (Field, 2013).

A repeated measures ANCOVA with both a within-subjects factor (time) and a between-subjects factor (condition) was also performed. This approach allows to control for relevant external variables that might influence the results (i.e., trait forgiveness, trait self-control, trait forgiveness self-efficacy, and positive and negative affect) and ensuring a robust test of the hypotheses (Kirk, 2012).

Data quality

Before using the questionnaires Q1, Q2, and Q3 which the participants answered during the time of five working days (Monday, Wednesday, and Friday) and the follow-up questionnaire (FU), the data was cleaned. Firstly, participants who opened the survey and started Q1 - Day in Prolific and returned to Prolific were filtered out. All participants gave their consent by indicating “I consent to participate in this study” and were therefore taken into further consideration. The participant's list was checked for duplicates and there were no further Prolific ID duplicates identified in the data table.

Data use

Besides their consent, all participants were asked their own opinion of the quality of the data they provided. All participants answered “yes” to the question “In your honest opinion, should we use your data?” and, therefore, indicated no reason to be removed based on this criterion.

Purpose

Finally, participants were enquired about their thoughts on the purpose of the research at the end of Q3. Participants shall not understand the full research purpose to avoid responding to what they believe the researcher is looking for. All purpose answers from all participants were checked and no purpose answers aligned with the exact purpose of this research.

Writing condition

All writings were inspected to ensure that participants followed their respective writing conditions. All participants fulfilled the instructions.

Reliability

Reliability was checked for all scales using Cronbach’s alpha. It provides a measure of how well the items on the questionnaire test the same construct. Therefore, the Cronbach’s alpha coefficient was used to determine the reliability and internal consistency of all scores. All Cronbach’s alpha were above 0.7. Moreover, high and significant inter-item correlations were observed within all scales. Thus, all scales are considered valid and no items were removed (Field, 2013). An overview is shown in Table 1.

Table 1: Cronbach's alpha of the scales

Scale	Item	Cronbach's alpha coefficient
Self-control (TSC)	13-item	.911
Trait forgivingness scale (HFS)	6-item	.893
Forgivingness self-efficacy (FSE)	14-item	.920
PANAS positive	5-item	.886
PANAS negative	5-item	.944
Forgiveness (Q1)	8-item	.956
Forgiveness (Q2)	8-item	.944
Forgiveness (Q3)	8-item	.955
Forgiveness (Follow-up)	8-item	.961

Correlation

To understand the relationships between the scales, a correlation analysis was conducted. This allowed to determine how the different constructs might be related and influence one another and determine the strength and direction of the linear relationship between variables.

The results show that forgiveness self-efficacy (FSE) has a significant correlation to trait forgivingness (HFS) ($r = .638$; $p = <.001$), supporting what was mentioned in previous research that individuals with a higher tendency to forgive also have a higher belief in their capability to forgive (Harris & Thoresen, 2006). HFS is positively correlated with forgiveness on day 1 ($r = .633$), day 2 ($r = .350$) and day 3 ($r = .400$), all with $p = <.001$, as well as the follow-up forgiveness scale (FU FS) after 18 days ($r = .234$; $p = .011$) suggesting that the inherent nature to forgive impacts the forgiveness skill outcomes across all three days of the intervention and 18 days after the intervention. However, the relationship is not too high, meaning that we did not measure the same construct of trait forgivingness. FSE is positively correlated with forgiveness on day 1 ($r = .616$), day 2 ($r = .390$), day 3 ($r = .356$), and in the FU FS ($r = .353$) all with $p = <.001$, indicating that the belief in one's ability to forgive plays a vital role in forgiveness skill. Self-control (TSC) has a significant positive correlation with FSE ($r = .327$; $p = <.001$), suggesting that individuals with higher self-control might believe more in their capability to forgive. TSC is also positively related to forgiveness on day 1 ($r = .349$; $p = <.001$), day 2 ($r = .285$; $p = .002$), day 3 ($r = .244$, $p = .008$) and in the FU FS ($r = .238$; $p = .009$) implying that TSC plays a role in the forgiveness outcome. The negative PANAS had a significant negative correlation FSE ($r = -.240$) and TSC ($r = .441$), indicating that negative affect might hinder the belief in one's ability to

forgive and one's self-control. The forgiveness skill intercorrelation (Q1 FS, Q2 FS, Q3 FS and FU FS) are meaningful, but not too highly correlated, indicating that forgiveness skill is changing over time. No excessively high correlations were identified. An overview of these results can be found in Table 2.

Table 2: Correlation between the scales

Variable	n	M	SD	1	2	3	4	5	6	7	8	9
1 HFS	118	29.30	7.67	.893								
2 FSE	118	61.50	15.97	.638***	.920							
3 TSC	118	67.63	13.85	.305***	.327***	.911						
4 +PANAS	118	23.73	42.73	.166	.202*	.459***	.886					
5 - PANAS	118	8.76	28.34	-.178	-.216*	-.441***	-.328***	.944				
6 Q1 FS	118	29.31	159.19	.633***	.16***	.349***	.405***	-.214*	.956			
7 Q2 FS	118	24.43	148.20	.350***	.390***	.285**	.405***	-.171	.663***	.944		
8 Q3 FS	118	28.10	184.95	.400***	.356***	.244**	.351***	-.105	.637***	.670***	.955	
9 FU FS	118	26.35	163.36	.234*	.353***	.238**	.298**	-.119	.552***	.544***	.558***	.961

*** Correlation is significant at the <0.001 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Assumptions

To validate the results of the research, primary assumptions were checked.

Homogeneity of covariances was checked using Box's Test of Equality of Covariance Matrices. The p-value from the Box's Test is 0.0206, which is greater than the conventional alpha level of 0.05, meaning the test fails to reject the H0. The H0 in the context of this study means that the covariance matrices for the dependent variable across the different days are assumed to be equal for all three conditions (control, forgiveness knowledge + skill training, and forgiveness skill training). As the p-value is not significant, there is no evidence that the assumption of homogeneity of covariance matrices is violated. The assumption was met.

Levene's Test of Equality of Error Variances is used to test the assumption of homoscedasticity (homogeneity of variances) in the ANCOVA. The test determines if the variances for two or more groups are equal. Test results of the forgiveness scale on day 1 (p = .757), day 2 (p = .073) and day 3 (p = .561) and the follow-up day (p = .450) indicate that there is no significant difference in error variance across groups. As all p-values are above

0.05 across all scales the assumption of homogeneity of variances is met and an indicator for the validity of the test results.

After checking the normality assumptions with the Shapiro-Wilk test, normality was not significant across conditions in the negative PANAS ($p < 0.001$), as well as in the control ($p = .013$) and skill ($p = .024$) condition of the positive PANAS and for some across the forgiveness scales. Additionally, Quantile-Quantile plots were used to visually assess the distribution. The visualization of the data highlighted that the assumption of normality was not violating the data as data roughly fell into a straight line, indicating a roughly normal distribution. In general, ANCOVA is robust to violations of normality, so with the non-significant values the analysis will be conducted as if the data was normally distributed. So, the assumption for normality is, or at least is, close enough.

Outliers were checked with the Boxplot. Scales such as HSE, identified three outliers, FSE identified two outliers whereas TSC identified two outliers. Outliers were further investigated and not considered as results of errors or anomalies. As we are using ANCOVA as a robust method, the decision was made to keep outliers. Therefore, they were considered valid data points.

Linearity was checked using the Scatterplot between each covariate (of HSE, FSE TSC, positive and negative PANAS) and the dependent variable (days). That is, day 1, day 2, day 3, and follow-up to confirm that the relationship between the covariates and forgiveness might not be the same at all time points. The least linear relationship was found in TSC and the forgiveness outcomes on all days, which is explained by the general inherent non-linear relationship of both variables, e.g. as trait self-control changes the change in forgiveness outcome might not be constant. As the scatterplot indicated a left-side distributed graph of the relationship between negative PANAS and all forgiveness scores, it indicates that most people indicated initial low negative affect scores. The opposite happened with the PANAS positive. Generally, the scatterplot indicated a roughly linear relationship across the forgiveness outcomes over time and the covariates.

The absence of Multicollinearity among covariates was checked with the linear regression analysis among all variables. The Variance Inflation Factor (VIF) was used to check for multicollinearity. A value greater than 10 indicates high multicollinearity (Field, 2013). As no VIF greater than 3.5 was found, there does not seem to be a multicollinearity concern among the predictors.

All assumptions were checked and concluded to be (roughly) met and as such the repeated measures ANCOVA was conducted.

Hypotheses Testing Results

Firstly, a repeated measures ANCOVA with a between-subjects and a within-subjects factor was conducted. The within-subjects factor was days, that is, the times when the intervention took place (day 1, day 2, day 3, follow-up), and the between-subject factor was the condition (control, skill, and knowledge and skill).

Descriptive Statistics

The control condition had 45 participants, the skill condition had 35 participants, and the knowledge + skill condition had 38 participants. Co-variables were the TSC, FSE, HFS, and the positive and negative PANAS. The forgiveness scale means reveal that generally, the means were highest on day 1, and lowest on day 2. Day 3 did not reveal a big difference from day 1, as seen in Table 3.

Table 3: Means & standard deviations - Conditions

	Condition	Mean	SD	N
Q1 FS	control	3,6000	1,58262	45
	skill	3,4679	1,64979	35
	knowledge + skill	3,9211	1,50882	38
	Total	3,6642	1,57714	118
Q2 FS	control	3,2639	1,71043	45
	skill	3,0893	1,62176	35
	knowledge + skill	2,7730	1,13597	38
	Total	3,0540	1,52170	118
Q3 FS	control	3,5083	1,78424	45
	skill	3,1571	1,75952	35
	knowledge + skill	3,8454	1,50798	38
	Total	3,5127	1,69994	118
FU FS	control	3,1750	1,61500	45
	skill	3,4214	1,75422	35
	knowledge + skill	3,3158	1,45215	38
	Total	3,2934	1,59764	118

Main results

The Multivariate Test presents the effects of the within-subject factor (days). Results suggest that the main effect of time (i.e., intervention days) was not significant (Wilk's Lambda = .96, $F_{(3, 108)} = 1.48$, $p = .223$). However, the rate of forgiveness skill change was different

for people with different trait forgivingness levels (Wilks' Lambda = .87, $F_{(3, 108)} = 5.48$, $p = 0.002$). Moreover, the rate of forgiveness skill change from T1 to T4 was different for people in the three study conditions (Wilk's Lambda = .85, $F_{(6, 216)} = 3.07$, $p = 0.007$). That is, there is a significant effect of trait forgivingness and study condition on forgiveness skill over time, such that the means of forgiveness skill over time (the repeated measurement) vary as a function of trait forgivingness and condition. However, the main effect „days“ was not significant.

The Tests of Within Subject Contrasts shows that the linear contrast for days is statistically not significant, $F_{(1, 110)} = 3.44$, $p = .066$. This suggests that while there is a trend towards a linear change in forgiveness over time, this trend is not statistically significant at the typical 0.05 level. The change in forgiveness over time is significantly influenced by HFS, both linearly $F_{(1, 110)} = 9.39$, $p = .003$ and cubically $F_{(1, 110)} = 6.29$, $p = .014$. The cubic trend of forgiveness over time is significantly influenced by study condition, $F_{(2, 110)} = 7.27$, $p = .001$, indicating a complex evolution of forgiveness across conditions over time. The complete Tests of Within Subjects Contrasts can be found in Appendix 5.

The Tests of Between-Subjects Effects present an analysis of whether there are differences in the means of the dependent variable (in this case, forgiveness skill aggregated across all days, that is, transformed into its average). The following variables have significant effects on the aggregate variable of forgiveness skill over time: HFS, $F_{(1,110)} = 3.22$, $p = .012$; FSE, $F_{(1,110)} = 8.51$, $p = .004$; and positive affect $F_{(1,110)} = 15.95$, $p = <.001$. However, the main effect of the study condition on the average forgiveness skill score across time is not statistically significant $F_{(2,110)} = .24$, $p = .787$. The table of the Test of Between-Subjects Effects can be found in Appendix 6.

The Pairwise Comparisons table for the conditions presents the results of the post-hoc tests and determines whether there are statistically significant differences in the aggregate means of forgiveness skill across conditions. As Table 4 shows, none of the pairwise comparisons between study conditions (control, skill, knowledge + skill) shows statistically significant differences in aggregate forgiveness skill, meaning that forgiveness skill was not significantly different across condition. Table 5 shows the Pairwise Comparison between the

different days (day 1, day 2, day 3, follow-up day). Results suggest that day 1 had significantly higher scores for forgiveness skill than day 2 and the follow-up day. This could indicate that initial reactions to the training were strong but did not maintain. The results on day 3 showed significantly higher scores again than day 2, which could be an indicator that the effects of the training were delayed.

Table 4: *The Pairwise Comparison aggregated forgiveness skill over time*

(I) cond	(J) cond	Mean Difference (I-J)	Std. Error	Sig. ^a	95% Confidence Interval for Difference ^a	
					Lower Bound	UpperBound
control	skill	,164	,242	1,000	-,424	,751
	knowledge + skill	,043	,237	1,000	-,534	,620
skill	control	-,164	,242	1,000	-,751	,424
	knowledge + skill	-,121	,251	1,000	-,731	,490
knowledge + skill	control	-,043	,237	1,000	-,620	,534
	skill	,121	,251	1,000	-,490	,731

Based on estimated marginal means

a. Adjustment for multiple comparisons: Bonferroni.

Table 5: *The Pairwise Comparison days*

(I) Days	(J) Days	Mean Difference (I-J)	Std. Error	Sig. ^a	95% Confidence Interval for Difference ^a	
					Lower Bound	UpperBound
1	2	,616*	,109	<,001	,325	,908
	3	,157	,128	1,000	-,187	,500
	4	,352*	,129	,043	,007	,698
2	1	-,616*	,109	<,001	-,908	-,325
	3	-,460*	,118	<,001	-,776	-,143
	4	-,264	,138	,347	-,635	,106
3	1	-,157	,128	1,000	-,500	,187
	2	,460*	,118	<,001	,143	,776
	4	,195	,140	,997	-,181	,572
4	1	-,352*	,129	,043	-,698	-,007
	2	,264	,138	,347	-,106	,635
	3	-,195	,140	,997	-,572	,181

Based on estimated marginal means

a. Adjustment for multiple comparisons: Bonferroni.

Figures 2 and 3 will give substance and meaning to the analysis of the Pairwise Comparison Tables. Figure 2 shows no linear trend in the progression of forgiveness skill over time. Figure 3 provides a graphic snapshot of each condition's performance on each day (control, skill, knowledge + skill on day 1, day 2, day 3, and follow-up day). Day 1, for all conditions, indicated a higher aggregated mean of the forgiveness scale for all conditions than on day 2. On day 2 all conditions indicated a low forgiveness skill, which increased again on day 3. The pattern reverses for the follow-up, where participants in the forgiveness skill training only condition attained the highest forgiveness skill level (however, as indicated above, the main effect of condition was not significant).

Taken together, results suggest that both hypothesis 1 (H1) and hypothesis w (H2) are not supported.

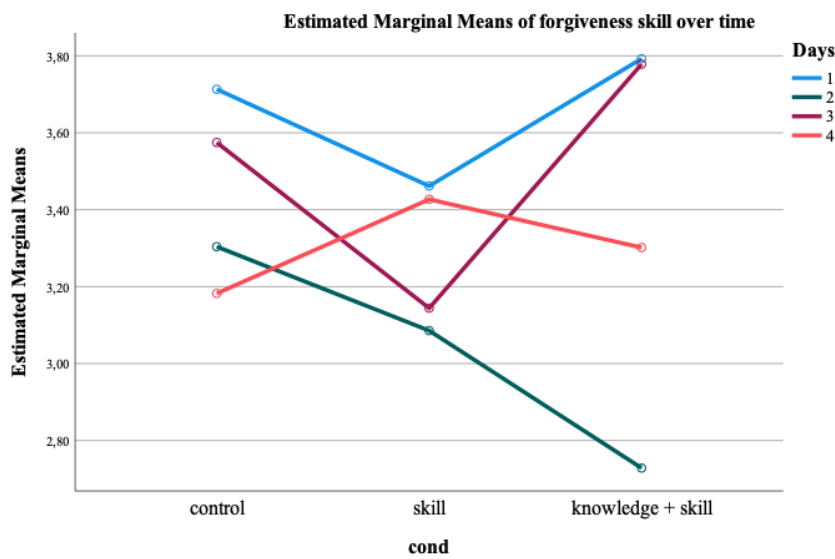


Figure 2: Forgiveness skill over time per condition

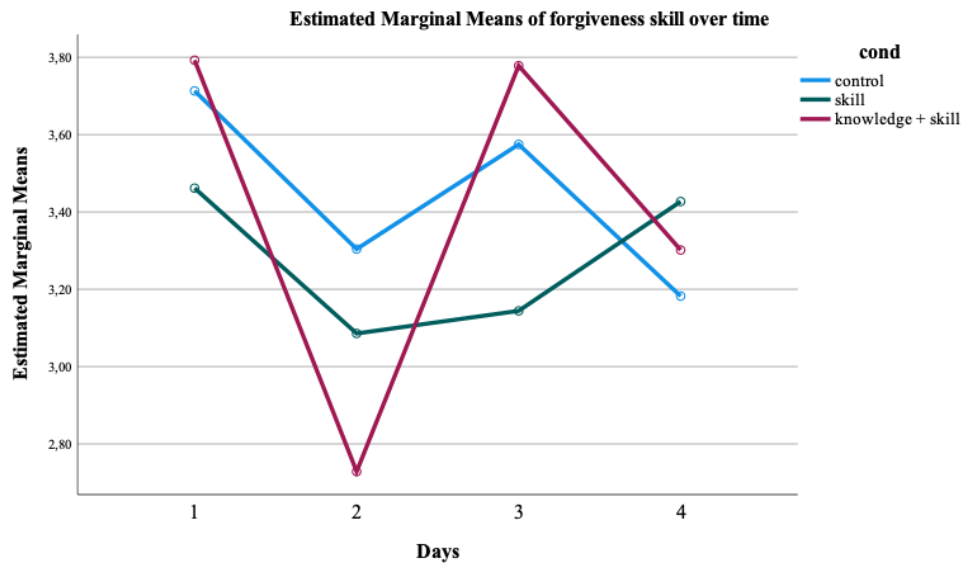


Figure 3: Forgiveness skill over time per day

Covariates appearing in both models are evaluated at the following values: Scale HSE mean = 4,8828, Scale FSE mean = 4,3929, Scale TSC mean = 5,2021, Scale +PANAS mean = 4,7458, Scale -PANAS mean = 1,752.

Discussion

The purpose of this study was to experimentally investigate to what extent an expressive writing intervention training reappraisal influences forgiveness skill over time in the workplace context, building upon previous work that examined forgiveness as a trait, as a response to specific offences, and, most recently, as a form of emotion regulation (Riek & Mania, 2012; Worthington et al., 2015; Brady et al., 2023). In addition, this study also investigated if and to what extent baseline ability to forgive, in the form of trait forgivingness, trait self-control, and trait self-efficacy have an influence on forgiveness skill over time.

Impact of time

The overall idea of analyzing forgiveness as a skill establishes a relatively new perspective on the management of social transgression in an organizational context, although this study did not find significant differences across conditions. Nevertheless, it can be highlighted that the combined approach of knowledge + forgiveness skill training had the highest effect on participants' initial forgiveness skill (i.e., on day 1), as well as on day 3. This training method might be the most holistic, addressing both understanding and the practical application of forgiveness.

Since the difference in the rate of forgiveness skill change from day 1 to follow-up are different for people in the 3 conditions and the trend is cubic, it suggests that the intervention (especially forgiveness skill and forgiveness knowledge + skill) might have introduced certain mechanisms that changed the trajectory of forgiveness across different writing sessions. For instance, initially, there might have been a surge in forgiveness after the training, followed by a decline as the immediate effects wore off, and then another increase as the long-term benefits of the training set in.

Indeed, the findings indicated significant differences in the measured forgiveness outcome across the days of the intervention. Day 1 and day 2 showed the most noticeable difference. The high effect on day 1 might be caused due to the novelty and exposure to the training, leading to excitement about the unknown and a higher engagement at the beginning of the

intervention. However, on day 2, forgiveness scores dropped across all conditions, followed by a subsequent recovery on day 3. By the follow-up day, all forgiveness outcomes approximately came closer to those of day 1. Although the scores rebounded, they did not reach the initial levels observed on day 1. While differences in forgiveness outcomes were not statistically significant, the trend observed is worth further exploration as e.g., the drop on day 2 across all conditions could have different underlying external and uncontrolled factors. Potentially, it could have caused frustration or fatigue to write about a similar scenario and receive the same instructions. The recovery observed on day 3 across all conditions could further indicate that the scenario on day 2 was not equal to the scenarios on the other days.

Impact of reappraisal

Building on prior research that demonstrated the therapeutic effects of expressive writing and reappraisal (Golding et al., 2008; Denson et al., 2012), this study implemented an emotion regulation training strategy to facilitate a deeper emotional process of forgiveness and to provide a method for participants to reinterpret and manage their emotions.

The control condition did not use the reappraisal strategy, instead asking participants to write about their motivation on the scenario situation – that is, to write under instructions that are expected to be unrelated to forgiveness. The results indicated higher forgiveness skill for the control condition on days 1-3 than in the forgiveness skill training only condition. Thus, reappraisal was not supported as an effective method for the purpose of this research. Alternatively, it is possible that the motivation instructions had stronger effects on forgiveness than anticipated, for example by empowering participants to perceive themselves in control of the situation. This possibility could be investigated by future research.

Distinction between knowledge, skill and ability

Drawing from Attewell (1990) and Stanley & Williamson (2017), knowledge is necessary in order to obtain a skill. In the context of forgiveness, acquiring declarative knowledge about forgiveness, as done in the forgiveness knowledge + skill training condition, sets the

foundation for developing procedural knowledge and further enables individuals to apply forgiveness strategies across various situations. However, our findings did not find a statistically significant difference across the conditions. The forgiveness knowledge might need more detailed content or more time (days) in which knowledge about forgiveness is presented and can be maintained. Previous research already highlighted the subtle difference between skills and abilities, e.g., weightlifting (Stanley & Williamson, 2017). This difference may have profound implications when it is applied to the concept of forgiveness. While the act of forgiving could be improved and refined as a skill, some individuals might naturally have a higher ability to forgive, which could impact the effectiveness of the intervention. Indeed, the baseline ability to forgive that individuals bring to the intervention, tested with the HSE, FSE and TSC at the start of Q1, appears to have an effect and be significant for HSE and FSE (albeit not TSC). Apparently, the random assignment did not fully work out to even out these differences, but it can inform about the need to control for this variable in the future or to create different interventions for people that have different levels of baseline abilities of forgiveness.

Limitations and suggestions for future research

Although these findings provide insights that could be used to create organizational forgiveness skill training programs, there are several limitations of this study, starting with pilot testing. For example, the scenarios used in this research were not pilot tested prior to the intervention exposure, possibly leading to higher exposure of error susceptibility and possibly less validity of the intervention (Harris & Thoresen, 2006).

The online format might have allowed having a large and more diversified sample group but introduced challenges within the intervention, such as the lack of a controlled environment. The 5-minute writing task had a timer that did not automatically advance participants to the next page of the questionnaire, potentially leading to inconsistent duration among participants. Also, the relatively large drop off rate from day 1 to day 2 could underlie potential frustration and the bias of response fatigue from repetitive and potentially too similar scenarios and instructions that could provide less thoughtful responses and might have impacted the non-linear development of forgiveness skills over time. Additionally, the main questionnaires and expressive writing tasks with similar scenarios were conducted within the time of one week and did not allow for an analysis of long-term effects. Future research should aim to diversify offence scenarios, while ensuring to maintain the same level of relevance and enhance participant's engagement, reducing potential fatigue. Further, it would be interesting to see if the observed effects over a more extended period of time validate the mechanism as the long-term benefits of the training may need more time to set in.

This research used the same scale (self-reported measure) to measure forgiveness across all days, which could lead to habitual and biased responses, reducing the variability and reliability of the data. To mitigate potential biases, future research could consider employing multiple measures to capture the construct of forgiveness skill over time. Also, the provided information on forgiveness in the knowledge + skill condition could have not been powerful enough, as previous research already mentioned, and interventions with different formats (video, audio) could have been more appropriate for the study (Harris & Thoresen, 2006).

Trait forgivingness, forgiveness self-efficacy, and trait self-control were considered as baseline abilities and suggest fundamental, relatively stable characteristics that individuals bring into a given situation. Although baseline ability was measured with the help of different scales, such as HFS, FSE, TSC, the extent to which these relate to forgiveness skill might need further exploration (Worthington et al., 2015; Stanley & Williamson, 2018; Tornquist & Miles, 2023). However, controlling for the stability of these traits also post-intervention could have truly confirmed the baseline ability of the participants that does not change by interventions.

Previous research used the method of essay coding in order to analyze participants' writings qualitatively and search for emotional components and categorize those (Barclay & Saldanha, 2016). This research only assessed the forgiveness skill outcome using a forgiveness scale at the end of each scenario but did not analyze the writing with regard to its qualitative nature. Future studies using emotional regulation strategies such as expressive writing and reappraisal could employ such qualitative methods used by Barclay & Saldanha (2016) to gain deeper insights into participants' forgiveness skill development processes. Generally, it would be interesting to hold a similar intervention design in person to address some of this study's limitations and further dive into the complex interplay of factors that influence forgiveness and its related constructs.

Conclusion

This study builds on previous research on forgiveness but establishes a new perspective by examining forgiveness as a trainable skill in an organizational context. By introducing emotional regulation strategies this study offers promising avenues to enhance interpersonal workplace dynamics and a harmonious organizational environment, ultimately leading to more productivity across the workplace culture.

Even though there were no significant differences across conditions, the results of this study indicated a non-linear progression of forgiveness skill over time. Although day 1 indicated the highest forgiveness outcomes across all conditions, on day 2 a sharp drop was observed, irrespective of the conditions. Potential external factors or the nature of the scenario itself might have impacted the results. On day 3, participants forgiveness skill levels recovered. The follow-up after 18 days showed somewhat different results, given that the control condition had the lowest skill level across all conditions. However, forgiveness skill across condition were non-significant.

The combined approach of knowledge + skill training in forgiveness seemed to be promising, especially when initiated, but over time the conditions did not yield significantly different outcomes. Though, it might be beneficial to revisit the scenario and instructions for day 2 given its drop across all conditions.

In cases of workplace transgression, emotion-regulation strategies such as reappraisal introduce a valuable tool for organizations. However, reappraisal, as an emotion regulation strategy, did not establish its efficacy in the context of this study. Importantly, baseline abilities, particularly, trait forgivingness and self-efficacy, seemed to influence forgiveness outcomes, highlighting the need to account for individual differences in future scenarios. For future research, the online format, lack of pilot testing, potential scenario monotony, and the consistent use of the same self-reported measure across days are areas for refinement. Moreover, the qualitative depth of the writing exercises was not explored, a dimension that future studies could benefit from.

In summary, the results did not support a linear progression of forgiveness skill over time, highlighting the complex nature of forgiveness itself. It is challenging to explore forgiveness as a construct, to look behind the general understanding, adapt it to an organizational context, and perceive the impact of knowledge and skill, the deep intertwining with traits, emotion regulation strategies and other external factors.

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Appendices

Appendix 1: Demographic information of participants

	N	Minimum	Maximum	Mean	Std. Deviation
Age	118	22	73	42,6949	12,18273

Gender

	Frequency	Percent	Valid Percent
Male	69	58,5	58,5
Female	48	40,7	40,7
Other, please specify:	1	,8	,8

Ethnic identity

White/Caucasian	95	80,5	80,5
Asian/Asian-American	4	3,4	3,4
Black/African-American	10	8,5	8,5
Hispanic	7	5,9	5,9
Other, please specify:	2	1,7	1,7
Total	118	100,0	100,0

Highest education achieved

High school diploma	17	14,4	14,4
Some college	22	18,6	18,6
College degree	52	44,1	44,1
Master's degree or higher	27	22,9	22,9
Total	118	100,0	100,0

Working hours per week

8 or less	1	,8	,8
12	1	,8	,8
15	1	,8	,8
16	1	,8	,8
25	2	1,7	1,7
26	1	,8	,8
30	3	2,5	2,5
34	1	,8	,8
35	5	4,2	4,2
36	1	,8	,8
38	2	1,7	1,7
39	1	,8	,8
40	70	59,3	59,3
41	1	,8	,8
42	2	1,7	1,7
43	2	1,7	1,7

45	11	9,3	9,3
46	1	,8	,8
48	2	1,7	1,7
50	7	5,9	5,9
54	1	,8	,8
62	1	,8	,8
Total	118	100,0	100,0

Weekly working hours on site

8 or less	29	24,6	25,0
10	2	1,7	1,7
12	2	1,7	1,7
15	1	,8	,9
16	1	,8	,9
18	1	,8	,9
20	5	4,2	4,3
24	6	5,1	5,2
25	3	2,5	2,6
28	1	,8	,9
30	10	8,5	8,6
32	1	,8	,9
35	5	4,2	4,3
36	1	,8	,9
38	3	2,5	2,6
40	36	30,5	31
45	5	4,2	4,3
48	1	,8	,9
50	2	1,7	1,7
58	1	,8	,9
Total	116	98,4	100,0

Tenure in current organization

1 or less	7	5,9	5,9
2	10	8,5	8,5
3	13	11,0	11,0
4	6	5,1	5,1
5	10	8,5	8,5
6	11	9,3	9,3
7	12	10,2	10,2
8	7	5,9	5,9
9	6	5,1	5,1
10	2	1,7	1,7
11	2	1,7	1,7
12	6	5,1	5,1
13	3	2,5	2,5
14	4	3,4	3,4
15	2	1,7	1,7

17	1	,8	,8
18	3	2,5	2,5
20	3	2,5	2,5
21	1	,8	,8
23	1	,8	,8
25	2	1,7	1,7
26	1	,8	,8
28	1	,8	,8
29	1	,8	,8
30	1	,8	,8
32	1	,8	,8
38	1	,8	,8
Total	118	100,00	100,00

Occupation

Architecture and Engineering	2	1,7	1,7
Business and Financial Operations	7	5,9	5,9
Community and Social Services	3	2,5	2,5
Computer and Mathematical	18	15,3	15,3
Construction and Extraction	4	3,4	3,4
Education, Training and Library	11	9,3	9,3
Farming, Fishing & Forestry	2	1,7	1,7
Food Preparation and Service Related	2	1,7	1,7
Healthcare	11	9,3	9,3
Installation, Maintenance and Repair	2	1,7	1,7
Legal	3	2,5	2,5
Life, Physical, and Social Science	4	3,4	3,4
Management	10	8,5	8,5
Office & Administration Support	9	7,6	7,6
Personal Care and Service	1	,8	,8
Production	2	1,7	1,7
Protective Service	1	,8	,8

Sales and Related	12	10,2	10,2
Transportation & Material Moving	5	4,2	4,2
Other, please specify:	9	7,6	7,6
Total	118	100,00	100,00

Appendix 2: Scales

Trait self-control

Please indicate to what extent the following statements apply to you in general.

Statement	Scale 1-7
1. I am good at resisting temptation.	
2. I have a hard time breaking bad habits. (-)	
3. I am lazy. (-)	
4. I say inappropriate things. (-)	
5. I do certain things that are bad for me, if they are fun. (-)	
6. I refuse things that are bad for me.	
7. I wish I had more self-discipline. (-)	
8. People would say that I have iron self-discipline.	
9. Pleasure and fun sometimes keep me from getting work done. (-)	
10. I have trouble concentrating. (-)	
11. I am able to work effectively toward long-term goals.	
12. Sometimes I can't stop myself from doing something, even if I know it is wrong. (-)	
13. I often act without thinking through all the alternatives. (-)	

Trait forgivingness

Please indicate to what extent the following statements apply to you in general.

Statement	Scale 1-7
1. I continue to punish a person who has done something that I think is wrong. (-)	
2. With time I am understanding of others for the mistakes they've made.	
3. I continue to be hard on others who have hurt me. (-)	
4. Although others have hurt me in the past, I have eventually been able to see them as good people.	
5. If others mistreat me, I continue to think badly of them. (-)	
6. When someone disappoints me, I can eventually move past it.	
7. To ensure everyone is keeping up with instructions, select option two in this item.	

Forgiveness self-efficacy

Please indicate to what extent the following statements apply to you in general.

Statement	Scale 1-7
I can think about the offender without feeling hurt and/or angry.	
I hold myself accountable for the hurt and/or angry feelings that arise when I think about the interpersonal offense.	
I can think of the offender with compassionate understanding.	
I can think about the offender and remain calm and peaceful.	
I can think about the interpersonal hurt without blaming the offender for what happened.	
I can think about the offender and understand why they acted as they did.	
I can forgive the offender.	
I can think about what the offender did without thinking that it was directed at me personally.	
I can go an entire day without feeling angry at the offender.	
I can go an entire week without feeling hurt by the offender.	
When I experience hurt and/or angry feelings toward the offender I use techniques that successfully sooth my distress.	
I can take responsibility for the angry thoughts that arise toward the offender.	
I can go an entire day without feeling hurt by the offender.	
I can go an entire week without feeling angry at the offender.	

Filler items

Please indicate the extent to which you feel that you can complete the following tasks in general. In general, in my day-to-day life...

Statement	Scale 1-7
I am capable of organizing my tasks and responsibilities effectively.	
I am capable of finding pleasure in everyday activities.	
I do not speak English.	
I am confident in my ability to approach problems with a positive mindset.	
I am confident in managing moments of sadness and anxiety.	

PANAS

Please respond to each statement based on how you feel in general.

Statement	Scale 1-7
Inspired	
Alert	
Excited	
Enthusiastic	
Determined	

Afraid	
Upset	
Nervous	
Scared	
Distressed	

Forgiveness outcome scale

Please indicate to what extent the items below represent how you currently feel about Alex.

1. I let go of the negative feelings I had against (enter name of colleague).	Aquino et al. (2006) Forgiveness scale
2. I let go of my anger against (enter name of colleague).	Aquino et al. (2006) Forgiveness scale
3. I let go of my hurt.	Aquino et al. (2006) Forgiveness scale
4. I let go of the resentment I felt toward (enter name of colleague).	Aquino et al. (2006) Forgiveness scale
5. I let go of my pain.	Aquino et al. (2006) Forgiveness scale
6. I have positive feelings toward (enter name of colleague).	added positive emotion
7. I feel empathy toward (enter name of colleague).	added empathy
8. I feel compassion toward (enter name of colleague).	added compassion

Appendix 3: Scenarios and instructions across all questionnaires and conditions

Scenario 1:

Please read the scenario below extremely carefully and imagine that it is actually happening to you. Really try to imagine yourself in the situation. It is important that you fully understand it before proceeding with the questionnaire.

You are an employee in a large advertising agency. Another employee, Sam, falsely claimed credit for a successful marketing campaign that was actually developed by you. Although your supervisor eventually understood that Sam lied, and put an incident report

in Sam's employee record, it was too late for you to receive the company's top yearly bonus that would otherwise have been yours.

Scenario 2:

Please read the scenario below extremely carefully and imagine that it is actually happening to you. Really try to imagine yourself in the situation. It is important that you fully understand it before proceeding with the questionnaire.

You work at a prestigious law firm as an attorney. A colleague named Taylor spread false information about your legal research, claiming that you had made significant errors in a high-profile case. This misinformation led to doubts about your competence within the firm. Although the truth eventually came to light and Taylor's actions were addressed, the damage to your reputation had already affected your chances of being assigned to more challenging cases and progressing in your career.

Scenario 3:

Please read the scenario below extremely carefully and imagine that it is actually happening to you. Really try to imagine yourself in the situation. It is important that you fully understand it before proceeding with the questionnaire.

You are a project manager at a software development company. Another employee, Alex, sabotaged a critical coding project by introducing bugs and errors, causing delays and frustrations for the entire team. Eventually, it became clear that Alex was responsible for the problems, but the damage was already done. While Alex faced consequences, the project's setbacks meant that you missed out on a promotion opportunity that you had been working towards.

Next page for all three days:

Forgiveness Knowledge + Skill Training Condition (instructions for scenario 1 – 3):

We will now ask you to write for 5 minutes about the scenario you have just read.

As you think about this situation under the writing instructions below, please keep in mind that forgiveness can be a possible response in situations such as these.

Writing instructions

Today, we ask you to please think about this specific situation from the perspective of a neutral third party who wants the best for all involved; a person who sees things from a neutral point of view.

How might this person think about the disagreement?

How might he or she find the good that could come from it?

How might taking this perspective help you make the best of this situation?

You have five minutes to let your words flow freely as you immerse yourself in the exercise. Remember, everything you write is private and confidential. You don't need to stress about spelling, sentences, or grammar. Just keep writing until your time is finished.

Forgiveness Skill Training Condition (instructions for scenario 1 – 3):

We will now ask you to write for 5 minutes about the scenario you have just read.

Writing instructions

Today, we ask you to please think about this specific situation from the perspective of a neutral third party who wants the best for all involved; a person who sees things from a neutral point of view.

How might this person think about the disagreement?

How might he or she find the good that could come from it?

How might taking this perspective help you make the best of this situation?

You have five minutes to let your words flow freely as you immerse yourself in the exercise. Remember, everything you write is private and confidential. You don't need to

stress about spelling, sentences, or grammar. Just keep writing until your time is finished.

Ready? Please go to the next page to start writing.

Control condition (instructions for scenario 1-3):

We will now ask you to write for 5 minutes about the scenario you have just read.

Writing instructions

Today, we ask you to please think about your motivation in this specific situation.

How do you stay motivated, what are your personal tactics?

Please stay focused on the facts and details, without diving into your emotions. Keep it purely objective and descriptive.

You have five minutes to let your words flow freely as you immerse yourself in the exercise. Remember, everything you write is private and confidential. You don't need to stress about spelling, sentences, or grammar. Just keep writing until your time is finished.

Ready? Please go to the next page to start writing.

Scenario 4 (after 15 days):

Please read the scenario below extremely carefully and imagine that it is actually happening to you. Really try to imagine yourself in the situation. It is important that you fully understand it before proceeding with the questionnaire.

You hold a managerial position at a consultancy company. A co-worker Casey, who is responsible for managing an important client account at the large consultancy, mismanages the budget, resulting in overspending and missed deadlines. The client is furious, and your team must work tirelessly to salvage the relationship. Despite your efforts, the client decides to cancel the contract, resulting in financial losses for the company.

Appendix 4: Knowledge condition - Input

Day1

Do you know what forgiveness means? Please read carefully:

Forgiveness is a **process that involves regulating the emotions that we feel towards someone who has hurt or offended us**, such that **negative feelings are decreased and, at times, positive feelings towards the other person are increased.**

Engaging in a process of forgiveness is a deeply personal matter. In other words, **forgiveness is a voluntary choice – one that we are free to pursue or not to pursue**, and that can never be forced upon us.

It is also important to highlight that **forgiveness can take time**. How long that process takes depends on each person and situation, and people can have changes of heart along the way.

Day 2

On the last survey we gave you some information about forgiveness.

We mentioned that **forgiveness involves an emotional change** towards someone who hurt us, that **forgiveness is a choice people are free to pursue or not**, and that **it can take time to forgive.**

Please read carefully for more information:

When an interpersonal offense occurs, we often feel hurt, pain, anger, and resentment. We have the right to be treated humanely and with respect, so these feelings are only natural.

Thus, forgiveness may not always come easy, and the act that hurt or offended us may remain with us for a long time. In fact, forgiveness doesn't mean forgetting or excusing the harm done to us. Nor does it necessarily mean making up or reconciling with the person who caused the harm, as reconciliation may not be possible or appropriate in all circumstances.

But even when it seems difficult, forgiveness is often possible, and voluntarily working on forgiveness can lessen that harm's grip on us.

Day 3

On the last survey we gave you some information about forgiveness.

We mentioned that while **we often feel hurt and angry** after an interpersonal offense, **forgiveness can help us overcome the grip** that the harm may have on us **without condoning it and without necessarily involving reconciliation**.

Please read carefully for more information:

While keeping in mind that engaging in a process of forgiveness always involves a deeply personal choice, and it may not always be possible, forgiveness can be beneficial for a variety of reasons.

For example, it can **help us see the other person's inherent worth, and to accept that they are human and liable to failure**. In some circumstances, it can lead to a renewed relationship.

Forgiveness can also **promote our own mental health**, including reduced stress and anxiety and enhanced well-being. It can **propel us forward** rather than keeping us emotionally engaged in the offense, **freeing us from its grip**.

Modeling forgiveness for others may inspire them to also respond prosocially in similar situations, and over time even lead to societal improvement.

Appendix 5: Tests Within Subject Contrasts:

Dependent measure	Sum of Sq.	df	Mean Sq.	Sum of Sq.	F	Sig.
Days	Linear	3,499	1	3,499	3,441	,066
	Quadratic	1,921E-5	1	1,921E-5	,000	,997
	Cubic	,507	1	,507	,669	,415
Days * HFS	Linear	9,553	1	9,553	9,394	,003
	Quadratic	,345	1	,345	,325	,570
	Cubic	4,767	1	4,767	6,287	,014
Days * FSE	Linear	,047	1	,047	,046	,831
	Quadratic	3,069	1	3,069	2,895	,092
	Cubic	,543	1	,543	,716	,399
Days * TSC	Linear	,096	1	,096	,094	,759
	Quadratic	,005	1	,005	,005	,946
	Cubic	,006	1	,006	,008	,929
Days * + PANAS	Linear	,145	1	,145	,143	,706
	Quadratic	,702	1	,702	,662	,418
	Cubic	,055	1	,055	,073	,787
Days * - PANAS	Linear	,218	1	,218	,215	,644
	Quadratic	,114	1	,114	,108	,743
	Cubic	,205	1	,205	,271	,604
Days * cond	Linear	1,703	2	,852	,837	,436
	Quadratic	2,491	2	1,245	1,175	,313
	Cubic	11,025	2	5,512	7,270	,001
Error(Days)	Linear	111,860	110	1,017		
	Quadratic	116,596	110	1,060		
	Cubic	83,402	110	,758		

a. Computed using alpha = ,05

Appendix 6: Test of Between-Subjects Effects

Dependent measure	Sum of Sq.	df	Mean Sq.	F	Sig.
Intercept	14,461	1	14,461	3,223	,075
HFS	28,989	1	28,989	6,461	,012
FSE	38,192	1	38,192	8,513	,004
TSC	,767	1	,767	,171	,680
+ PANAS	71,549	1	71,549	15,948	<,001
- PANAS	1,566	1	1,566	,349	,556
Cond	2,151	2	1,075	,240	,787
Error	493,513	110	4,486		

a. Computed using alpha = ,05

Forgiveness Skill - Day 1, all conditions

Start of Block: Consent form

cf

Consent form

The present questionnaire is part of a **three-part research study** about people's reactions to workplace offenses. The study is being conducted by Alessa Loewe as part of her MSc degree requirements, and by Dr. Maria Francisca Saldanha (a faculty member at Católica-Lisbon School of Business and Economics).

Information

In this study, we seek to examine the effects of writing about workplace offenses.

Participation in the study involves the completion of three surveys, each containing a short questionnaire, a fictional workplace scenario, and 5-minute writing task based on the scenario. We may also invite you an additional survey, around two weeks after the completion of these three initial questionnaires.

The **first questionnaire** can be accessed in the next page. It will **take about 13 minutes to complete, and pays 2.2 GBP (approximately 2.8 US dollars)**. Payment for the first questionnaire will be awarded upon its completion.

The **second questionnaire will be available in around 2 days, and the third questionnaire will be available 2 days after the second questionnaire. Both will take about 7 minutes to complete, and pay 1.2 GBP (approximately 1.53 US dollars)**. Payment for the second and third questionnaires will be awarded upon their respective completions.

As indicated on the study advertisement, please proceed to the first questionnaire only if you are available to also respond to the second and third questionnaire.

Confidentiality and anonymity

To protect your anonymity, you will NOT be asked to provide your name, email, or other potentially identifying information. Instead, you will be asked to enter your Prolific ID. Results will only be analyzed in aggregate form.

The investigators who are part of the research team are the only people who will have access to the data. The data file will be stored in the researchers' computers, which are password protected. However, please note that confidentiality cannot be guaranteed while data are in transit over the internet. The researcher acknowledges that the host of the online survey (Qualtrics) may automatically collect participant data without their knowledge (i.e., IP addresses). Although this information may be provided or made accessible, the researcher will not use or save this information without participants' consent. With regard to the publication of the study's results in scientific journals and conferences, all data will be anonymous, and it will not be possible to identify your individual answers. Data will be destroyed five years after the publication of the results.

Your participation in this study is voluntary, and you can skip questions that you consider sensitive.

Contact

If you have questions about the study or the procedures, please contact Dr. Maria Francisca Saldanha via your Prolific account.

consent

Consent

If the preceding information is clear to you, please indicate your consent to participate in this research. By clicking on the "I consent" button below, you understand your rights as a participant and give your consent to participate in this research and to the use of your data for research and publication purposes. If you do not consent to participate in the research, please stop completing the questionnaire.

Please indicate your consent:

- I consent to participate in this study (1)
- I DO NOT consent to participate in this study (2)

PID Please enter your Prolific ID here (please note that this field should auto-fill with the correct ID):

End of Block: Consent form

Start of Block: Pre-intervention questionnaire

	tsc						
	Please indicate to what extent the following statements apply to you in general.						
	1. Not at all (1)	2. (2)	3. (3)	4. Somewhat (4)	5. (5)	6. (6)	7. A great deal (7)
1. I am good at resisting temptation. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. I have a hard time breaking bad habits. (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. I am lazy.
(10)

4. I say
inappropriate
things. (11)

5. I do certain
things that are
bad for me, if
they are fun.
(12)

6. I
refuse things
that are bad
for me. (13)

7. I wish I
had more
self-
discipline.
(14)

8. People
would say
that I have
iron self-
discipline.
(15)

9. Pleasure
and fun
sometimes
keep me from
getting work
done. (16)

10. I have trouble concentrating. (17)

11. I am able to work effectively toward long-term goals. (18)

12. Sometimes I can't stop myself from doing something, even if I know it is wrong. (19)

13. I often act without thinking through all the alternatives. (20)

Page Break

tf

Please indicate to what extent the following statements apply to you in general.

	1. Not at all (1)	2. (2)	3. (3)	4. Somewhat (4)	5. (5)	6. (6)	7. A great deal (7)
1. I continue to punish a person who has done something that I think is wrong. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. With time I am understanding of others for the mistakes they've made. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. I continue to be hard on others who have hurt me. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Although others have hurt me in the past, I have eventually been able to see them as good people. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. If others mistreat me, I continue to think badly of them. (5)

6. When someone disappoints me, I can eventually move past it. (6)

7. To ensure everyone is keeping up with instructions, select option two in this item (7)

Page Break

tfse

Please indicate the extent to which you feel that you can complete the following tasks in general. In general, when someone offends me...

1. Not at all (1)	2. (2)	3. (3)	4. Somewhat (4)	5. (5)	6. (6)	7. A great deal (7)
-------------------	--------	--------	-----------------	--------	--------	---------------------

1. I can think about the offender without feeling hurt and/or angry. (1)

2. I hold myself accountable for the hurt and/or angry feelings that arise when I think about the interpersonal offense. (2)

3. I can think of the offender with compassionate understanding. (3)

4. I can think about the offender and remain calm and peaceful. (4)

5. I can think about the interpersonal hurt without blaming the offender for what happened. (5)

6. I can think about the offender and

understand why they acted as they did. (6)

7. I can forgive the offender. (7)

8. I can think about what the offender did without thinking that it was directed at me personally. (8)

9. I can go an entire day without feeling angry at the offender. (9)

10. I can go an entire week without feeling hurt by the offender. (10)

11. When I experience hurt and/or angry feelings toward the offender I use techniques that successfully sooth my distress. (11)

12. I can take responsibility for the angry thoughts that arise toward the offender. (12)

13. I can go an entire day without feeling hurt by the offender. (13)

14. I can go an entire week without feeling angry at the offender. (14)

Page Break

filler

Please indicate the extent to which you feel that you can complete the following tasks in general. In general, in my day-to-day life...

	1. Not at all (1)	2. (2)	3. (3)	4. Somewhat (4)	5. (5)	6. (6)	7. A great deal (7)
1. I am capable of organizing my tasks and responsibilities effectively. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. I am capable of finding pleasure in everyday activities. (2)

3. I do not speak a word of English (3)

4. I am confident in my ability to approach problems with a positive mindset. (4)

5. I am confident in managing moments of sadness and anxiety. (5)

Page Break

panas

Please respond to each statement based on how you feel in general.

	1. Not at all (1)	2. (2)	3. (3)	4. Somewhat (4)	5. (5)	6. (6)	7. A great deal (7)
1. Inspired (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Alert (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Excited (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Enthusiastic (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5.	Determined (5)	<input type="radio"/>	(()	<input type="radio"/>	((<input type="radio"/>
6.	Afraid (6)	<input type="radio"/>	(()	<input type="radio"/>	((<input type="radio"/>
7.	Upset (7)	<input type="radio"/>	(()	<input type="radio"/>	((<input type="radio"/>
8.	Nervous (8)	<input type="radio"/>	(()	<input type="radio"/>	((<input type="radio"/>
9.	Scared (9)	<input type="radio"/>	(()	<input type="radio"/>	((<input type="radio"/>
10.	Distressed (10)	<input type="radio"/>	(()	<input type="radio"/>	((<input type="radio"/>

End of Block: Pre-intervention questionnaire

Start of Block: Condition: Control

Scenario

Please read the scenario below extremely carefully and imagine that it is actually happening to you.

Really try to imagine yourself in the situation. It is important that you fully understand it before proceeding with the questionnaire.

scenario2

You are an employee in a large advertising agency. Another employee, Sam, falsely claimed credit for a successful marketing campaign that you actually developed. Although your supervisor eventually understood that Sam lied, and put an incident report in Sam's

employee record, it was too late for you to receive the company's top yearly bonus that would otherwise have been yours.



Page Break

control instructions

We will now ask you to write for 5 minutes about the scenario you have just read.

Writing instructions

Today, we ask you to please think about your motivation in this specific situation. How do you stay motivated, what are your personal tactics?

Please stay focused on the facts and details, without diving into your emotions. Keep it purely objective and descriptive.

You have five minutes to let your words flow freely as you immerse yourself in the exercise. Remember, everything you write is private and confidential. You don't need to stress about spelling, sentences, or grammar. Just keep writing until your time is finished.

Ready? Please go to the next page to start writing.



Page Break

control_writing

Please think about your motivation in this specific situation. How do you stay motivated, what are your personal tactics? Please stay focused on the facts and details, without diving into your emotions. Keep it purely objective and descriptive.

timer Timing

First Click (1)

Last Click (2)

Page Submit (3)

Click Count (4)

End of Block: Condition: Control

Start of Block: Condition: Intervention forgiveness skill

scenario Please read the scenario below extremely carefully and imagine that it is actually happening to you.

Really try to imagine yourself in the situation. It is important that you fully understand it before proceeding with the questionnaire.

scenario2 You are an employee in a large advertising agency. Another employee, Sam, falsely claimed credit for a successful marketing campaign that you actually developed. Although your supervisor eventually understood that Sam lied, and put an incident report in Sam's employee record, it was too late for you to receive the company's top yearly bonus that would otherwise have been yours.

Page Break

skill_instructions *We will now ask you to write for 5 minutes about the scenario you have just read.*

Writing instructions

Today, we ask you to please think about this specific situation from the perspective of a neutral third party who wants the best for all involved; a person who sees things from a neutral point of view.

How might this person think about the disagreement? How might he or she find the good that could come from it? How might taking this perspective help you make the best of this situation?

You have five minutes to let your words flow freely as you immerse yourself in the exercise. Remember, everything you write is private and confidential. You don't need to stress about spelling, sentences, or grammar. Just keep writing until your time is finished.

Ready? Please go to the next page to start writing.

Page Break

skill_writing

Please think about this specific situation from the perspective of a neutral third party who wants the best for all involved; a person who sees things from a neutral point of view. How might this person think about the disagreement? How might he or she find the good that could come from it? How might taking this perspective help you make the best of this situation?

timer Timing

First Click (1)

Last Click (2)

Page Submit (3)

Click Count (4)

End of Block: Condition: Intervention forgiveness skill

Start of Block: Condition: Intervention forgiveness skill + knowledge

scenario Please read the scenario below extremely carefully and imagine that it is actually happening to you.

Really try to imagine yourself in the situation. It is important that you fully understand it before proceeding with the questionnaire.

scenario2 You are an employee in a large advertising agency. Another employee, Sam, falsely claimed credit for a successful marketing campaign that you actually developed. Although your supervisor eventually understood that Sam lied, and put an incident report in Sam's employee record, it was too late for you to receive the company's top yearly bonus that would otherwise have been yours.

Page Break

skillK_info

Do you know what forgiveness means? Please read carefully:

Forgiveness is a process that involves regulating the emotions that we feel towards someone who has hurt or offended us, such that negative feelings are decreased and, at times, positive feelings towards the other person are increased.

Engaging in a process of forgiveness is a deeply personal matter. In other words, forgiveness is a voluntary choice – one that we are free to pursue or not to pursue, and that can never be forced upon us.

It is also important to highlight that forgiveness can take time. How long that process takes depends on each person and situation, and people can have changes of heart along the way.

Page Break

skillK_instructions

We will now ask you to write for 5 minutes about the scenario you have just read.

As you think about this situation under the writing instructions below, please keep in mind that forgiveness can be a possible response in situations such as these.

Writing instructions

Today, we ask you to please think about this specific situation from the perspective of a neutral third party who wants the best for all involved; a person who sees things from a neutral point of view.

How might this person think about the disagreement? How might he or she find the good that could come from it? How might taking this perspective help you make the best of this situation?

You have five minutes to let your words flow freely as you immerse yourself in the exercise. Remember, everything you write is private and confidential. You don't need to stress about spelling, sentences, or grammar. Just keep writing until your time is finished.

Ready? Please go to the next page to start writing.

Page Break

Q62

Please think about this specific situation from the perspective of a neutral third party who wants the best for all involved; a person who sees things from a neutral point of view. How might this person think about the disagreement? How might he or she find the good that could come from it? How might taking this perspective help you make the best of this situation?

timer Timing

- First Click (1)
- Last Click (2)
- Page Submit (3)
- Click Count (4)

End of Block: Condition: Intervention forgiveness skill + knowledge

Start of Block: Post-intervention questionnaire

forg

Please indicate to what extent the items below represent how you currently feel about Sam.

1. Not at all (1)	2. (2)	3. (3)	4. Somewhat (4)	5. (5)	6. (6)	7. Very much (7)
-------------------	--------	--------	-----------------	--------	--------	------------------

1. I let go
of the
negative
feelings I
had against
Sam. (1)

2. I let go
of my
anger
against
Sam. (2)

3. I let go
of my hurt.
(3)

4. I let go
of the
resentment
I felt
toward
Sam. (4)

5. I let go
of my pain.
(5)

6. I have
positive
feelings
toward
Sam. (6)

7. I feel
empathy
toward
Sam. (7)

8. I feel
compassion
toward
Sam. (8)



Page Break

Q40

Please indicate to what extent the items below are currently true of yourself.

	1. Not at all (1)	2. (2)	3. (3)	4. Somewhat (4)	5. (5)	6. (6)	7. Very much (7)
1. A sense of contentment, even in difficult times, is something I strive for. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. I make an effort to really understand the others' point of view before I form a judgment. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. I believe in treating all people with kindness and respect, regardless of their circumstances. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

End of Block: Post-intervention questionnaire

Start of Block: Demographics

demog

Please respond to the following questions about yourself

age Your age (in years):

▼ 16 or less (1) ... 99 or more (84)

gen

Your gender:

- Male (1)
- Female (2)
- Other, please specify: (3)

eth

Your ethnic identity:

- White/Caucasian (1)
- Asian/Asian-American (2)
- Black/African-American (3)
- Hispanic (4)
- Other, please specify: (5)

edu

Highest education achieved:

▼ Below high school (1) ... Master's degree or higher (6)

workH

How many hours do you work per week?

▼ 8 or less (1) ... 99 or more (92)

workIP

How many of your weekly working hours do you currently spend working on site, if any?

▼ 8 or less (1) ... 99 or more (92)

ten

Your tenure in your current organization (in years):

▼ 1 or less (1) ... 60 or more (60)

occ Occupation:

- Architecture and Engineering (1)
- Building and Ground Maintenance (2)
- Business and Financial Operations (3)

- Community and Social Services (4)
 - Computer and Mathematical (5)
 - Construction and Extraction (6)
 - Education, Training and Library (7)
 - Farming, Fishing & Forestry (8)
 - Food Preparation and Service Related (9)
 - Healthcare (10)
 - Installation, Maintenance and Repair (11)
 - Legal (12)
 - Life, Physical, and Social Science (13)
 - Management (14)
 - Military (15)
 - Office & Administration Support (16)
 - Personal Care and Service (17)
 - Production (18)
 - Protective Service (19)
 - Sales and Related (20)
 - Student (21)
 - Transportation & Material Moving (22)
 - Other, please specify: (23)
-

Display This Question:

If Occupation: = Other, please specify:

occS

Please specify your occupation:

Page Break

purpose

What do you think is the purpose of this research?

Page Break

useData

In your honest opinion, should we use your data? Please note that you will still receive payment for your participation, regardless of your response to this question.

Page Break

final

Thank you very much for your participation in the first part of the study.

The second questionnaire will be available in approximately two days - that is, on Wednesday. Please keep an eye on your Prolific account for the study ("Research study: Writing about workplace offenses, Part 2").

The second questionnaire will take about 7 minutes to complete, and pay 1.2 GBP (approximately 1.53 US dollars).

Please click "next" to finalize the study.

End of Block: Demographics
