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*Can Anonymous, Positive Feedback From Your Coworkers Give You
More Than Just a Smile? A Mixed-Method Study Evaluating the
Effectiveness of a Gratitude Intervention*

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Abstract

Gratitude, one of the key concepts in the growing field of positive psychology, has been shown to be beneficial for organizations by improving employees' well-being. However, scientific research of gratitude interventions in the organizational field is still scarce. This study examines the effectiveness of a gratitude intervention carried out through the application Listen Léon, an online platform that provides means to send anonymous, descriptive, and positive feedback (*Léons*) to coworkers. Participants ($N = 57$) used Listen Léon within their teams for one month. The present study applied a pre-post mixed methods design to examine if there was an increase in participants' gratitude levels, affective well-being, work performance and prosocial behavior (*H1*) and if the extent to which participants were involved in the intervention had an impact on participants' outcome variables (*H2*) immediately after the intervention. Hypotheses were not supported for the full sample. However, participants who filled out the English questionnaires did reveal a significant increase in gratitude levels and exhibited an association between the amount of sent and received Léons and positive affective well-being. These effects did not manifest for participants who completed the German questionnaire. Nevertheless, qualitative data indicated that participants perceived positive psychological impact throughout the intervention. Potential reasons for language group differences, such as participants' acceptance of the intervention and their age differences, among others, are discussed. The study contributes to filling the gap between science and practice of positive psychology and provides scientific support for the newly established application Listen Léon.

Keywords: positive psychology, gratitude, intervention, workplace well-being, mixed methods

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There is a growing number of interventions based on positive psychology in organizational settings (Donaldson et al., 2019). However, as positive psychology is a comparably young field of research, there is a visible gap between practice and science, meaning that a number of existing interventions based on positive psychology are lacking scientific validation (Niemic, 2018). As adults spend a lot of their time at work, which is recognized as an important stressor affecting mental health (American Psychological Association, 2009), filling this gap in order to establish the most efficient ways of improving mental health of employees, became a pressing goal. Gratitude is one of the key constructs in positive psychology and gratitude-based interventions have been shown to be among the most effective ones (Seligman et al., 2005). The present study expands the research in the field of positive psychology by evaluating the psychological impact of the newly established application *Listen Léon* (<https://listenleon.com/en/>), thus, making a step forward towards filling up the gap between practice and science. Listen Léon is a gratitude-based application which provides means to share appreciation between coworkers and to emphasize their character strengths, this way seeking to improve mental health in organizations. The present study is the first scientific attempt to evaluate the psychological impact of the application.

Theoretical Background

Positive psychology, defined as the study of positive emotion, positive character, and positive institutions (Seligman et al., 2005), is a rapidly growing field of research. Seligman and Csikszentmihalyi (2000) describe positive psychology as the scientific research of “what makes life most worth living” (p. 13). Positive psychology is aiming to expand the existing knowledge in the field of psychology and to establish a balanced view of psychological health. Instead of focusing on weaknesses and trying to correct what is “wrong”, positive psychology devotes attention to what is “right” and builds on already existing resources and strengths, aiming to develop them even further (see Seligman & Csikszentmihalyi, 2000 for the origin of positive psychology).

How Positive Psychology Enhances Well-Being

For many years mental health was seen as an absence of mental illness (Keyes, 2005). However, with the rise of positive psychology, this view has changed. The World Health Organization defines health as “a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively, and is able to

make a contribution to his or her community” (WHO, 2018, Mental Health: Strengthening our Response section). Well-being is generally outlined by positive emotions, engagement, positive relations, meaning and accomplishment (Dubreuil & Forest, 2017). Based on this, positive psychology is aiming to enhance happiness by developing the components of well-being.

The question “*What makes us happy?*” has challenged many researchers. In the first 30 years of subjective well-being research, one of the most surprising findings was that demographic variables seem to be poor predictors for well-being. Only a small proportion of the variance of subjective well-being can be explained by demographics such as age, gender, intelligence, and material situation (DeNeve, 1999; Diener & Ryan, 2009). In general, intrinsic variables, such as one’s mindset, have been proven to be far better predictors of subjective well-being (e.g., DeNeve, 1999; Diener & Ryan, 2009). Mindset is the lens through which we see, react, and respond to the world (Cherkowski, 2018; Yeager & Dweck, 2012). Based on these insights on well-being, it has commonly been argued to focus not on material goods but rather on people’s mindsets in order to increase psychological well-being, thus, establishing a mental positive life orientation (Wood et al., 2010). Research has shown that people’s mindsets are strongly related to their well-being (Ortiz Alvarado et al, 2019). For example, one of the most commonly used positive psychology exercises to influence one’s mindset is to write down three positive experiences from the past (Wood & Tarrier, 2010). By doing so the mind is trained to filter positive aspects and pay less attention to negative experiences (Shaffer, 2012), thus, a greater part of the mind focuses on aspects that contribute to individual’s happiness and therefore well-being (Lyubomirsky et al., 2005). Lasting increases in happiness as well as decreases in depressive symptoms are reported by individuals who continue exercises of this kind beyond one week (Seligman & Steen, 2005). Happiness is defined as a lasting satisfaction with life itself or having mainly positive rather than negative feelings, and consequently being a sense of well-being (Kammann et al., 1984). Lyubomirsky et al. (2005) found that happy people tend to be healthier, have higher success across multiple life domains, such as higher work performance and income, and are socially more engaged. The researchers also suggested that this causal direction runs in both ways, stating that success makes people happy but also that success is engendered by positive affect (Lyubomirsky et al., 2005). Happiness increases the likelihood of recognizing and interpreting aspects of life as positive and successful (Emmons & McCullough, 2003; Lyubomirsky et al., 2005). Training the mind to filter for the positive things in life is an

attitude that is eventually internalized and becomes a life orientation (Wood et al., 2010). Thus, investigating means which enhance the focus on positives rather than negatives, as the main objective of positive psychology, would contribute to greater possibilities of increasing mental health.

Gratitude and Well-Being

Gratitude has been the focus of interest for centuries and there have been many books written about its importance, but only two decades ago the concept appeared in the scientific literature, together with the rise of positive psychology (Emmons & Shelton, 2002). Wood et al. (2010) define gratitude as an “orientation towards noticing and appreciating the positive in the world” (p. 891). Gratitude is recognized at both state and trait levels. State gratitude is a temporary feeling of gratitude led by particular events or circumstances, while trait gratitude is defined as a dispositional characteristic of the average experience of gratitude (Wood et al., 2008). There is a great amount of research supporting the positive relation between gratitude and subjective well-being (Emmons & McCullough, 2003; Lin & Yeh, 2014). People with higher levels of trait gratitude show higher subjective well-being and in general tend to be happier (Emmons & McCullough, 2003). Studies show that increasing one’s state gratitude leads to an immediate increase in positive affect (Wood et al., 2010) and practicing to be grateful for a longer time can have long-lasting results by building positive strengths (Măirean et al., 2019) and coping resources such as self-esteem and resilience (Klibert et al., 2019).

The practice of gratitude can be especially important when applied in workplaces as they are often a great source of stress in one’s life (American Psychological Association, 2009). Gratitude in occupational settings means focusing on what could be appreciated in one’s work life (Kaplan et al., 2014). Empirical studies have demonstrated that promoting gratitude has a positive effect on people’s life satisfaction, level of positive affect and prosocial behavior (Emmons & McCullough, 2003; Stegen & Wankier, 2018). Latter is defined as a positive behavior towards others (Yost-Dubrow & Dunham, 2018). Gratitude has been shown to play a crucial role in the maintenance of interpersonal relationships and by expressing gratitude people demonstrate appreciation and recognition towards each other (Berger, 1975). Showing gratitude to others not only has a positive effect on one’s own well-being but it also induces acceptance from peer colleagues (Layous et al., 2012). Furthermore, as positive emotions are contagious (Fredrickson, 2000), promoting gratitude at the individual level can expand throughout teams

and even organizations. Thus, showing gratitude to coworkers is a way to foster positive affect and behaviors, such as prosocial behaviors at work (Yost-Dubrow & Dunham, 2018).

Positive Psychology Interventions

Interventions based on positive psychology is a growing field of interest. Such interventions are stated by Sin and Lyubomirsky (2009) to be “treatment methods or intentional activities aimed at cultivating positive feelings, positive behaviors, or positive cognitions” (p. 467). Studies have shown that interventions based on positive psychology can reduce the symptoms of mental illnesses. For example, Seligman et al. (2005) conclude that such interventions not only have a positive effect on well-being, but also have the potential to simultaneously reduce negative symptoms, such as distress and depression. Sin and Lyubomirsky (2009) emphasize the effectiveness of positive psychology interventions and encourage clinicians to incorporate such interventions in treatments for depression. Furthermore, positive psychology interventions are often used in non-clinical samples, and it has been shown that such interventions are powerful for preventing the development of mental disorders (e.g., Steck et al., 2004; Sin & Lyubomirsky, 2009).

As adults spend the majority of their awake time working, the way they feel about their work has a huge effect on their overall well-being (e.g., Forest et al., 2012; Locklear et al., 2020). According to the American Psychological Association (2009), more than half of Americans report that work is a major source of stress. Work related stress has a direct influence on people’s job satisfaction which is known to be the most challenging organizational concept and often represents the basis of management policies that aim to enhance the organizational productivity and efficiency levels (Singh et al., 2019). Taking this into account, psychologists turned to organizations with the intention to find ways to improve people’s work life. Indeed, the focus of intervention programs based on positive psychology has recently shifted towards organizational settings. A growing body of literature shows the benefits of these interventions for workplace-related factors, such as work engagement, job satisfaction (Dreer, 2020), work performance (Dubreuil et al., 2020), as well as job-related positive and negative affective well-being (Kaplan et al., 2014). Affective well-being refers to frequent experience of positive emotions and seldom experience of negative emotions and is one of the most important components of psychological well-being (Daniels, 2000). This construct can be applied to the work domain; thus, work-related affective well-being reflects the feelings regarding work life

(Hosie & Sevastos, 2010). A recent meta-analysis conducted by Donaldson et al. (2019) focused on positive work and organizations demonstrated that interventions based on positive psychology in workplaces can improve desirable and reduce undesirable work-related outcomes. For example, strengths-based employee interventions show an increase in work-related affective well-being (Page & Vella-Brodrick, 2013), as well as overall well-being (Dubreuil et al., 2016).

Gratitude Interventions

Researchers argue that positive psychology interventions, which focus on gratitude, are amongst the most effective ones (Di Fabio et al., 2017; Wood et al., 2010). For example, Seligman et al. (2005) compared several interventions based on character strengths, optimism, as well as gratitude and revealed that the latter has prolonged effects, such as increased happiness and decreased depressive symptoms. The most commonly used interventions to promote gratitude are journaling, where people write daily or weekly about different things and events that they are grateful for, or the *Three Good Things* exercise, where people are asked to state three things that they not only experienced as positive but are explicitly grateful for (Seligman et al., 2005). The length of such interventions can vary, but in general, the results show a significant increase in the lasting positive effects of interventions regardless of the time frame (Dickens, 2017).

Interventions which focus on enhancing gratitude are used in different domains for varying purposes. For example, Luo et al. (2019) investigated the effectiveness of recording three good things twice a week among nurses who experienced stress related depressive episodes. The study showed that after six months of gratitude practice the levels of depressive symptoms significantly decreased. The authors suggest that such practice could be used as a regular activity in order to minimize the risk of mental illnesses, caused through job related stress (Luo et al., 2019). Interventions based on promoting gratitude have demonstrated positive effects in organizational settings as well. Kaplan et al. (2014) asked participants to write down job-related things, which employees are grateful for, at least three times a week. After two weeks of the intervention, participants reported higher levels of job-related positive affective well-being. A more recent study by Locklear et al. (2020) revealed that a 10-day gratitude journaling intervention decreased workplace mistreatment. The study also revealed that increased self-control resources acted as a main mediator explaining the reduction of uncivil gossip and ostracizing behavior in the workplace. The authors argue that these results support the idea that

gratitude interventions help build personal resources, such as self-control or resilience (Locklear et al., 2020).

Despite the potential of gratitude for promoting well-being and achievement in organizational settings, scientifically validated gratitude interventions in work life remain scarce (Fehr et al., 2017). So far, established gratitude interventions are mainly based on the individual level, as the focus of earlier mentioned strategies is on the person itself rather than on one's surroundings. For example, people who are encouraged to write a gratitude journal related to work (Cheng et al., 2015), or list several things that they are grateful for (Chancellor et al., 2014), are having the focus on themselves rather than others. As previous studies showed, not only expressing gratitude, but also receiving gratitude is crucial. For example, Lee et al. (2019) found that employees who helped their coworker and received gratitude afterwards, indicated a boost of work engagement. Another study demonstrated the importance of receiving gratitude on employees' well-being (Grant & Gino, 2010). Furthermore, the receipt of gratitude has been shown to increase prosocial behavior, by making employees feel socially appreciated (Lee et al., 2019). A recent theory by Koo et al. (2008) explains gratitude as a relational emotion, which means that expressing gratitude has an effect on both, the one who expresses gratitude and the receiver, leading to better interpersonal relationships. Hence, sharing gratitude among coworkers could build healthier and more social workplaces by fostering positive interpersonal relationships.

Both expressing and receiving gratitude is essential for healthy organizations. Seligman et al. (2005) pointed out that there is a need for tools that could help people share their gratitude to each other in daily lives. So far, there have been attempts to implement exercises such as the *gratitude letter* (Seligman et al., 2005), where people are encouraged to express their gratitude towards a certain person in a letter. Exercises like this proved to be effective (Davis et al., 2016), however no such exercises were tested in an organizational context and to our knowledge, there is no empirically established self-administered group exercise that could promote gratitude in an organizational context. Although exercises on the individual level seem to gain popularity, group-level exercises could be especially beneficial in workplaces as showing gratitude among coworkers leads to higher acceptance by their peers (Layous et al., 2012), an increase in work engagement (Lee et al., 2019; Kim & Qu, 2020), and therefore work performance (Alessandri, et al., 2018). There is a growing amount of research on intervention programs based on gratitude

that show its effectiveness in organizations (Di Fabio et al., 2017) and it is important to continue working in this direction in order to find the most effective tools. As Kim and Qu (2020) concluded in their recent study, it is very important for organizations to employ different tools that could provide more chances to feel and share gratitude within organizations, especially on a peer level. One such tool could be the newly established and easily approachable application Listen Léon.

The Application Listen Léon. Listen Léon is an online platform, which provides means to send anonymous, positive, and descriptive feedback to coworkers, so-called *Léons* (see: <https://listenleon.com/en/>). A sender of a Léon can write a minimum of 140 characters-long message to a coworker including up to three character strengths that are associated with the receiver of the Léon and that the sender can choose from a list (for an example see Appendix A). In case a sender can't come up with a suitable message regarding length or content, Listen Léon has a function named *Lend me a feather*, which formulates a Léon automatically based on character strengths that are chosen by the sender. Messages sent via Listen Léon have to be positive and based on a person's inner characteristics rather than superficial values. To ensure this, Listen Léon uses artificial intelligence which verifies the content of a message before it is sent. The receiver of a Léon can't see who sent the message; anonymity of the Léon diminishes the chances of judgment and bias towards coworkers. Based on the received messages an artificial intelligence creates character strengths profiles for each user individually as well as for a whole team whose members are registered with the application (for an example see Appendix B). The character strengths indicated by Listen Léon are based on the Values in Action (VIA) Classification of Character Strengths and Virtues (Peterson & Seligman, 2004). The Values in Action Classification identifies 24 universal, positive traits like hope, kindness, curiosity, and others, that support self-fulfillment. In general, Listen Léon was designed on the basis of two scientific constructs which are each based on positive psychology. The first one represents sharing gratitude with the people around oneself. The second one is the reflection of one's own character strengths and their usage, observed by others. This study focuses on the first construct: The effects of sharing gratitude with one's coworkers.

Listen Léon is available as an app or webapp in French, English, and German. Once an individual creates an account, a message containing descriptive feedback can be sent to any other Listen Léon account or to a person's email address. A premium subscription of a Listen Léon

account enables unlimited messages, access to a team's profile and personal profile that shows personal as well as team's strengths and virtues information. In addition, the Léons cannot be read by the researchers, the content itself is only visible for the sender and receiver. Just the amount of sent and received Léons is of interest in the scope of this study.

Study Aim and Hypotheses

The current project expands the emerging field of positive psychology in the organizational context. The primary aim of this study is to assess the psychological impact of a newly developed online gratitude intervention for the workplace. By exploring the effects of the application on different psychological aspects, the current project contributes to the research on evaluating the tool Listen Léon in organizations. Due to previous studies showing an increase in gratitude levels, positive affective well-being as well as a decrease in negative affective well-being after gratitude interventions (Dickens, 2017), the first hypothesis focuses on the mentioned psychological aspects and aims to evaluate the effectiveness of the intervention:

H1: After the intervention (Time 2), there will be an increase in participants' self-reported gratitude level (H1a), an increase in participants' positive affective well-being (PAWB; H1b), a decrease in participants' negative affective well-being (NAWB; H1c), an increase in participants work performance (H1d) and prosocial behavior (H1e) in comparison to before the intervention (Time 1).

Looking at previous gratitude intervention studies, a methodological disadvantage can be found regarding outcome variables. Most studies hypothesize that an intervention which is aiming to enhance gratitude goes along with participants having higher gratitude levels afterwards, regardless of how involved in and therefore influenced by the intervention the participant really is (Dickens, 2017). Examining the extent to which the individual participates in the offered intervention by measuring the amount of sent and received gratification messages gives further insights of how great the influence of a gratitude intervention should be to achieve the desired effect on participants. In order to control for outcome effects in relation to the individuals' extent of participation in the intervention, the following hypothesis was formulated:

H2: The higher the amount of Listen Léon activity (number of sent and received messages), the higher participants' self-reported gratitude level (H2a), the higher

participants' PAWB (*H2b*), the lower participants' NAWB (*H2c*), the higher participants' work performance (*H2d*) and the higher participants' prosocial behavior (*H2e*).

Methods

Participants

A convenience sampling method was used. The recruitment of participants included several methods such as contacting companies directly via email, advertising the study via posts on social media such as Facebook and LinkedIn and employing the snowball technique, using the authors' personal networks. An informative email including the invitation to participate in this study was sent once an organization was interested in participation (see Appendix C). Participants were required to be part of a team within an organizational setting. Ideally, the whole team was recruited. If, however, some individuals of the team did not participate in this study, the study procedure was conducted with the remaining team members. Seven teams were recruited consisting of 106 people in total, ranging in size from seven to 60 team members. The majority of the teams were based in Germany ($n = 6$), while one team was from Denmark. The teams belonged to different organizations, including federal government, software producers, and start-ups. The pre-test survey (Time 1) was filled out by 96 participants and 64 participants completed the post-test questionnaire (Time 2); thus, the attrition rate was 33%. After matching the Time 1 and Time 2 questionnaires to the same participants, a sample of $N = 57$ participants were left for the data analysis. The open-ended questions at Time 2 were answered by 35 participants. In the final sample, 35 of the participants identified as males, 21 as females, and one person reported their gender as *other*. The mean age was 37.9 years ($SD = 12.8$). In order to gain more participants, the study included English and German versions of the questionnaires. Participants from six teams (five teams based in Germany and one team based in Denmark) filled out the questionnaires in English ($n = 28$). Their mean age was 29.8 years ($SD = 5.2$; 14 males, 14 females). One team filled out the questionnaires in German ($n = 29$). This German language team consisted of 21 males, seven females, and one diverse. Their mean age was 45.7 years ($SD = 13.2$). Participation was voluntary and no compensation was provided other than the benefits of using the premium subscription of Listen Léon for the time of the study.

Study Design and Procedure

The present study was carried out using a mixed-methods design comprising a pre- and post-test. A convergent-parallel approach was applied as quantitative and qualitative data were collected concurrently, but analyzed separately (Edmonds & Kennedy, 2017).

First, all participants participated in an online webinar conducted by researchers (see Appendix D). During this webinar, participants were informed about the study and invited to fill out the first of two questionnaires after signing a consent form (pre-test; Time 1; see Appendix E). The pre-test questionnaire was open for participation ranging from 24th of March to 19th of April. In the questionnaire, participants were asked to provide demographic information and to complete the quantitative measures. Afterwards, the webinar was continued by introducing the application Listen Léon, explaining its features, and setting up the team's premium accounts. Second, after the seminar, participants were given a time frame of four weeks (holidays excluded) to use the application Listen Léon. To encourage active participation in the intervention, two reminder emails were sent during this period of time (see Appendix F). Third, after the intervention time span of four weeks, participants were asked to fill out the second questionnaire (post-test; Time 2; Appendix G) which included the same measures as the pre-test. This follow-up questionnaire was released respectively ranging from 26th of April 2021 to 17th of May 2021. Participants were also asked at Time 2 to manually count how many messages they received and sent through the application within the last four weeks by logging into their premium Listen Léon accounts. Moreover, additional to filling out the quantitative measurements, participants were invited to complete qualitative measurements, which included five open-ended questions, at Time 2. All data was collected by the authors using online questionnaires provided by the platform *soscisurvey.de* which is specifically designed for scientific surveys (Leiner, 2014). The order of the scales within each questionnaire was randomized for all participants to avoid order bias. The two questionnaires of each respondent from Time 1 and Time 2 were connected for data analysis using a personal identification code. Every participant was asked to create such a personal code during Time 1 and had to indicate it again at Time 2. The code consisted of the first three letters of their mothers' first name and the birth year of their fathers.

Measures

Regarding the language of the measures, original English and German versions as well as German translations were used. The Job-Related Affective Well-Being Scale (JAWS; Van

Katwyk et al., 2000) was used in its German version which was validated in previous research (Baldschun, 2010). The Gratitude Adjective Checklist (GAC; McCullough et al., 2002), the In-Role Behavior Scale (IRB; Williams & Anderson, 1991) and the Organizational Citizenship Behaviour Scale regarding individuals (OCBI) and organization (OCBO; Lee & Allen, 2002) were translated to German by the authors of this study. The translation was carried out using the back-translation method consisting of three steps (Tyupa, 2011). First, one of the researchers translated the questionnaires from English to German. Second, another researcher who was not involved in this study translated the survey from German back to English. Third, both researchers discussed the discrepancies between their translations and agreed on a final version, which was checked by three other researchers independently, who were not involved in this research project. Cronbach's alphas of English and German versions, as well as the whole sample for each scale at Time 1 and Time 2 can be found in Appendix H.

Quantitative Measurements

The questionnaires that participants were asked to fill out at Time 1 and Time 2 consisted of the following scales and aimed to quantify the respective underlying constructs.

Gratitude. The Gratitude Adjective Checklist (GAC), developed by McCullough et al. (2002) was used to quantify participants' gratitude levels. Participants indicated on a scale from 1 = *very slightly or not at all* to 5 = *extremely* to which extent they experienced the respective gratitude-related adjective at work. The checklist consists of three items (*grateful, thankful, and appreciative*).

Affective Well-Being. To assess affective well-being related to work, the short version of the Job-Related Affective Well-Being Scale (JAWS; Van Katwyk et al., 2000) was administered. It consists of 10 items for PAWB (e.g., "My job made me feel energetic") and 10 items for NAWB (e.g., "My job made me feel angry"). Using a five-point Likert-scale (1 = *strongly disagree* to 5 = *strongly agree*) people's affective reactions to their job over the past 30 days was measured.

Work Performance. Work performance was assessed using the In-Role Behavior Scale (IRB; Williams & Anderson, 1991). It is a self-reported work performance measurement asking participants to rate seven statements about in-role performance behaviors on a five-point Likert-scale ranging from 1 = *not once* to 5 = *all the time* (e.g., "Regarding your performance at work, how often do you adequately complete assigned duties?").

Prosocial Behavior. The Organizational Citizenship Behaviour Scale regarding individuals (OCBI) and organization (OCBO) were used to assess prosocial behavior (Lee & Allen, 2002). OCBI assesses pro-social behavior towards other individuals at work (e.g., “How often do you help others who have been absent?”), while OCBO is linked to an individual’s pro-social behavior towards the organization itself (e.g., “How often do you offer ideas to improve the functioning of the organization?”). The scale consists of 16 items that asked participants to indicate how often they engaged in particular behaviors on a 7-point Likert-scale (1 = *never*, 7 = *always*).

Explorative Measures. Additionally, participants were asked at Time 2 to indicate how much they were motivated to use Listen Léon and to what extent they enjoyed using it on a scale from 0% to 100%.

Qualitative Measurements

At the end of the second questionnaire participants had the option to fill out five open-ended questions. In total, 35 people answered at least one of the five optional questions about their perceived feelings of sending (“How did it make you feel to send a Léon?”; $n = 34$) and receiving Léons (“How did it make you feel to receive a Léon?”; $n = 33$), their perceived changes regarding their team’s relationships (“What changes, if any, did you notice in your team’s relationships since you started using Listen Léon?”; $n = 26$), as well as their perceived influence of Listen Léon on their daily work experience (“How did Listen Léon, if at all, influence your daily work experience?”; $n = 27$). Participants were also given the option to comment on their participation in this study and their experience with Listen Léon (“Is there anything else you would like to tell us regarding your experience with Listen Léon or your participation in our study?”; $n = 27$).

Quantitative Data Analysis

Only the information of participants who completed both Time 1 and Time 2 quantitative measures were involved in the data analysis. Quantitative data analysis was conducted using the IBM software SPSS version 26. To assess the effectiveness of the intervention and to investigate our first hypothesis, several one-way repeated measures ANOVAS were performed for the comparison of the individuals’ level of gratitude (*H1a*), PAWB (*H1b*), NAWB (*H1c*), work performance (*H1d*) and prosocial behavior (*H1e*) between Time 1 and Time 2. Because the questionnaires filled out by the participants differed in their language (English vs German),

language was integrated into the analysis as a between-subject factor. Concerning the second hypothesis and in order to investigate if the participants' level of involvement in the intervention had an effect on possible outcome measures, correlations were conducted. Associations between Listen Léon activity and participants' level of gratitude (*H2a*), PAWB (*H2b*), NAWB (*H2c*), work performance (*H2d*), and prosocial behavior (*H2e*) at Time 2 were investigated. Listen Léon activity represents the cumulative number of sent and received messages (*Léons*) per participant.

Qualitative Data Analyses

A thematic analysis of the answers to the qualitative measures was conducted using the QSR International software Nvivo 12. Thematic analysis was carried out by following six phases based on Braun and Clarke (2006), which are subsequently explained, as well as a detailed elaboration of these phases by Terry et al. (2017). Every participant who answered at least one qualitative question was included in the analysis. Prior to it, participants' personal identification codes and quantitative data were separated from their answers to the qualitative questions in order to guarantee an independent analysis according to the convergent-parallel approach (Edmonds & Kennedy, 2017). The first step of the analysis consisted of getting familiar with the data. The aim in this first phase was to read participants' answers and according to Terry et al. (2017) generating provisional analytic ideas. In the second phase, initial codes, which represent headings of the relevant semantic content, were generated. Any semantic content, which appeared to be of interest concerning the research topic, was extracted and summarized under its respective code. The outcome of this second phase was a list of codes, which were then structured into themes and sub-themes in the third phase. Codes were transformed into overarching constructive themes each subsuming the respective codes underneath it. In the fourth phase, the themes were reviewed in regard to internal homogeneity and external heterogeneity. Hence, regarding the former, each theme was checked for coherence within itself and its sub-themes. Regarding the latter, a clear distinction between the different themes was ensured while the themes were still reasonably connected to each other as well as the original research topic. To ensure coding reliability, steps one to four were carried out by the two authors independently. Results were then compared and integrated into the further steps five and six. The fifth phase represented defining and renaming themes. In this stage, themes were defined and further refined, singling out their quintessence. The last phase represented producing the result report and presenting the findings.

Ethical Considerations

This study was designed to aim for concordance with the ethical guidelines of psychology research in Sweden and was approved by the department of psychology at Lund University. Only individuals of the age of 18 or older were allowed to take part in the study. There was no foreseeable physiological or psychological risk by participating in this study.

Before participants began the intervention, they were asked to sign a consent form, where they were informed that the collected data is shared with researchers from Lund University as well as the Université du Québec à Montréal. It also mentioned that participants can withdraw from the study at any point without consequences and that any information collected was anonymous and could not be used to identify individuals. Further, no personal sensitive data other than the individual's age, gender, and the country of their employer, was collected. Thus, no sensitive questions about religion, political orientation, or ethnicity were asked. Also, any collected data is stored on a server located in Europe, therefore falling under the guideline of the General Data Protection Regulation. Only researchers who are part of the study have access to the password protected data files.

Regarding the application Listen Léon, it provides three security levels to ensure the positivity of a message. First, the application checks if any blacklisted forbidden words are used in a message. Insults or words regarding someone's outfit (e.g., skirt, tie) are part of this blacklist, which will eliminate the possibility of sending such message. Second, the semantics of a message are analyzed by using artificial intelligence technology. In case a message is detected as being negative, the user is informed of the need to change the message in order to be able to send it. Third, in case the artificial intelligence technology is unable to classify a message as being plainly positive, it is forwarded to the application's development team for further analysis and correct classification. In case someone receives a negative or inappropriate message, regardless of the three security levels mentioned above, the individual can use the report feature, which will lead to further investigations on the part of the Listen Léon team. The application's data is exclusively stored in Paris, France, which falls as well into the range of the General Data Protection Regulation of the European Union. Listen Léon states that the data is never used or resold to third parties. Only individuals themselves have access to their profile and messages. The actual content of Léons could not be read by the researchers at any time and remained private to the sender and the respective receiver.

Results

Quantitative Results

In order to be able to control for language, should significant differences in the dependent variables be observed, and owing to the fact that the German language group consisted of only one team, we compared these two language groups before testing our hypotheses. English and German language groups differed concerning demographic variables in age ($t(55) = -6.07, p < .001$), with the English language group being younger, but not in gender ($X^2(2, N = 57) = 4.72, p = .095$). As for the study variables, independent t -test were computed since normality can be assumed if the sample size exceeds $N = 30$ (Hogg & Tanis, 1997). Skewness values were ranging from -1.00 to 1.30 and kurtosis values were ranging from -1.31 to 3.10. Results revealed that the two language groups significantly differed in their OCBI and OCBO levels at Time 1 with the English language group having lower scores than the German language group (see Table 1 for all descriptive values and independent t -test results). Further, gratitude levels at Time 2 differed, with the English language group having significantly higher values than the German language group. Also, the English language group reported significantly higher enjoyment of using Listen Léon, than the German language group. The German language group had significantly higher OCBO scores at Time 2 than the English language group. The two language groups did not significantly differ regarding their gratitude, PAWB, NAWB, and work performance at Time 1, or in regard to their PAWB, NAWB, work performance, prosocial behavior regarding individuals at Time 2, their Listen Léon activity, and their motivation to use the application.

Based on the differences between language groups and in order to be able to detect effects that are present in only one language group but not the other, we decided to add language as a between-subjects factor to the ANOVA. For the same reason it was decided to perform further correlations in order to test the hypothesis $H2$ for each language group separately, additionally to the $H2$ testing for the whole sample.

Table 1

Means and Standard Deviations of Dependent Variables Among English and German Language Groups at T1 and T2 and Independent Sample T-Tests of Dependent Variables for English and German Language Groups at T2

Variables	T1					T2				
	<i>M</i> (<i>SD</i>)		Independent Sample T-Tests			<i>M</i> (<i>SD</i>)		Independent Sample T-Tests		
	E	G	<i>t</i> (55)	<i>p</i>	Cohens'd	E	G	<i>t</i> (55)	<i>p</i>	Cohens'd
GAC	10.54 (2.38)	9.66 (1.80)	1.56	.120	0.417	11.49 (1.97)	9.38 (2.43)	3.55	.001**	0.954
PAWB	31.82 (5.87)	33.41 (4.59)	-1.14	.258	0.302	31.32 (5.87)	32.41 (4.77)	-0.78	.438	0.204
NAWB	20.32 (4.85)	21.17 (6.85)	-0.45	.591	0.143	19.93 (5.55)	21.52 (7.54)	-0.90	.370	0.240
IRB	24.71 (2.73)	25.21 (3.05)	-0.33	.746	0.173	24.79 (2.69)	25.38 (3.02)	-0.51	.614	0.206
OCBI	40.36 (7.01)	44.31 (5.51)	2.37	.021*	0.627	40.89 (6.73)	43.45 (6.24)	-1.15	.143	0.394
OCBO	37.50 (8.80)	43.48 (4.27)	-3.28	.002**	0.865	35.86 (8.07)	43.48 (6.53)	-3.93	.001**	1.038
Listen Léon activity ^a						8.86 (0.69)	9.68 (0.69)	-1.18	.242	1.188
Motivation						60.71 (26.14)	52.38 (26.62)	1.19	.238	0.306
Enjoyment						68.21 (25.44)	53.41 (28.19)	2.08	.042*	0.551

Note. *N* = 57. T1 = Time 1; T2 = Time 2; E = English language group (*n* = 28); G = German Language Group (*n* = 29); GAC = Gratitude Adjective Checklist; PAWB = Job-Related Positive Affective Well-Being; NAWB = Job-Related Negative Affective Well-Being; IRB = In-Role Behavior Scale; OCBI = Organizational Citizenship Behavior Scale regarding individuals;

OCBO = Organizational Citizenship Behavior Scale regarding the organization; Motivation = indicated motivation to use Listen Léon; Enjoyment = indicated enjoyment of using Listen Léon.

^a Reflects the cumulative number of the messages sent and received on Listen Léon.

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

The first hypothesis postulated that participants will indicate an increase in self-reported gratitude level (*H1a*) and positive affective well-being (*H1b*), a decrease in negative affective well-being (*H1c*), as well as an increase in work performance (*H1d*) and prosocial behavior (*H1e*). For *H1a*, the main factor time did not get significant ($F(1, 55) = 1.52, p = .223$), however, a significant interaction effect between time and language was revealed ($F(1, 55) = 5.18, p = .027$). Post-hoc tests indicated that gratitude levels increased at Time 2 for the English language group, but not for the German language group (see Table 1). Thus, one can state that *H1a* was supported for the English language group. Concerning the other sub-hypotheses, no significant main effects of time were revealed regarding PAWB ($F(1, 55) = 1.80, p = .185$), NAWB ($F(1, 55) = 0.002, p = .967$), work performance ($F(1, 55) = 0.32, p = .574$), or prosocial behavior regarding individuals ($F(1, 55) = 0.04, p = .839$) and organizations ($F(1, 55) = 1.19, p = .279$). Also, no interaction effects between time and language got significant for the outcome variables PAWB ($F(1, 55) = 0.20, p = .656$), NAWB ($F(1, 55) = 0.41, p = .524$), work performance ($F(1, 55) = 0.06, p = .804$), prosocial behavior regarding individuals ($F(1, 55) = 0.76, p = .386$) as well as organizations ($F(1, 55) = 1.19, p = .279$), meaning that the hypotheses *H1b*, *H1c*, *H1d*, and *H1e* were not supported. Regarding the results of the second factor language, statistics revealed a significant main effect of language regarding participants gratitude ($F(1, 55) = 8.54, p = .005$) and prosocial behavior regarding individuals ($F(1, 55) = 4.76, p = .033$) as well as organizations ($F(1, 55) = 15.54, p < .001$), but not their PAWB ($F(1, 55) = 1.10, p = .298$), NAWB ($F(1, 55) = 0.61, p = .440$) or work performance ($F(1, 55) = 0.21, p = .651$). Thus, the intervention did not affect these dependent variables in either of the language groups.

The second hypothesis stated that the higher the amount of Listen Léon activity (number of sent and received messages), the higher participants' self-reported gratitude level (*H2a*), the higher participants' positive affective well-being (*H2b*), the lower participants' negative

affective well-being (*H2c*), the higher participants' work performance (*H2d*), and the higher participants' prosocial behavior (*H2e*) at Time 2. Correlations were performed between participants' Listen Léon activity and their gratitude levels, PAWB, NAWB, work performance and prosocial behavior. Correlations for all quantitative measurements at Time 2 are reported in Table 2. The results did not show any significant correlations between the participants' Listen Léon activity and their gratitude levels, PAWB, NAWB, work performance, or prosocial behavior. Thus, hypotheses *H2a*, *H2b*, *H2c*, *H2d*, and *H2e* were not supported in the present study for the whole sample.

Table 2*Means, Standard Deviations and Correlation Coefficients Among Study Variables at T2*

Variables	1	2	3	4	5	6	7	8	9	10	11
1. Listen Léon activity ^a	-										
2. Age	-.441**	-									
3. GAC	-.032	.150	-								
4. PAWB	.037	.218	.589**	-							
5. NAWB	.255	-.415	-.285	-.358	-						
6. IRB	-.253	.234	-.136	.275*	-.337*	-					
7. OCBI	.048	-.056	.363**	.342*	.088	.106	-				
8. OCBO	.016	-.003	.243	.281*	.183	.043	.441**	-			
9. Sent Léons ^b	.913**	-.406**	-.155	-.018	.224	-.120	.031	.067	-		
10. Received Léons ^c	.773**	-.337*	.170	.109	.221	-.367*	.056	-.069	.550**	-	

Table 2 (continued)

Variables	1	2	3	4	5	6	7	8	9	10	11
11. Motivation	.545**	-.295*	-.057	-.006	.199	-.133	-.093	-.002	.656**	.573**	-
12. Enjoyment	.518**	-.142	.223	.109	.064	-.287*	-.019	-.073	.339**	.362**	.448**

Note. $N = 57$. T2 = Time 2; GAC = Gratitude Adjective Checklist; PAWB = Job-Related Positive Affective Well-Being; NAWB = Job-Related Negative Affective Well-Being; IRB = In-Role Behavior Scale; OCBI = Organizational Citizenship Behavior Scale regarding individuals; OCBO = Organizational Citizenship Behavior Scale regarding the organization; Motivation = indicated motivation to use Listen Léon; Enjoyment = indicated enjoyment of using Listen Léon.

^a Reflects the cumulative number of the messages sent and received on Listen Léon.

^b Reflects the cumulative number of the messages sent.

^c Reflects the cumulative number of the messages received.

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

Explorative Analysis

Based on the findings that the two language groups significantly differ in their outcome variables, correlations were performed between participants' Listen Léon activity and their gratitude levels, PAWB, NAWB, work performance, and prosocial behavior for each language group separately in order to test the second hypothesis. Because the two language group sample sizes were smaller than 30 ($n = 29$ for the German questionnaire sample, $n = 28$ for the English questionnaire sample), a series of Shapiro-Wilk Tests was performed in order to check for normality (see Appendix I). Pearson correlations were performed for normally distributed variables, while for not normally distributed variables Spearman correlations were applied.

The Pearson correlation for Listen Léon activity and PAWB in the English language group at Time 2 revealed a marginally significant and medium effect ($r = .35$, $p = .068$). Thus, *H2b* was partially supported for the English language group. Results did not reveal significant correlations for Listen Léon activity and NAWB ($r = .00$, $p = .999$), work performance ($r = .03$, $p = .887$), and prosocial behavior regarding individuals ($r = .20$, $p = .316$) as well as organizations ($r = .19$, $p = .322$). Therefore, the hypotheses *H2a*, *H2c*, *H2d*, and *H2e* were not supported for the English language group. The German language group did not reveal any significant correlations between participants' Listen Léon activity and their gratitude ($r = -.11$, $p = .554$), PAWB ($r = -.18$, $p = .385$), NAWB ($r = .35$, $p = .062$), work performance ($r = -.32$, $p = .095$), and prosocial behavior regarding individuals ($r = -.37$, $p = .848$) as well as organizations ($r = -.10$, $p = .594$). Therefore, none of the *H2* were supported for the German language group.

To check whether participants' motivation to use Listen Léon and the extent to which they enjoyed using it had an effect on outcome variables, correlations including the whole sample ($N = 57$) were performed. As it can be seen in Table 2 both, motivation to use the application and participants' enjoyment of using it significantly correlated with Listen Léon activity. Another significant correlation was found between Listen Léon activity and participants' age, stating the younger participants were the higher their Listen Léon activity.

In conclusion, the results supported *H1a* for the English language group. Also, concerning the English language group, the results regarding *H2b* got marginally significant. The hypotheses *H1b*, *H1c*, *H1d*, *H1e*, *H2a*, *H2c*, *H2d*, and *H2e* for the English language group were

not supported. For the German language group none of the hypotheses could have been supported.

Qualitative Results

The following section describes the responses resulting from the open-ended questions. A total of 35 participants responded to the open-ended questions. Saturation was reached after analyzing the answers of 20 respondents, meaning that the responses got repetitive and no new themes emerged (Fusch & Ness, 2015). It was decided to use the rest of the answers ($n = 15$) as control answers in order to see whether they fit into the themes. As the current study aimed to evaluate the application Listen Léon and its impact on participant's psychological health, the data from the open-ended questions indicated two poles. Based on this, two main themes were formed: *Positive Experiences* (Figure 1) and *Unsatisfactory Experiences* (Figure 2). Each of the themes includes sub-themes: *gratitude, motivation, positive emotions, feedback culture, positive shift of mindset* for the first theme (positive experiences) and *no noticeable changes, Léon content, and technical issues* for the second theme (unsatisfactory experiences). The subthemes are described within the context of each theme. In order to clarify the results, data extracts are presented as examples.

Figure 1

Theme 1 Mind Map: Positive Experiences

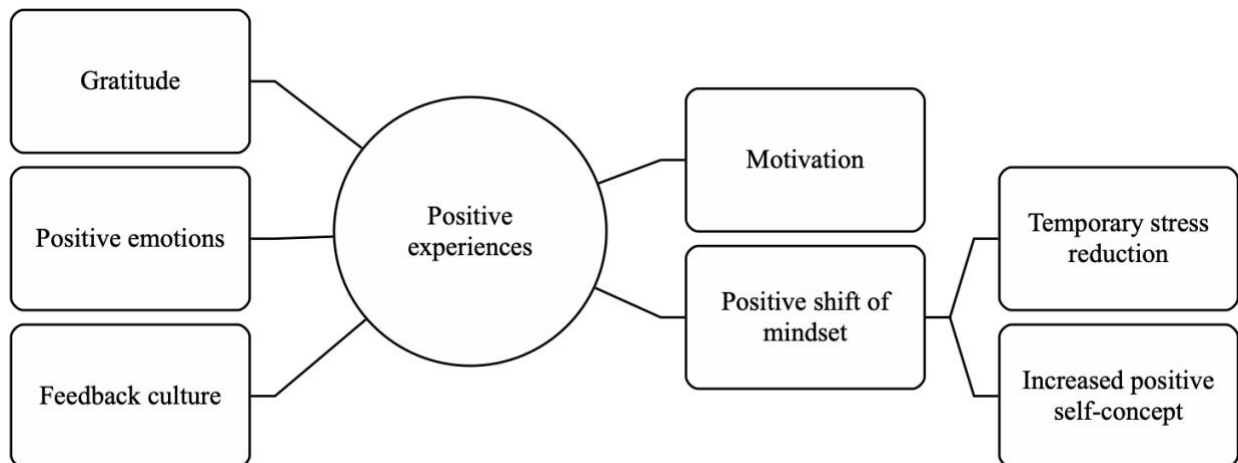
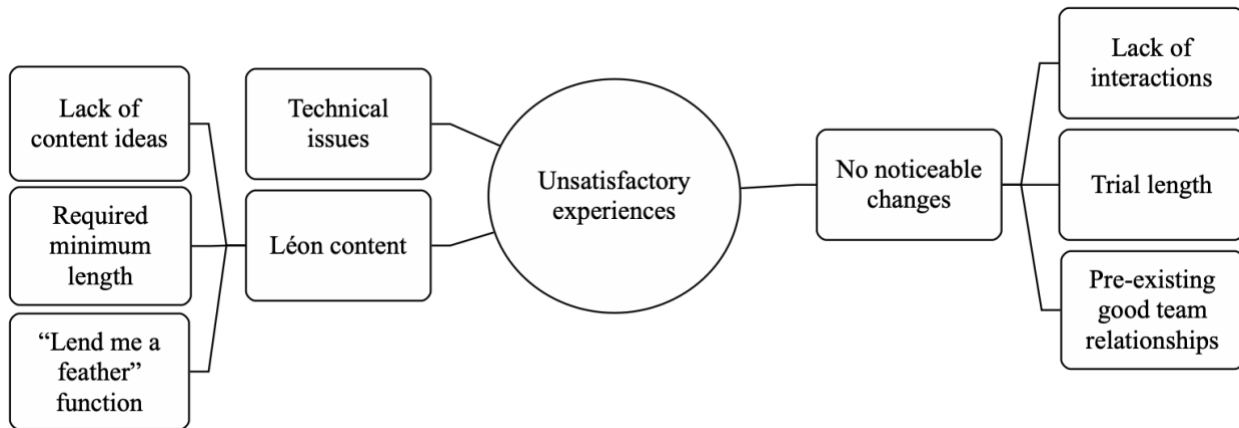


Figure 2

Theme 2 Mind Map: Unsatisfactory Experiences



Theme 1: Positive Experiences

The first theme reflects participants' positive experiences which was apparent in the majority of open-ended answers. The theme consists of several sub-themes, namely, *positive emotions, motivation, positive shift of mindset, gratitude, and feedback culture*. In general, Listen Léon was perceived as a useful tool for organizations and the majority of participants expressed their belief in long-term positive effects. Some participants wished for longer usage and even an implementation in their daily work (e.g., "I would like to use this on a weekly basis").

Positive Emotions. Participants showed to have experienced positive emotions and indicated to have enjoyed sending and receiving Léons (e.g., "Gave me some happy moments and made me feel purposeful"), as well as an increase in positive emotions in daily work life was noticed (e.g., "It made me happier and more content").

Motivation. Another recurring concept regarding the positive experience of the intervention was motivation. Some participants reported an increase in motivation (e.g., "It motivated me") which was mostly indicated after receiving a Léon. Increased motivation was also noticed in daily work experience (e.g., "It adds some positive energy and a bit of extra motivation").

Positive Shift of Mindset. The answers to the open-ended questions also demonstrated a positive change in mindset. Respondents' answers indicate that the self-concept, which refers to the thoughts and feelings that a person has about oneself which people obtain by the reactions and behaviors of others towards them (Swann et al., 2007), was influenced positively, meaning

that the participants experienced a positive shift in the way they perceived themselves (e.g., “It pushed my self-esteem”). It was also evident that participants got to know their strengths better (e.g., “Reminded of my strengths overlooked by myself”). What is more, the intervention helped to focus more on positive matters in general (e.g., “It trained me to look for the good rather than everything that might be going wrong”) and yielded a temporary stress reduction (e.g., “Took me out of the stress for a moment”).

Gratitude. The qualitative data also showed that Listen Léon stimulated feelings of gratitude around coworkers. Participants felt more appreciated by their team (e.g., “My work felt more appreciated”) as well as gratitude towards one’s team was induced (e.g., “It reframed my thinking towards the positive sides and be more grateful to my colleagues”).

Feedback Culture. Last, the responses to the open-ended questions demonstrate that the positive feedback culture was encouraged (e.g., “I enjoyed the possibility of giving people positive feedback - something that is often overlooked in stressful everyday life”). The responses suggest that positive feedback was of a big value as it helped to learn about others’ views towards oneself (e.g., “Got to know myself better because I knew which behavior was appreciated by others”).

Theme 2: Unsatisfactory Experiences

Together with positive experiences, a few participants also reported unsatisfactory experiences, however, very few participants indicated only unsatisfactory experiences. This includes several reasons, grouped into the following sub-themes: *no noticeable changes*, *Léon content*, and *technical issues*.

No Noticeable Changes. The majority of reported unsatisfactory experiences represented statements of no noticeable changes (e.g., “I did not notice any change”). Here, participants stated to not having perceived any changes after using Listen Léon for four weeks due to one of three reasons. One reason was the lack of personal interaction with coworkers (e.g., “It’s hard to tell, since we all work from home (and only interact via web conference, sometimes only with audio”). Another reason was that the length of the trial was mentioned as being too short in order to have perceived a difference from before the intervention (e.g., “Within one month, it’s hard to notice major difference”). Lastly, some participants did not notice any changes after the intervention due to pre-existing good team relationships (e.g., “I didn’t see big changes because especially with the colleagues I work closely with we already had a very good team spirit”).

Léon Content. A number of participants mentioned the content of Léons being the reason for their unsatisfactory experiences. Again, participants mentioned that they did not have many interactions with their colleagues, which then led to a lack of Léon content ideas (e.g., “It was hard to think of something. Especially for those colleagues you don’t know so well or have little contact with”). Further, the required minimum length of 140 characters per Léon was the reason for a few participants to indicate unsatisfactory experiences due to the effort necessary to surpass the required minimum length (e.g., “I found it a bit annoying about the requirements of the length of a Léon. Usually after a nice interaction with a colleague, I wanted to quickly send them a nice Leon and move on. Instead, I was blocked due to the Léon being too short. I found it incredibly hard to write a long enough Léon to be accepted without spending too much time on it”). Although Listen Léon offers a feature called *Lend me a feather* which aims to counteract the lack of content ideas and provide inspiration, these software-produced Léons were often perceived as “unnatural”, “dishonest” and “artificial”.

Technical Issues. One last reason for some participants to indicate unsatisfactory experience was technical issues. Artificial intelligence, for example, was criticized to not function properly (e.g., “The AI is not the best. Even messages that are positive are sometimes marked as negative”).

Discussion

The present study aimed to provide an empirical insight into the effectiveness of the established and in organizations implemented tool Listen Léon, which is based on research of positive psychology and provides means to share gratitude among coworkers. To reach this goal, a mixed method design was selected, which yields broader understanding of participants’ experiences (Wester & McKibben, 2019).

Regarding the first hypothesis, after a month of using Listen Léon, participants did not report a change in their gratitude levels (*H1a*), PAWB (*H1b*), NAWB (*H1c*), prosocial behavior (both regarding individuals as well as the organization; *H1d*), or work performance (*H1e*), when compared to before the intervention. However, the results showed that the English language group, but not the German language group, reported significantly higher levels of gratitude after the intervention than prior to it. In regard to the second hypothesis, participants’ Listen Léon activity, measured by the number of sent and received Léons, could not be associated with the outcome variables, such as gratitude levels (*H2a*), PAWB (*H2b*), NAWB (*H2c*), prosocial

behavior (both regarding individuals as well as the organization, *H2d*), or work performance (*H2e*) in the whole sample. This shows that effects of the intervention were not correlated with the intensity of the participation in the intervention in the whole sample, at least not in the intensity scope of the current study. Nonetheless, the supplementary analyses with the two language groups separately revealed that for the English language group, the correlation between participants' Listen Léon activity and PAWB was only marginally significant, but showed, regardless of the small sample size, a medium effect. This means that those participants' PAWB was higher at Time 2, who were more engaged in the intervention. These findings could indicate that the intensity with which the participants were engaged in the intervention, does affect the possible outcomes of it. For the German language group, no such association could be found. While none of the hypotheses could be supported by the collected quantitative data regarding the whole sample, quantitative data provided by the English language group did partially support the hypotheses *H1a* and *H2b*.

Possible Explanations for the Differences Among Language Groups

While an increase in general gratitude levels was an expected outcome, it is interesting that only the English language group experienced it. The different languages regarding the questionnaires could be a possible explanation for differences among these two groups. Due to the fact that the GAC, the IRB and the OCB scales were back-translated by the authors and not validated before the implementation into this study, the questionnaires' semantics could have been one reason for the differences in the two language groups. On the other hand, back-translation is a widely used validation method (Tyupa, 2011) and, as the Cronbach's alphas revealed, the back-translated surveys showed similarly good internal consistency between the different languages.

Moreover, due to the ongoing Covid-19 pandemic and to counteract the spread of the virus, lockdown requirements were implemented around the world. These requirements were varying between countries and can significantly impact peoples' psychological well-being (Brodeur et al., 2021). Most of the study's participants were based in Germany and therefore got influenced by the same lockdown requirements. Consequently, we assume that any psychological impact of the ongoing pandemic was comparable among the language groups. However, not the participants' location but the used language of the application could have impacted the experience. While the teams of the English language group probably differed in

using either the German or English version of Listen Léon, the German language group did most likely only use the German version of the application. Qualitative data revealed that some participants were not satisfied with the German version of the Listen Léon application. It was indicated that translations lacked accuracy and the artificial intelligence often rejected sending positively framed Léons, which could have led to frustrations and a negative attitude towards the intervention.

This leads to another reason for different results between the groups - participants' diverse experiences with the application itself. For the purpose of gaining a deeper understanding of participants' experiences of the usage of Listen Léon, they were asked to indicate their motivation to use the application as well as the extent to which they enjoyed using it at Time 2. While the levels of motivation to use the application did not differ between language groups, the German language group reported significantly lower levels of enjoyment compared to the English language group. It is acknowledged that acceptability, which shows to what extent an intervention is suitable, satisfying, and attractive to people (Walsh et al., 2018), is a necessary condition in order for an intervention to be effective and yield positive outcomes (Sekhon et al., 2017). The current study did not directly investigate the acceptability of Listen Léon as an intervention, nevertheless, the reports of enjoyment of using the application could indicate that the English language group was more satisfied with the application than the German group and could thus gain significant positive outcomes due to a higher acceptance (Sekhon et al., 2017).

Furthermore, the two language groups differed in their mean age, with the English language group being significantly younger. The results also revealed a negative association between age and Listen Léon activity as well as between age and motivation to use the application. Older adults were less motivated to involve themselves in the intervention and thus used the application less than younger adults. Accordingly, participants' age could offer another explanation why the German language group did not show any positive changes from Time 1 to Time 2: It has been shown that the success of a new technology implementation in the workplace is influenced by the employees' attitudes towards it, which in turn is dependent on their age (Elias et al., 2012). Younger generations have in general a more positive attitude towards technologies, as they get introduced to it at an earlier stage in their life. Contrary, older generations can feel rather uncomfortable and possibly not satisfied to receive personal feedback regarding their character strengths through an application.

All in all, given the German language group's significant lower levels of enjoyment regarding the usage of Listen Léon, their older age as well as the presence of mostly in the German version occurring technical issues, it can be assumed that the English language group had in general a greater openness towards Listen Léon and a higher acceptance of the intervention itself. We argue that the English language group was in an advantageous state to show positive effects after the intervention.

Integration of Quantitative and Qualitative Data Results

There is no overall convergence between the findings of both quantitative and qualitative methods, meaning that both types of data did not reveal the same results. The quantitative data did not show any significant changes in the whole sample from Time 1 to Time 2. However, the qualitative data revealed mostly positive experiences of the participants regarding the usage of Listen Léon. Concerning participants' gratitude levels and PAWB, the answers to the open-ended questions showed that the majority of the respondents felt an increase in their levels of appreciation, as well as an increase of positive emotional experiences. In the quantitative data, this was only visible in the English language group. As mentioned earlier, gratitude is recognized at both state and trait levels (Wood et al., 2008). As the qualitative data indicated, participants mostly experienced a sudden and circumstantial increase in appreciation and positive emotions after receiving or sending a Léon which could indicate that the state level, rather than the trait level, of gratitude was increased by the intervention. Even though the gratitude state level can already be associated with positive outcomes such as an increase in positive affect (Wood et al., 2010), the trait level of gratitude has an overall stronger and more sustainable association to such desired outcomes (Wood et al., 2008). The gratitude scale used in the quantitative data part targeted trait levels of gratitude, as it asked participants to indicate their general feelings of gratitude in the past weeks (Froh et al., 2011). Thus, this could explain the differences in findings between qualitative and quantitative data.

To be aware of the positive things in one's life and to appreciate them is the core definition of gratitude (Peterson & Seligman, 2004). Consequently, to increase the individual's attention towards positive things in their lives is the essence of gratitude interventions (Locklear et al., 2020). Although the overall sample's gratitude levels did not increase, qualitative data as well as the English language group's quantitative data suggest an increase in positivity among the team members after using Listen Léon for one month. Our results show a tendency towards

an increase regarding individuals' focus on positivity, as many recipients reported a positive shift of mindset and perceived importance of focusing on positive values in others. Participants in the present study expressed such shift by gaining more confidence and feelings of significance, which were summarized in the sub-sub-theme *increased positive self-concept*. Another sub-sub-theme reflects noticing more positives and experiencing less stress, which has been suggested to be a matter of shifting one's mindset (Crum et al., 2013).

Some participants also reported that positive feedback culture was encouraged in the teams. A transformation regarding the feedback culture was not investigated in the scope of quantitative data. It is important to encourage positive feedback in workplaces as it has been shown to increase employees' self-efficacy (Reynolds, 2006). Also, enhancing performance through positive feedback is more likely to raise efficiency than correcting poor performance (Gifford, 2016). As Pritchard et al. (1988) state "The positive effect of feedback on performance has become one of the most accepted principles in psychology" (p. 338). Thus, the qualitative results of the present study indicate that Listen Léon is a suitable tool for organizations to promote positive feedback culture.

Some participants reported unsatisfactory experiences of the intervention, by either reporting no changes noticed after the intervention or expressing issues related to Listen Léon. Pre-existing good team relationships were mentioned as one of the reasons for no noticeable changes. This could be the cause why quantitative data showed no changes. Participants already had good team relationships; thus, it could be that a certain level of prosocial behavior was already existing prior to the intervention and Listen Léon simply helped to maintain it but not to increase it. Participants not perceiving any changes regarding their team relationships could also be influenced by them having little or no interactions among each other. The current study was conducted under the circumstances of the Covid-19 pandemic, which resulted in home office establishments. Not only did employees have to change their physical workplace, but also does the global pandemic expose people to psychological stressors such as lack of social interactions (Brooks et al., 2020) and the presence of uncertainty (Märtens et al., 2020). Thus, this study could have been influenced by the negative psychological consequences of the global Covid-19 pandemic which are yet still not well known to us. Due to the lack of interactions among coworkers, it might have been more difficult to recognize any changes in the team's relationships, like the qualitative data suggested.

Even though the participants had a month to participate in the intervention, which is a rather long time period compared with other positive psychology interventions (Seligman et al., 2005), the participants indicated that they did not notice any changes within their work experiences and team relationships and even suggested a longer trial to being able to manifest any changes in their team. Positive psychology interventions have been shown to have an immediate positive effect on people's feelings and behaviors, however, to reach long-term effects usually takes longer time and effort (Oades et al., 2020). The increase in the proximal measure of gratitude seen in the quantitative data of the English language group as well as the resulting positive emotions indicated in the qualitative data could suggest that short-term effects were achieved, while more time would be needed to see an improvement in distal measures, such as well-being, prosocial behavior, and work performance (Kaplan et al., 2014).

As another explanation for unsatisfactory experiences, participants mentioned the Léon's content. To be more specific, the lack of content ideas, the required minimum length of 140 characters a Léon has to have in order to be sent and the *Lend me a feather* function were indicated as underlying reasons for unsatisfactory experiences. The required minimum length exists to ensure to some extent that the feedback is descriptive enough for the receiver to understand which behavior was appreciated. Also, if the feedback is descriptive and precise the higher its benefits, such as a better mood at work and higher job satisfaction (Sommer & Kulkarni, 2012). Even though this feature aims to make the intervention more functional, some participants rather disliked it and experienced it as a burden. Further, participants struggled with content ideas. The application's *Lend me a feather* function tries to counteract the lack of content ideas by giving inspiration on how a Léon could be designed. Nonetheless, participants experienced these software-produced Léons as rather artificial and could not treat them as honest appreciation. Unsatisfactory experiences could have possibly been reduced if more focus were put on explaining the underlying reasons and the advantages coming with these features during the implementation of Listen Léon in a team, as such clarifications of certain features tend to result in a higher acceptance rate (Slusher & Anderson, 1996).

As mentioned above it could be possible that the quantitative measures do not show a difference yet due to the trial lengths being too short to manifest significant changes regarding participants' overall well-being, work performance, and prosocial behavior. It is also possible that Listen Léon activity might have been lacking structured participation to induce any changes.

Previously evaluated positive psychology interventions are characterized by a structured participation in exercises (e.g., once a day, three times per week; Donaldson et al, 2019; Seligman et al., 2005), while in the current study participants were free to choose how much they want to involve themselves in using Listen Léon. As a result, the amount of participation has differed among the participants, possibly yielding mixed effects. The Positive-Activity Model by Lyubomirsky and Layous (2013) states that the dosage of a positive activity matters. While some exercises work better when performed every day, others are more effective when performed once a week. Thus, it would be beneficial to find out the optimal dosage of the present intervention required to reach positive changes.

Another reason could be that the effects of possible changes of (distal) outcome measures are smaller and the current sample does not provide the statistical power due to its size in order to reveal such small effects. The current results should therefore be interpreted carefully and with having its rather small sample size in mind. Moreover, the absence of a control group should be taken into consideration as well. Including a control group would help to isolate the effects of the intervention and to eliminate the placebo effect (Seligman et al., 2005).

In general, the quantitative data and solitary the English language group could only partially verify the previous hypothesized outcome effects of using Listen Léon for one month. However, when looking at the qualitative data the majority of the participants indicated to having noticed an increase in gratification as well as a shift towards more positive mindsets. We argue that these findings are the first sign of Listen Léon being a successful gratitude intervention.

Strengths of the Current Study

So far, the amount of positive psychology interventions in an organizational context is limited. Together with the growth of popular psychological press circuit some of these interventions have questionable scientific foundations which results in poor efficacy, yielding a mistrust in positive psychology (van Zyl & Rothmann, 2020). The current study contributes to the research of positive psychology and interventions focusing on gratitude in an organizational context. To our knowledge this is the first study that measures the effect of sending and receiving anonymous, descriptive, positive feedback to one's colleagues as well as the first to measure the effects of the application Listen Léon on employees.

Another advantage of this study was the applied methods. Not only proximal measures that aimed to evaluate the effect of receiving and sending positive messages, but also distal

measures such as participants' work performance and prosocial behavior were included. The intervention's effect on these distal measures might be direct or caused through proximal measures (e.g., well-being or gratitude) as mediators (Kaplan et al., 2014). The results showed that after one month of intervention time, proximal, but not distal measures increased significantly. Thus, some insight was gained into the underlying mechanisms of gratitude interventions and their effects on positive outcome measures. Second, repeated measures were used in the current study. This allows not only to control for individual differences regarding measurements but also to assess an effect over time, so the difference between before the intervention and after the intervention.

Third, a mixed-methods design was applied, which was chosen in order to gain a deeper insight into people's experience with Listen Léon. As stated by Wester and McKibben (2019), by combining quantitative and qualitative methodologies and integrating both types of results, research studies provide more breadth and depth regarding the phenomena of interest. Thus, the mixed-methods design provided the current study with a more holistic view of the research question. The open-ended questions helped to gain a more elaborative and complementary insight: for example, into participants' particular feelings after sending or receiving a positive message, participants' mostly positive views towards the intervention as well as their belief of the intervention to be beneficial when implemented in the long run and some difficulties that participants came across, which were mostly related to technical issues. These insights are important because they reveal the positive attitudes towards the intervention and the potential of it, which could not be seen from quantitative data alone.

Lastly, the current study not only aimed to measure the psychological impact of the intervention, but it was also able to control for the level of participation in the intervention, which is often overlooked in intervention studies. Quantitative data suggest a connection between Listen Léon activity and participants' PAWB for the English language group, meaning that the activity showed by the English language group could show sufficient amount of dosage to show positive effects of Listen Léon.

Study Limitations and Suggestions for Future Research

Several limitations of the present study are important to take into account when interpreting the results. Even though the current sample size was adequate to proceed with the former analyses, it could have still been too small to reach sufficient effect sizes. Although over

100 participants agreed to participate in the study, the attrition rate was rather high (33%). In order to counteract the high attrition rate, future studies should consider scheduling another webinar for filling out the follow up questionnaire. This way participants have a fixed time frame for the second data collection which includes the whole team and therefore recreates the scenario of the first data collection round. This might not only reduce the attrition rate from the first data collection to any follow up measurements but also set the participants in a comparable situation at all data collection times. Hence, the information provided by the participants at different times are equally noisy regarding circumstances and situational influences, making the data provided at different time points more comparable.

Another limitation of the present study is the global Covid-19 pandemic. As people are affected by it and companies are suffering economically, this might have had an effect on the results. Thus, it would be beneficial to conduct another similar study in the future, when the pandemic is no longer having an impact on daily lives and people are working in their offices on a regular basis again.

The third limitation is the reliance on self-report questionnaires. Even though it is one of the most commonly used assessment methods in psychological research, it has some disadvantages, such as social desirability bias and response bias (Demetriou et al., 2015). Moreover, as self-report measures are highly subjective, it may provide invalid results, especially regarding one's work performance. Participants might believe that their performance has changed, but it is difficult to know whether this was actually the case or rather just their perception (Dubreuil et al., 2014). For this reason, future studies should consider including more objective measures of work performance, for example, daily output, productivity rate, or supervisor feedback (Dubreuil et al., 2014; Pransky et al., 2006). On the other hand, self-reported questionnaires is a good method to find out about participants' gratitude and affective well-being, as such variables come from within the person and can't be measured objectively.

Furthermore, to include more follow up measures at different time points could be beneficial. Implementing Listen Léon for longer trials than 4 weeks while measuring outcome variables at several time points, such as after a week, in order to quantify possible short-term effects like Seligman et al. (2015) suggested as well as for example after 3 and 6 months, to capture long-term effects, would give more insight into the effectiveness over time. Distal and proximal measures would get investigated more thoroughly this way as well. Another future

research suggestion would be to divide participants into groups of sending and receiving Léons. The differences between expressing and receiving gratitude are not well researched yet and might have unlike effects on peoples' gratitude levels as well as respective advantages such as positive affective well-being (Yoshimura & Berzins, 2017). Moreover, some of the participants responded in the open-ended questions that they did not notice any changes within their teams because of already existing good team relationship. Thus, future research should take this into account and control for baseline levels of team satisfaction before the intervention starts.

Several implications for future research regarding differences between the two language groups could be mentioned. First of all, back-translated scales of GAC, IRB and OCB should be validated before implementing them into the overall questionnaire. Furthermore, future studies should take participants' acceptance of Listen Léon as an intervention into consideration. As mentioned above, participants might have been influenced by the extent to which they found Listen Leon acceptable. Also, it would be beneficial to investigate who can benefit from the intervention the most. As the current study did not take participants' tenure into consideration, this could be a direction for future research.

Lastly, Listen Léon is not only a gratitude-based application, but is also built on character strengths approach. Character strengths is one of the key components in positive psychology which often appears in intervention programs (Dubreuil et al., 2020). As the present study looked only into the construct of gratitude, it could be beneficial to take character strengths into account when measuring the psychological impact of the application in order to investigate Listen Léon's full potential. An example for such research would be to investigate character strengths usage and its potential increase after the intervention.

Practical Implications

It has been recognized that while science moves slowly, the practice is growing rapidly, which causes a huge gap (Niemiec, 2018). Since its establishment, positive psychology gained a lot of interest and popularity, which makes it especially vulnerable for the science-practice gap. The present study makes a step towards filling this gap and provides scientific support for the newly established application Listen Léon.

Brief and easy to complete interventions are more attractive and feasible for people, especially when it is implemented in a work environment. It is visible from previous studies that time can be a big issue for such interventions to be successfully implemented (e.g., Kaplan et al.,

2014). In the current intervention study, time did not appear to be an issue, as no participants reported it to be time consuming. Thus, this study reveals that Listen Léon is rather an easy tool for a positive psychology intervention in a workplace.

Conclusion

The overall aim of the present thesis was to explore the effectiveness of the online application Listen Léon. Although the hypotheses were not supported for the whole sample, explorative and qualitative results indicate that Listen Léon has a potential of providing positive psychological impact in organizations. However, further studies are needed in order to generalize our results and investigate under which circumstances the intervention is most effective. Our research provides the first baseline of Listen Léon as being an effective gratitude intervention in the organizational context. Moreover, the study contributes to a rapidly growing field of positive psychology, especially in the context of organizations. By providing scientific support for an already established tool, the study contributes to filling the gap between science and practice.

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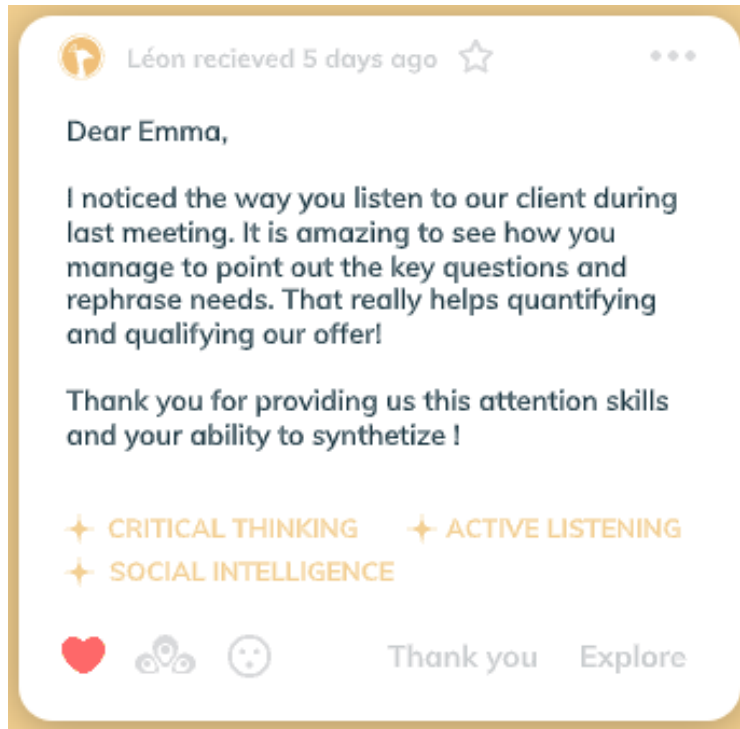
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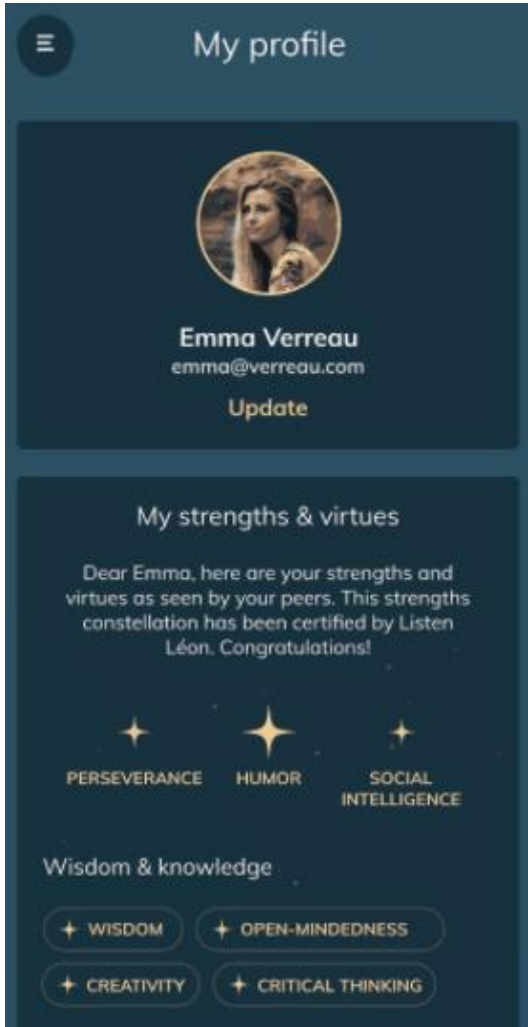
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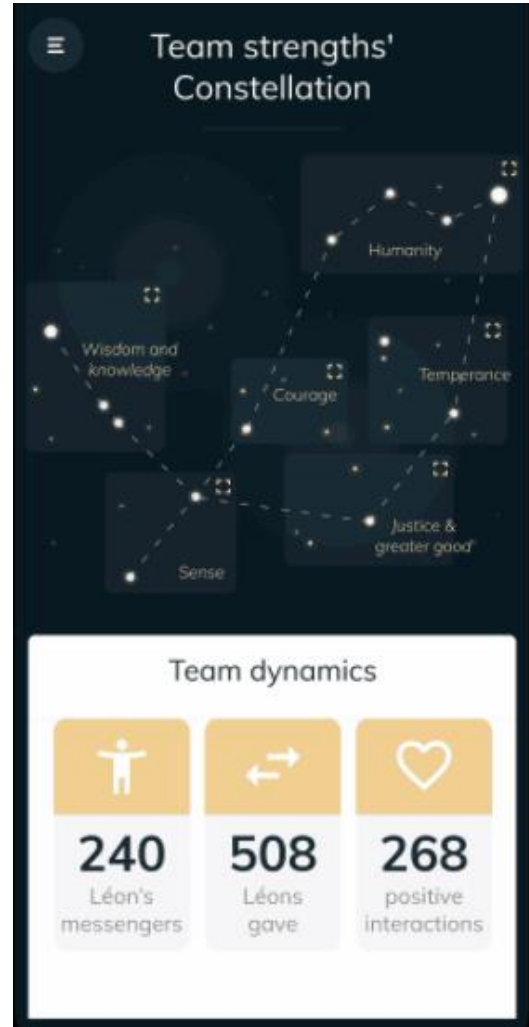
Appendix A**Example of a Léon: A descriptive, positive, anonymous message to one's coworker**

Appendix B

Example of a personal character strengths profile



Example of a team's character strengths profile



Appendix C
Recruitment email



We want to give you the chance to bring some positivity into people's lives by offering you the chance to participate in our study on employee well-being.

What is Listen Léon?

- A platform to send **anonymous, positive, descriptive feedback and compliments (Léons)** to people around you at work.
- The app uses **Artificial Intelligence** to analyse your strengths based on the feedback from co-workers
- A tool to express your gratitude to each other
- Available as an **app or web app**

📩 Léon received 5 days ago
☆
⋮

Dear Emma,

I noticed the way you listen to our client during last meeting. It is amazing to see how you manage to point out the key questions and rephrase needs. That really helps quantifying and qualifying our offer!

Thank you for providing us this attention skills and your ability to synthesize!

+ CRITICAL THINKING
+ ACTIVE LISTENING

+ SOCIAL INTELLIGENCE

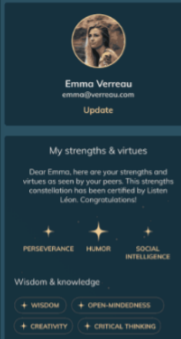
❤️ 👤 😊
Thank you Explore

Airbus has already successfully implemented Listen Léon in their company

How can you participate?:

If you are a team with 6 or more employees you are welcome to participate in the study and will get access to a premium Listen Léon account **completely free of charge**. You will fill out a survey and then you can use the app for 3-4 weeks after which we will send out a final survey to evaluate the results.


My profile



Your benefits of being part of this study

- Getting inside into your character strengths: ← as an individual and as a group →
- Strengthening your teams' informal ties.
- Impacting people positively and creating more meaningful societies.
- Generating the culture of collaborative recognition in your company.
- Contributing to science by getting the chance to try out a promising application free of charge.

Team strengths' Constellation



Team dynamics

240 Léon's Messages	508 Léons given	268 positive interactions
------------------------	--------------------	------------------------------


Your Safety:

- All information collected in this study will be anonymous
- Your Listen Léon profile is only visible to you and no one else
- A message (Léon) is only visible to the sender and the receiver of that message
- Listen Léon is not a HR tool, a ranking or social media platform;
- Listen Leon relies on **Artificial Intelligence** to ensure that the messages are in fact positive and about people's inner values.

For more information about Listen Léon visit: <https://listenleon.com/en/>

We would be happy to schedule an online meeting or a phone call to tell you more!

Evamaria Rauen and Lina Marija Balčiūnaitė
Ms. Sc. Students, Lund University
Contact: linabalc@gmail.com




Appendix D

Material Used in the Webinars

Welcome!

Here is some important information on how to participate in our research study and how to use Listen Léon. We hope you find it helpful and if you have any questions, don't hesitate to contact us!



What is Listen Léon?

Listen Léon is a platform to send **anonymous, positive, descriptive feedback and compliments (Léons)** to people around you at work. It is a tool to express your gratitude to each other. Based on these messages (Léons) an artificial intelligence analyses character strengths for you personally as well as for your whole team.

1. Filling out a short survey

As your free usage of premium accounts of Listen Léon is part of science, we kindly ask you to fill out a short survey before you download and start using Listen Léon. The survey is **completely anonymous**, and your answers are very important for our research project! We will ask you to fill out another survey in four weeks - to evaluate your experience using Listen Léon.



Or scan the QR code to get to the survey

Link to the survey: <https://www.soscisurvey.de/ListenLeon/>
If you already filled out the survey during the webinar, please don't do it again.

Note: We want to emphasize that the usage of the app goes hand in hand with contributing to science. We are grateful that you help us doing research and that we can help you to spread gratitude and positive vibes in your team!

2. Setting up your account:

Now let's set up your Listen Léon account:

- To use the webapp go to: <https://app.listenleon.com/sign>
- You can also download the app on your phone if you want.

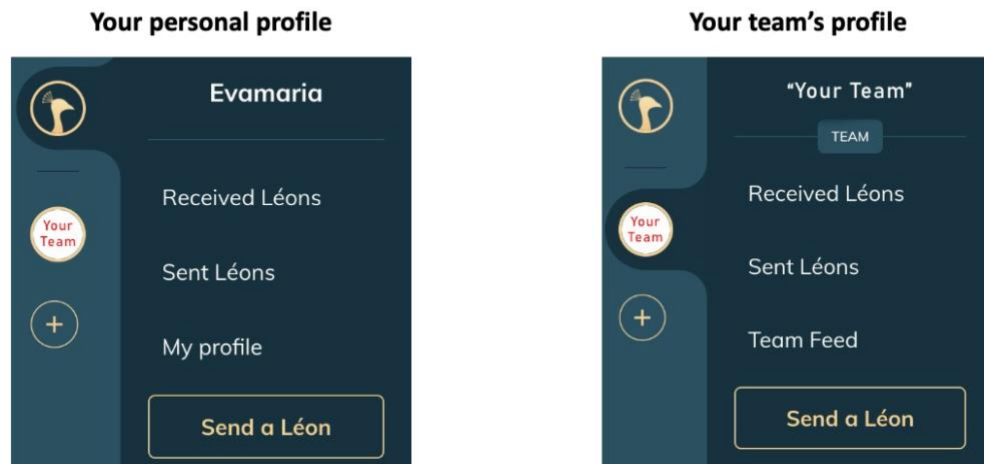


- Introduce yourself to Listen Léon, use your work email so it's easier for your coworkers to find you and send you compliments, Léons. (Data protection regulation: Listen Léon is bounded to the GDPR, therefore does not share your personal data with third parties)

3. Find your team on Listen Léon

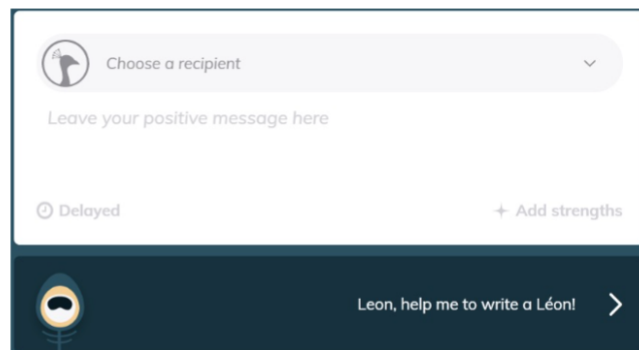
- Find your team: press on the + sign on the left, type in your company's name (look for your logo) and press on it. You will soon be admitted by the administrator.

Once you find your team, your menu bar to your left will look like this:



4. How to send a Léon?

- Press on **Send a Léon**
- Then, you will see a message field like this:
- You can find your coworker (**Choose a recipient**) that you want to express your gratitude to and write a short message: a Léon needs to have at least 140 characters and must be about someone's *inner* values



- You can also add character strengths to your Léon to put the spotlight on your coworker's inner virtues (**Add strengths**) - you can choose up to 3 character strengths that you associate with your coworker.
- You can also choose *when* you want the message to be sent (**Delayed**). Choose a day and time when your coworker should receive this Léon. If you don't choose a specific time, the message will be sent to your coworker at a random time. This can take up to 10 days.
- You can also choose an option **Lend me your feather, to write a Léon** - In case you can't find the right words, you will only need to pick a strength that you associate with your coworker and the app will generate a message for you. You can also edit the suggested Léon afterwards.
- Once you are finished with your compliment you press **Send this Léon** and enjoy the feeling of giving a genuine gift to your coworker!

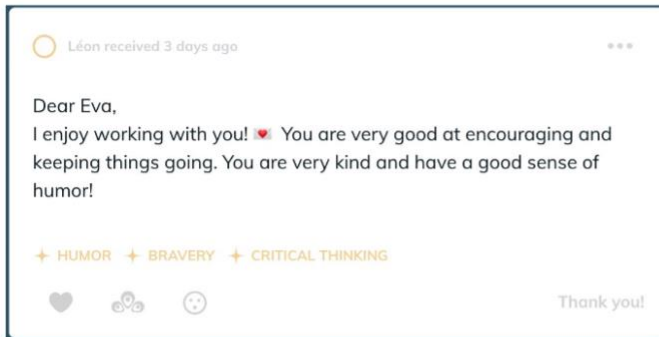
Note: Please do not sign your Léons. Léons are supposed to be **anonymous** - your coworker should not know *who* sent him/her this message.

Why anonymous?:

- Ensures pure altruism, no benefits for the sender
- More impact on the receiver
- Prevents from interpretations

5. Receiving a Léon:

- Once you received a Léon you will get a notification email.
- Here is an example of a received Léon:

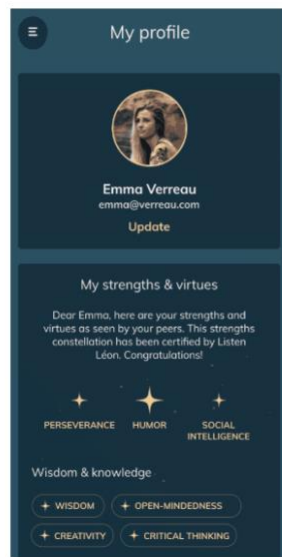


- Below the message you can see three strengths that you coworker associates with you.
- Below the strengths you can see different functions which you can use to react to the message:

- ❤️ → It goes straight to my heart
 - 👤 → I'll dare even more!
 - 😊 → What a discovery!
- or **Thank you!**

Note: You only get notification emails in case you received a Léon. You do not get emails for reactions to Léons that were sent by you.

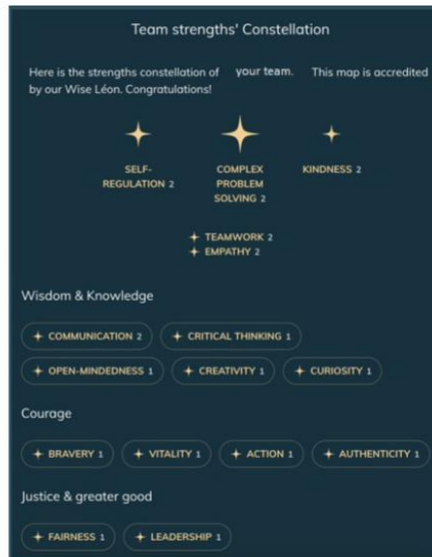
Your personal profile



- The app uses **Artificial Intelligence** to analyse your strengths based on the feedback from your coworkers.

- In your personal profile you will see the strengths and virtues that you exhibit at work. **Your personal profile is only visible to you.**

Your team's profile



- In your team's profile you will see the constellation of your team's strengths, which are based on the frequency of the personal strengths associated with each of your coworkers.



Your Safety:

Your safety regarding Listen Léon:

- Listen Léon is operating according to the general data protection regulation
- Your profile is only visible to you
- Use of Artificial Intelligence to ensure that just positive compliments about someone's inner values rather than their nice dress or suit are sent

Your safety regarding our research study:

> All the information collected in this study is anonymous and can at no time be associated with your name, your team or your company.

For any further information on Listen Léon visit: <https://listenleon.com/en/>

Léon Video Tutorials: <https://listenleon.com/en/les-tutos-leon/>

We thank you for contributing to science and for joining the movement of positivity at your workplace!

If you have any questions or problems, please contact us!
We will send you a link to another short survey in 4 weeks - it is very important that you fill out both surveys - only then we can use your data for our research study.
We hope you will enjoy your experience with Listen Léon!

Best wishes,

Lina Marija Balčiūnaitė and Evamaria Rauen,
M. Sc. Students, Lund University
Contact: ev3705ra-s@student.lu.se



Appendix E

Questionnaire T1

Page 01

Welcome!

WE01

We are master of science students in psychology at Lund University, Sweden, and we kindly invite you to participate in our master thesis in which we evaluate the application Listen Léon in regard to positive psychology in the organisational context. Completing the survey will take around 5-10 minutes. We appreciate your time!

Page 02

Your Rights and Privacy

CO01

Your participation in this survey is voluntary. At any time, you may exit the survey without any explanation. All information responded will be kept anonymous and the data can not be associated with your name.

Benefits and Risks

By participating in this study, you contribute to ongoing research on positive psychology. Furthermore, your responses will help us to evaluate the application Listen Léon in the scope of our master thesis.

There are no foreseeable risks in this research study.

Research Team

This master thesis study is performed by two psychology students from Lund University (Lina Marija Balčiūnaitė and Evamaria Rauen) under supervision of Tomas Jungert (Department of Psychology, University of Lund) in collaboration with the Université du Québec à Montréal (UQAM).

You are welcome to contact researchers at any time if you have any questions regarding this study at lina.balciunaite.4466@student.lu.se and evamaria.rauen.3705@student.lu.se.


By clicking "I agree" you agree that:

- You have read and understood the information stated above
- You voluntarily agree to participate in the study
- You are 18 years of age or older

I agree

CO02

Please indicate your gender..

DE01 

- female
- male
- other

Please indicate your age.


DE02 

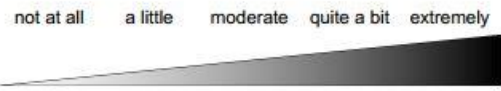
years

Please indicate the nationality of your employer (the company you work for).

DE03 


Think about how you have felt during the past weeks.

GA02 




Please indicate your level of feeling the following

Grateful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Thankful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Appreciative	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

WB01 

Below are a number of statements that describe different emotions that a job can make a person feel. Please indicate the amount to which any part of your job (e.g., the work, coworkers, supervisor, clients, pay) has made you feel that emotion in the past 30 days.

	Never	Rarely	Sometimes	Quite often	Extremely often
My job made me feel...					
Angry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Anxious	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ease	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bored	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Calm	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Content	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Depressed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Discouraged	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Disgusted	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ecstatic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Energetic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Enthusiastic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Excited	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fatigued	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Frightened	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Furious	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gloomy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Inspired	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relaxed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Satisfied	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

WP02

Regarding your performance at work, how often do you...?



- Adequately complete assigned duties ○ ○ ○ ○ ○
- Fulfill responsibilities specified in job description ○ ○ ○ ○ ○
- Perform tasks that are expected ○ ○ ○ ○ ○
- Meet formal performance requirements of the job ○ ○ ○ ○ ○
- Engage in activities that will directly affect your performance evaluation ○ ○ ○ ○ ○
- Neglect aspects of the job you are obliged to perform ○ ○ ○ ○ ○
- Fail to perform essential duties ○ ○ ○ ○ ○

The Last Step!

Code

Our study consists of two questionnaires. The link to the second questionnaire will be send out in 4 weeks from today via e-mail.

In order to be able to combine your two questionnaires while still keeping all your information anonymous to us, we would like to ask you to generate a personal identity code. You will be asked to indicate the same code at the end of the second questionnaire in four weeks.

The code consists of the **first three letters of your mother's first name** and the **year your farther was born**.

For example: Emma's mother's name is *Elizabeth* and her father was born in *1938*.

Emma's personal code is: *ELI1938*

Please note: enter letters only in CAPITALS.

PI01

Please indicate your personal code here:

Dear participant,

Thank you for completing the survey and therefore making our master thesis possible!

If you have further questions or concerns about your participation in the study, please feel free to contact us:

Lina Marija Balčiūnaitė: lina.balciunaite.4466@student.lu.se

Evamaria Rauen: evamaria.rauen.3705@student.lu.se

Your answers were transmitted, you may close the browser window or tab now.

Kind regards,

Lina and Eva

Appendix F
First Reminder Email



Dear (team's name),

We hope you are enjoying your experience with Listen Léon.

We encourage you to make the most of this opportunity and tell your co-workers about their strengths, so they feel appreciated.

- ▶ Sending as many Léons as possible will help to get a better insight into your personal character strengths as well as your team strengths constellation.
- ▶ It is also a good chance to show that you care about your co-workers, which, under the current circumstances, might be harder than ever.

Let's dare to care, let's dare to share!

Best wishes,
Eva & Lina



LUND
UNIVERSITY

UQÀM
Université du Québec à Montréal

Second Reminder Email

Dear **(team's name)**,

You are about to approach the last week of your experience with Listen Léon.

Studies in positive psychology have shown that if I dare to give gratitude to myself, I am more inclined to give it to others.

Thus, while appreciating those around you at work, don't forget to give credit to yourself!

Let's dare to care, let's dare to share!

Best wishes,
Eva & Lina



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Université du Québec à Montréal

Appendix G

Questionnaire T2

Page 01

Welcome to the final survey!

TC01

This survey aims to evaluate your experience with Listen Léon. Before your journey with Listen Léon began, you filled our the first questionnaire. We can only benefit from your contribution to our master thesis if you fill out this second questionnaire as well.

Completing the survey will take around 10 minutes. We appreciate your time!

Page 02

Your Rights and Privacy

TC01

Your participation in this survey is voluntary. At any time, you may exit the survey without any explanation. All information responded will be kept anonymous and the data can not be associated with your name.

Benefits and Risks

By participating in this study, you contribute to ongoing research on positive psychology. Furthermore, your responses will help us to evaluate the application Listen Léon in the scope of our master thesis.

There are no foreseeable risks in this research study.

Research Team

This master thesis study is performed by two psychology students from Lund University (Lina Marija Balčiūnaitė and Evamaria Rauen) under supervision of Tomas Jungert (Department of Psychology, University of Lund) in collaboration with the Université du Québec à Montréal (UQAM).

You are welcome to contact researchers at any time if you have any questions regarding this study at lina.balciunaite.4466@student.lu.se and evamaria.rauen.3705@student.lu.se.

By clicking "I agree" you agree that:

- You have read and understood the information stated above
- You voluntarily agree to participate in the study
- You are 18 years of age or older

I agree

TC02

You personal identification code!

TI02

In the first questionnaire you were asked to create a personal identification code so we can combine your two questionnaires while still keeping all your information anonymous to us. It is very important that you indicate *the exact same code* as in the first questionnaire.

Your code consists of the **first three letters of your mother's first name** and the **year your farther was born**.

For example: Emma's mother's name is *Elizabeth* and her father was born in *1938*.

Emma's personal code is: *ELI1938*

Please note: enter letters only in CAPITALS.

TI01

Please indicate your personal code here:

Please indicate your gender..

TD01

- female
 male
 other

Please indicate your age.

TD02

years

When you look into your own Listen Léon account you can see the messages (Léons) you sent and received during your experience with Listen Léon. We kindly ask you to count ALL of them manually and indicate the numbers of sent as well as received Léons.

LE01

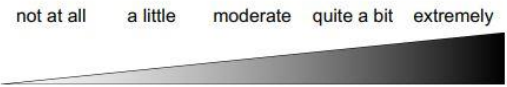
Note: Please count the Léons under the tab "personal profile", NOT under "teams feed".

How many Léons did you sent?

How many Léons did you receive?

Think about how you have felt during the past 4 weeks.

TG01



Please indicate your level of feeling the following

	not at all	a little	moderate	quite a bit	extremely
Grateful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Thankful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Appreciative	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Below are a number of statements that describe different emotions that a job can make a person feel. Please indicate the amount to which any part of your job (e.g., the work, coworkers, supervisor, clients, pay) has made you feel that emotion in the past 30 days. TB01

	Never	Rarely	Sometimes	Quite often	Extremely often
My job made me feel...					
Angry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Anxious	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ease	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bored	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Calm	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Content	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Depressed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Discouraged	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Disgusted	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ecstatic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Energetic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Enthusiastic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Excited	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fatigued	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Frightened	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Furious	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gloomy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Inspired	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relaxed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Satisfied	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Regarding your performance at work in the past 4 weeks, how often do you...?

TP01



- Adequately complete assigned duties.
- Fulfill responsibilities specified in job description.
- Perform tasks that are expected.
- Meet formal performance requirements of the job
- Engage in activities that will directly affect your performance evaluation.
- Neglect aspect of the job.
- Fail to perform essential duties

Please use the respective slider to answer the following questions.

QA06

How high was your motivation to use Listen Léon?

0%

100%

QA07

How much did you enjoy using Listen Léon?

0%

100%

Additional voluntary feedback

QA01

The following open ended questions can be used as an additional feedback regarding your experience with Listen Léon.

If you wish to not answer them, you are welcome to skip this page by scrolling down and clicking 'next'.

How did it make you feel to receive a Léon?

QA02

How did it make you feel to send a Léon?

QA03

What changes, if any, did you notice in your team's relationships since you started using Listen Léon?

QA04

How did Listen Léon, if at all, influence your daily work experience?

QA05

Is there anything else you would like to tell us regarding your experience with Listen Léon or your participation in our study?

QA08

Page 12
EMAIL

Interested in the results of our research?

EM01

If you are, you can type in your email address and we will send you the final results once they are analysed. Don't worry, your email address will be saved in a separate data file and can not be associated with any of the information you just provided. Anonymity is still guaranteed.

If not interested, just go ahead to the next page.

Your Email Address:

EM02

Dear participant,

Thank you for completing both of the surveys and therefore making our master thesis possible!

We are very grateful to you!

If you have further questions or concerns about your participation in the study, please feel free to contact us:

Lina Marija Balčiūnaitė: lina.balciunaite.4466@student.lu.se

Evamaria Rauen: evamaria.rauen.3705@student.lu.se

Your answers were transmitted, you may close the browser window or tab now.

Have a great day!

Kind regards,

Lina and Eva

Appendix H

Cronbach's Alpha Scores for English and German Versions as Well as the Whole Sample at T1 and T2 for Each Scale

Scale	Cronbach's alpha					
	English (<i>n</i> = 28)		German (<i>n</i> = 29)		Whole sample (<i>N</i> = 57)	
	T1	T2	T1	T2	T1	T2
GAC	.87	.83	.66	.89	.79	.89
PAWB	.87	.88	.80	.80	.82	.83
NAWB	.77	.85	.92	.91	.85	.88
IRB	.70	.77	.68	.73	.70	.72
OCBI	.82	.77	.76	.85	.81	.78
OCBO	.89	.85	.59	.85	.85	.88

Note. T1 = Time 1; T2 = Time 2; GAC = Gratitude Adjective Checklist; PAWB = Job-Related Positive Affective Well-Being; NAWB = Job-Related Negative Affective Well-Being; IRB = In-Role Behavior Scale; OCBI = Organizational Citizenship Behavior Scale regarding individuals; OCBO = Organizational Citizenship Behavior Scale regarding the organization.

Appendix I
Normality Test for all Dependent Variables

Variables		Test of Normality (Shapiro-Wilk)							
		<i>M</i> (<i>SD</i>)		Median		<i>W</i>		<i>p</i>	
		T1	T2	T1	T2	T1	T2	T1	T2
GAC	E	10.54 (2.38)	11.46 (1.97)	10.00	12.00	.929	.950	.057	.195
	G	9.66 (1.80)	9.38 (2.43)	10.00	10.00	.909	.923	.016*	.037*
PAWB	E	31.82 (5.87)	31.32 (5.75)	33.00	31.50	.942	.957	.128	.303
	G	33.41 (4.59)	32.41 (4.77)	34.00	33.00	.925	.972	.041*	.628
NAWB	E	20.32 (4.85)	19.93 (5.55)	20.00	18.00	.978	.915	.791	.027*
	G	21.17 (6.85)	21.52 (7.54)	20.00	20.00	.892	.915	.006**	.023
IRB	E	24.71 (2.73)	24.79 (2.69)	25.00	25.0	.927	.971	.052	.612
	G	25.21 (3.05)	25.38 (3.02)	25.00	25.00	.949	.947	.174	.157
OCBI	E	40.36 (7.01)	40.89 (6.73)	40.50	42.00	.983	.955	.914	.260
	G	44.31 (5.51)	43.45 (6.24)	44.00	44.00	.980	.938	.835	.087
OCBO	E	37.50 (8.80)	35.86 (8.07)	38.00	37.50	.978	.951	.793	.208
	G	43.48 (4.27)	43.48 (6.53)	44.00	44.00	.946	.953	.145	.221
MWMS	E	46.93 (8.80)	46.25 (8.42)	47.50	47.50	.952	.891	.222	.007*
	G	51.76 (7.97)	51.17 (7.87)	52.00	51.00	.972	.942	.603	.117
Listen Léon activity	E		8.86 (0.69)		8.50		.953		.233
	G		9.68 (0.69)		9.00		.928		.002**
Motivation	E		60.71 (4.94)		62.00		.923		.040*
	G		56.47 (3.51)		56.00		.947		.015*
Enjoyment	E		68.21 (4.80)		73.50		.938		.097
	G		60.68 (3.66)		64.00		.933		.004**

Note. $N = 57$. E = English language group; G = German language group; GAC = Gratitude Adjective Checklist; PAWB = Job-Related Positive Affective Well-Being; NAWB = Job-Related Negative Affective Well-Being; IRB = In-Role Behavior Scale; OCBI = Organizational Citizenship Behavior Scale regarding individuals; OCBO = Organizational Citizenship Behavior Scale regarding the organization; MWMS = Multidimensional Work Motivation Scale; Motivation = motivation to use Listen Léon; Enjoyment = indicated enjoyment of using Listen Léon.

^a Reflects the number of the messages sent and received on Listen Léon.

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