HappyCal: Designing Text and Image-Based Supports for Savouring Positive Work Experiences

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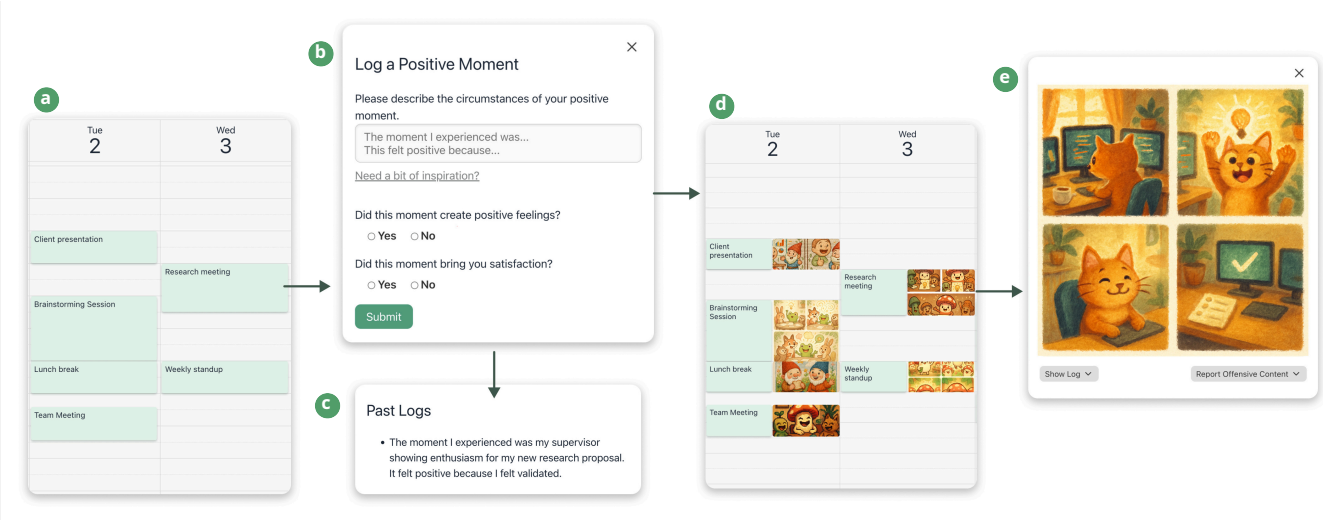

Figure 1: *HappyCal*: a calendar application for savouring positive work experiences through text and image features. A worker using *HappyCal* would typically have the following interaction sequence: a) they would begin by adding work events to their calendar, b) for each work event, the worker would log their positive experience, c) as part of logging, workers can also look back at their past logs, d) the logs are converted into whimsical images created using generative AI, and are used to augment the calendar entry, and e) finally, the worker can refer back to the images and corresponding logs to reflect upon the entries.

Abstract

Savouring positive work experiences can promote positive affect and well-being at work, yet there is limited guidance on how digital applications can support workers to engage in savouring. We developed *HappyCal*, a work-focused savouring application offering two forms of savouring support: text-based, a common modality in workplace reflection tools, and images, a largely unexplored approach in work-related savouring. We conducted an exploratory qualitative study where participants (N=36) used *HappyCal* over five days and engaged in savouring through either a text-only modality (n=17) or text input paired with image output (n=19). We found that (1) participants in both groups reported heightened awareness of work-related emotions through positive reflection, (2) Text-based support fostered conscious emotional processing, while image-based support offered quick overviews and amplified the positive experience, and (3) image-based support introduced a sense of playfulness into savouring. Informed by our results, we discuss implications for designing savouring supporting technologies for work contexts.

CHIWORK '26, Linz, Austria

ACM ISBN 979-8-4007-2429-9/2026/06
https://doi.org/10.1145/3808045.3808067

CCS Concepts

• **Human-centered computing** → **Empirical studies in HCI**; **Interaction techniques**; **Systems and tools for interaction design**.

Keywords

Savouring, Design, Positive Computing, Work

ACM Reference Format:
Molly Stewart, Minghao Cai, Anthony Tang, Sam Liu, Chris Mosunic, and Sowmya Somanath. 2026. HappyCal: Designing Text and Image-Based Supports for Savouring Positive Work Experiences. In *Proceedings of the 5th Annual Symposium on Human-Computer Interaction for Work (CHIWORK '26), June 22–25, 2026, Linz, Austria.* ACM, New York, NY, USA, 23 pages. https://doi.org/10.1145/3808045.3808067

1 Introduction

Positive psychological interventions (PPI) in the workplace involve self-directed activities that aim to support worker happiness and well-being [27, 46]. *Savouring* is a type of PPI, which focuses on attending to, appreciating, and enhancing positive experiences [12, 47]. It aims to augment and prolong positive emotions, and has been recommended to support work-related well-being [33, 41]. To practice savouring, individuals can select different types of strategies, such as attempting to take in experiences through multiple senses, making lists of good things, taking mental pictures to build memories, and reminiscing about such experiences [11, 12, 33].

Research has shown that engaging in savouring processes can boost and prolong positive emotions [12, 69], foster gratitude and pride [10], and increase overall life satisfaction [69]. In a work context, increased positive emotions have been linked to higher job satisfaction, work engagement and performance, and can help reduce the impact of work-related stress [33]. More recently, digital applications aimed to facilitate PPIs, such as savouring, have been increasingly developed as an alternative to traditional on-paper or in-person methods [13, 82]. This has introduced more accessible and convenient options for capturing and reflecting on every day work memories (key processes of savouring) [83], and has enabled people to more easily become aware and reminisce on experiences in their personal lives [24, 42, 43, 45].

Despite the potential benefits of savouring positive work experiences, several barriers may limit people's ability to engage in it. At a basic level, workers may find it difficult to use well-being apps that are not well integrated with their workflow [14, 87]—a challenge that restricts the entire process. Work well-being applications tend to focus on stress management and productivity, with explicit attention to positive experiences being put to the side [3, 21, 22, 38, 51, 71]. In practice, the ability to capture and reminisce on positive moments at work can also be a challenge due to work contexts [83]. Therefore, better supporting savouring strategies in workplace settings may help people better engage with positive experiences and foster emotional awareness and appreciation of work-related events.

Human-computer interaction (HCI) researchers have developed and studied well-being applications that are not about savouring explicitly, but inherently can support savouring through reflection. These applications look at questions related to the design and effects of tools focused on capturing and sharing experiences [24, 57, 76], as well as the usability or design of tools prompting reminiscence in personal life [60, 80]. Within work contexts more specifically, researchers have designed and studied well-being applications aimed at creating motivation and awareness [4, 52], increasing engagement and productivity [38, 71], and supporting stress management [8, 21].

However, these examples are not about explicitly supporting savouring at work, and thus we have little design guidance on how this can best be achieved. For example, existing reflection-focused workplace well-being applications commonly rely on text-based inputs and outputs for well-being-related reflection [4, 21, 52]. In contrast, alternative interaction techniques, such as visual representation and images, have been shown to effectively support savouring in non-work contexts [25, 48, 57]. Therefore, it remains unclear how different interaction modalities shape savouring practices at work. For example, what challenges and strengths do different modalities, such as the use of text or visuals, present for workers, and how do these supports differ in the ways they shape work-related savouring outcomes?

To explore such questions, we designed *HappyCal*, a digital calendar application that aims to support savouring at work through two modalities: text and visuals (Figure 1). In *HappyCal*, participants textually log their positive work experiences, and such logs are then used for savouring as is, or are converted into AI-generated whimsical visuals, which can then be used for savouring in addition to the logs. As a first step feasibility study, we conducted an exploratory qualitative study to investigate two research questions—**RQ1:** What challenges and strengths do the individual modalities (text and image) present for end-users engaging in work-related savouring? and **RQ2:** How do these modalities differ in the ways they shape savouring outcomes? A total of 36 participants tried our app over 5 work days, of which 17 participants tried the text-only version, and 19 tried the image output version. At the end of the study period, all participants took part in a semi-structured interview. From our data analysis we learned that (1) participants across both groups found that engaging in savouring heightened their awareness of work-related emotions, (2) text-based support fostered conscious emotional processing, while image-based support helped amplify the positive feeling, and offered quick overviews, and (3) participants using the image-based app found the features engaging for personal expression and observed an added sense of playfulness to their savouring practices. Informed by our findings, we discuss which stages of savouring were supported by *HappyCal*, how the supports shaped emotional outcomes, and propose design guidelines for creating future savouring support features for work contexts.

Through this research, we make two main contributions. First, we offer a rich understanding of people's experiences with our application, including how participants perceived the text- and image-based features we designed to support the savouring of positive work experiences. Second, we discuss a set of design implications for supporting savouring through digital work tools, based on our interpretation of the study findings.

2 Background and Related Work

Our research explores how savouring work experiences can be supported through digital technologies. Building on savouring research in both psychology and HCI, we discuss the foundations of savouring, followed by existing technologies that support savouring in general, as well as in work contexts. Finally, drawing from broader research on well-being technologies that support reflection,

we discuss the potential benefits of designs that explicitly focus on noticing and reflecting on positive experiences at work.

2.1 Savouring

Savouring refers to the process of attending to, appreciating, and enhancing positive experiences, with the aim of augmenting and prolonging positive emotions [12, 33, 41, 47]. In this paper, we adopt this same definition for savouring.

2.1.1 Savouring Processes. Savouring involves multiple *processes*, defined as mental or physical operations that convert positive experiences into positive feelings. These processes include: a) noticing and attending to a positive experience; b) interpreting and responding to that experience through savouring *strategies*; c) experiencing positive emotions as a consequence; and d) attending to these positive feelings in an appreciative way [12]. Savouring can occur by attending to the past, present, and future: through reflection on past positive experiences (often referred to as reminiscence), engagement with the present moment, and positive anticipation of future experiences [10]. In describing our study findings, and in our discussion, we refer back to these savouring processes where relevant to explain how our participants underwent savouring operations.

2.1.2 Savouring Strategies. Savouring strategies are specific thoughts or behaviours that shape positive feelings, either by amplifying their intensity or prolonging their duration [10].

Traditionally, savouring strategies have been conducted non-digitally through mental and social exercises. These include forms of positive self-reflection, such as counting blessings and expressing gratitude, imagining potential futures, and engaging multiple senses during a positive experience. Additionally, positive experiences can be enhanced through sharing with others and memory building by taking mental pictures of moments one wants to remember [33, 41]. Research suggests that implementing such strategies is linked to enhanced well-being [12, 47], with particular benefits in workplace contexts, including improved happiness, job satisfaction, and work engagement [33, 41].

2.1.3 Savouring Outcomes. Prior research has further suggested that different savouring strategies result in varied emotional outcomes, such as gratitude and pride [10, 12, 69]. Quoidback et. al examined how savouring strategies relate to facets of well-being—specifically positive affect and life satisfaction [69]. They found that strategies with a focus on the present moment and positive mental time travel (reminiscing or anticipating) positively predicted positive affect. Such strategies have also been linked to building worker self-regulation, personal resources, and feelings of meaningful work [41]. Meanwhile, strategies involving communicating and celebrating positive events with others have been more strongly associated with life satisfaction [69], as well as pride and relationship growth at work [41]. In contrast, dampening (the converse of savouring) was negatively associated with life satisfaction, particularly through strategies such as fault-finding and negative mental time travel [69].

In our research, we translate these strategies into design goals and features of *HappyCal*. We discuss the impact of our tool and, where relevant, reflect back on existing findings for these strategies.

2.2 Digital Tools for Savouring

There are not many examples of tools that have been developed explicitly with the goal of supporting savouring. However, more broadly, systems exist that support sub-processes of savouring. We discuss such examples here, and then briefly describe the few examples that have explicitly focused on savouring.

A wide range of technologies have explored ways to capture, share, and reflect on every day memories, thereby supporting savouring processes such as noticing positive experiences, sharing with others, and reminiscing. Examples include augmented household objects that capture and replay memories [76], systems for multi-perspective memory viewing [57], photo-journaling of everyday experiences [42, 48], and email reminders of previous social media posts [24].

More recently, generative artificial intelligence (AI) has shown promise in supporting positive awareness and reminiscence, with approaches such as guided journaling [49, 84], cues for reminiscence associated with personal objects [43], music-based reminiscence [45], and AI-generated images to visualize personal data for reflection [68].

Several applications have also leveraged pictures to promote the capture of positive emotions through daily smartphone photography [20, 25, 54]. Related work has examined how technologies can use pictures to prompt reminiscence, by incorporating design elements such as photo location [60, 80], randomized image reflection prompts [42], and slower, more mindful interactions with photos [18, 19]. This act of revisiting past photos is also commonly seen in mainstream platforms such as Facebook, Apple, and Google Photos Memories, which include features like recent highlights and flashbacks from the same date in previous years.

Over the past decade, people have increasingly used digital technologies for more explicitly cultivating well-being through technology [13, 26, 36, 78]. Some applications have been explicitly designed to support savouring. In particular, *Resonance* was a system designed to explore how AI-augmented journaling can support positive mental time travel by anticipating positive futures [90]. *Variapsody* is a device for savouring the positive experiences of music listening [9]. Finally, Kwon et. al designed a hybrid system to support intentional savouring of gift-giving through slow, anticipatory interactions [53].

Our research builds on this work by incorporating features that support both the capture and revisiting of moments, as well as the fostering of anticipation. However, prior work has typically focused either on specific activities, such as music listening [9] or gift giving [53], or on a single savouring process, such as positive anticipation [90]. In contrast, we focus on a specific domain—work contexts—and more broadly explore which savouring processes can be supported through technology design.

2.3 Digital Tools for Savouring at Work

As more people turn to their digital devices for mental health and well-being support, there has been an increased interest in technology-based interventions for work well-being [79]. Most existing workplace well-being technologies focus on managing stress or improving productivity, for example by supporting focus

time [51, 71], helping with after-work detachment [85], building resilience [3], or meditation practices [8, 70].

More closely related to savouring, many systems aim to foster self-reflection on work activities and habits. These tools typically emphasize task- or achievement-oriented reflection, such as reflecting on progress, productivity, or stress [4, 21, 22, 38, 51, 52].

Our work builds on this prior research, and extends it in two main ways. First, existing workplace reflection tools generally do not explicitly examine savouring positive experiences. Instead, they tend to focus on re-framing work and making it more tolerable [21]. One notable exception prompts workers to identify daily work highlights [4]; however, its primary goal focuses on recognizing progress, not positive moments as a whole. Second, most workplace self-reflection systems rely primarily on text-based interactions [4, 21, 51, 52], with a select few exploring alternative modalities such as visual representations [22, 38]. The gap related to incorporating images for savouring work-related events is notable given that mental imagery and memory building through pictures are recommended savouring strategies [11, 12, 33, 77], and technologies outside of work (such as social media platforms) often rely on pictures as memory cues for reminiscing. Therefore, it is unclear how such techniques translate to workplaces.

In summary, we have limited guidance on how to design savouring applications for work, and as such, have limited insights on how participants engage with work-related savouring applications that include popular interaction techniques like text-based inputs and outputs, and alternative (for work context, specifically) modalities like images. To address these gaps, we designed and evaluated *HappyCal*, an application that supports savouring positive work experiences. Our study qualitatively compares two forms of design support: text, the most common modality in workplace reflection tools, and images, a largely unexplored approach in work-related savouring.

3 *HappyCal*: Design and Implementation

To encourage knowledge workers to savour positive experiences, we designed *HappyCal*, a desktop calendar application. In this section, we describe the design of *HappyCal*, our design rationale, and implementation-related details.

3.1 Design Goals

Multiple modalities (e.g. text, image, video, audio) have shown differing abilities to shape reflective experiences [52, 62, 89]. Since savouring involves reflective experiences (focused on enhancing positive experiences), we extend this modality-based approach when designing for savouring positive work experiences.

With *HappyCal*, we seek to design support for two commonly used modalities of reflection and savouring: text and images. We assess how adding visual support to text-based positive documentation (text input and image output) shapes savouring processes at work, compared to a single modality (text input and output) and how these features shape work-related emotions.

3.1.1 A Format to Support Input and Output Modalities. To design supports for text input and image output, we focused on three format considerations (FCs)—**FC1)** which type of data should be collected, **FC2)** where participants should input this data, and **FC3)** how image outputs should be displayed.

We chose to collect data through text entries (logs), describing the user's positive experience in their own words, due to its alignment with previous savouring interventions (**FC1**). Ilies et al. synthesize common intervention strategies for savouring, with activities for prompted reflection including "making a list of positive events or experiences and why they occurred"([41], page number: 73, table 1). Based on this prompt, we chose to collect logs of positive moments worker's experienced with the following prompt: *Please describe the circumstances of your positive moment: The moment I experienced was... This felt positive because...*

To support **FC2** and **FC3** we leveraged a calendar format, as it enables easy access to work-related data for many workers, and provides contextual information to aid reflection practices [39]. A calendar format allowed a user's work day to be broken down by event, providing natural points for input. Augmenting the calendar with images allowed them to be viewed in a timeline, which felt similar to other savouring platforms participants may have experienced, such as image apps like Facebook Memories which provide "flashbacks" from specific dates in the past.

3.1.2 Image Design. The remaining design goals for *HappyCal* surround visual support features. In order to create visuals which take into account the user's experiences, we chose to leverage generative AI (with considerations for privacy, explained in section 3.2). We incorporated various features into the images with the intention to cultivate and support reflection on positive affect, satisfaction, and engagement.

Fostering Fun and Engagement. One benefit of using generative AI was the ability to prompt for playful, cute, and positive imagery. Prior research shows that cute visual stimuli can create positive affective responses [29, 44, 56]. More broadly, positive visual features such as warm, vibrant colours and pleasant content (such as smiling faces, cute characters) have shown the ability to create positive affect, mitigate negative affect and support memory encoding [15, 50]. Accordingly, in our system, when participants logged experiences associated with positive affect, we designed image generation prompts focused on integrating visual elements of cuteness, whimsy, and positivity, with the goal of representing these positive emotions and fostering further positive affect. These qualities were incorporated into the image generation prompt instructions (see section 3.2).

Incorporating play into work with strategies such as humour and imagination have been shown to support lighthearted positive affect and help re-frame the nature of work to feel more meaningful and satisfying [5, 17, 73]. Developing interfaces to encourage fun and playful interactions have been shown to increase enjoyment, with examples such as using a character to create a personal touch and personality [6, 31, 34]. In *HappyCal*, we aimed to support playful exploration through customization features. Participants could select a variety of characters (e.g., cat, mushroom, dragon) and art styles (e.g., watercolour, comic book, embroidery) for their images. The whimsical nature of these options also aimed to mitigate the uncanny valley effect that is often seen in AI generated images [74].

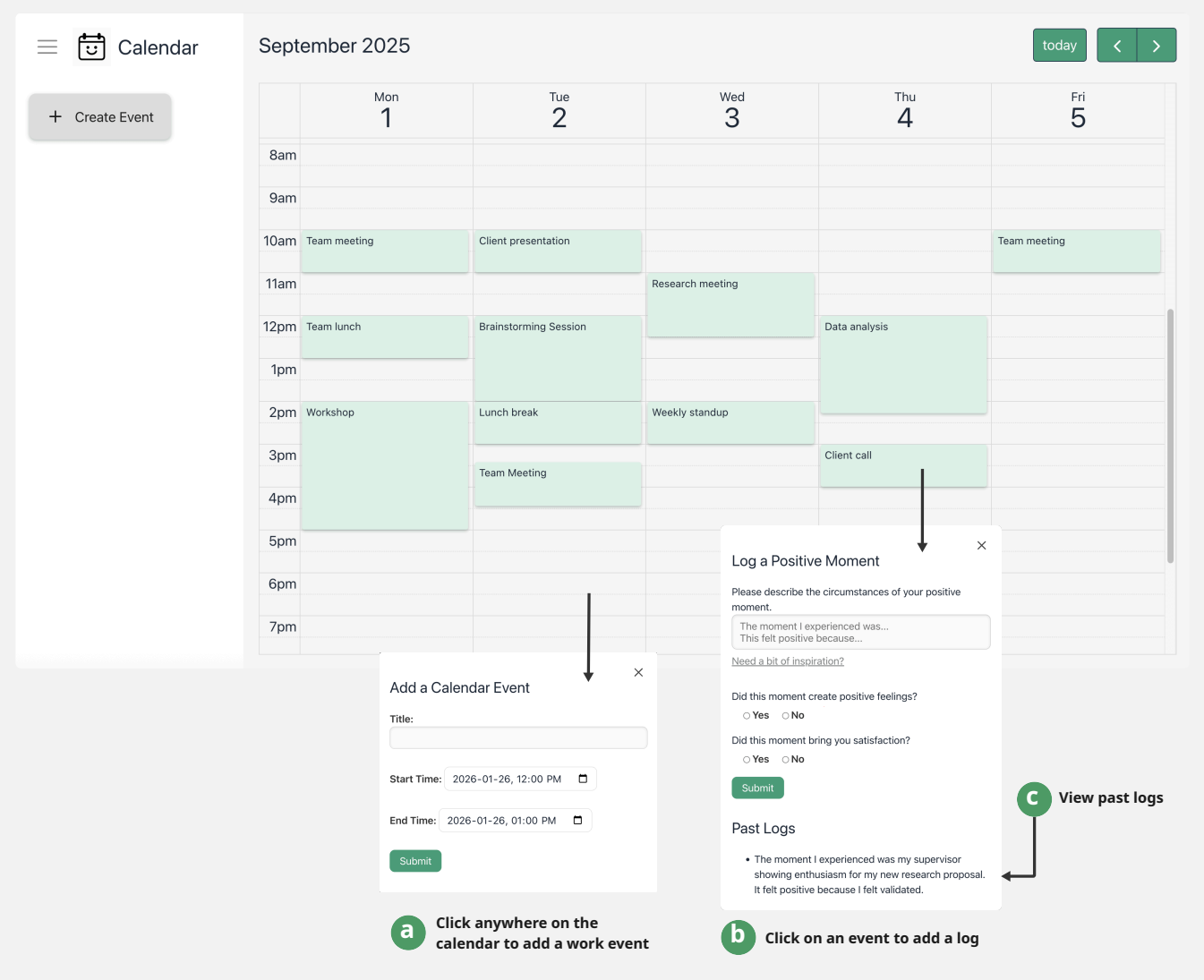

Figure 2: An overview of the app features for the text-based group of *HappyCal*.

Supporting Personal Meaningfulness and Deeper Awareness. In experience design, embedding storytelling elements has been shown to create more immersive and meaningful user experiences, as well as deeper personal reflection [23, 37]. Narrative has also been used in the design of health and well-being related systems, due to its ability to promote positive re-framing, reflection on behaviours, and motivation [64, 72, 81]. In narrative visualization, designs often follow a beginning, middle, and end — creating a conflict and resolution [75]. To create narrative elements in *HappyCal*, we generated multi-panel images when participants indicated that their positive work experience created a feeling of satisfaction. This aimed to reflect the meaningfulness of the event visually and foster further reflection. This was incorporated into the image generation prompt instructions (see section 3.2).

In addition to the narrative design aspects, we built on the ambiguity that inherently comes with AI, such as how user data will be interpreted and abstracted, to extend opportunities for personal interpretation and reflection. One of the benefits of ambiguity in design is that it can allow the user to interpret the output, and as such, encourages more engagement and meaning-making with content [35, 68]. Lastly, such ambiguity may help the experiences of viewing images stay "fresh", mitigating issues of hedonic adaptation (i.e., the tendency to return to a default baseline affective level), which are common to practices of PPIs [32, 58]. In our system design, such ambiguity is additionally created by prompting the system to turn work-related moments into vivid, imaginative image prompts—aiming to create less literal images that are more open to the interpretation of the user.

Figure 3: An overview of the app features for the image-based group of *HappyCal*.

3.2 *HappyCal*: Implementation

The *HappyCal* application was developed using Electron, a cross-platform framework for building desktop applications. Calendar features were built using FullCalendar React components and LokiJS was used as a database. Image descriptions and image generation were done with OpenAI API. The application was made compatible with both Windows and MacOS devices to expand participant recruitment.

Two versions of the application were developed for our user study—a **text-based version**, which implements a text modality, and a **text+image-based version**, which implements text and image modalities. For simplicity, we will refer to the text+image-based version as the image-based version throughout the paper. Figures 2 and 3 demonstrate the features of each version. In the text-based version of the app, a simpler set of features were provided, including entering workday events into the calendar, and logging positive moments after events. Users were able to view past logs by clicking an event and finding a "Past Logs" section. The image-based version included the same features, as well as additional image generation features, including setting image customizations

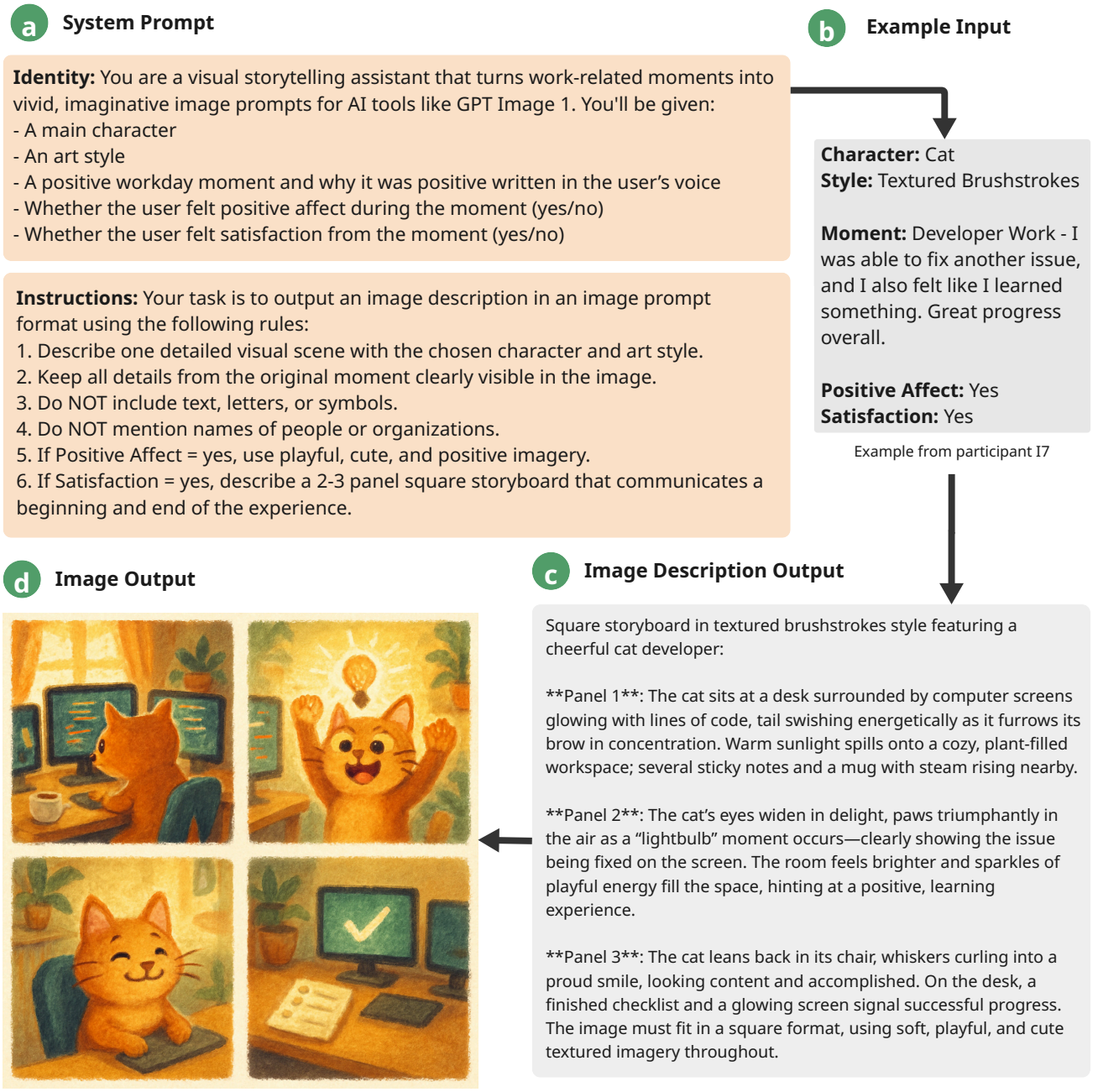

Figure 4: An overview of the image generation process: (a) Initial system prompt. (b) User input example. (c) Image description output. (d) Image output.

(character and art style) and viewing AI-generated images created based on the entered positive logs.

Image Generation. To generate images based on user logs we completed the following steps: Once a user entered a log, it was fed into an image description prompt (e.g. a textual description of an image's appearance) using OpenAI's GPT-4.1. Then, the description was fed into the GPT Image 1 model to produce an image. Images were generated at a medium quality level to reduce costs. We chose to use GPT Image 1 as it was a state of the art model at the time of the study with fast, reliable performance. The generated image was then displayed next to its corresponding event on the calendar (Figure 3).

To create image descriptions which took into account the user's log and customizations, as well as our image design goals (see section 3.1.2) we designed prompts based on Open AI's prompt engineering guide [65] and informed by AI image research [68]. For an overview of our prompt design, see Figure 4 and appendix A. In order to mitigate privacy concerns related to the use of AI, we emphasized to users that if they included personal or sensitive information in their logs, such information would be input to OpenAI. They were advised to avoid including any identifiers or private information that they were not comfortable having accessible by OpenAI. Furthermore, in the image prompt instructions we specified that names and personal details should not be included in the image description.

4 Evaluation

We conducted a five-day study to explore the usage and benefits of *HappyCal*. We explored two main research questions: **RQ1:** What challenges and strengths do the individual modalities (text and image) present for end-users engaging in work-related savouring? **RQ2:** How do these modalities differ in the ways they shape savouring outcomes?

4.1 Participants

37 participants were recruited for the study using university mailing lists, personal contacts, and social media. One participant was unable to install the app due to company IT restrictions, resulting in a final participant count of 36 (24 women, 12 men). All participants were considered knowledge workers. We also included graduate students, as they complete knowledge worker tasks such as research and teaching, and are often compensated for such work. The majority of participants (26) were in the academic domain, including graduate students, faculty, and staff. The remaining participants worked in different professions such as technology industry professionals (5), marketing (1), project management (1), social work (1), biology (1), and nursing (1). Participant ages ranged from 23-57, with the majority between 23-29 (19). One third of the participants had previously engaged with well-being apps, with the intent of their use primarily being for meditation and mindfulness, mood tracking, emotional support, and journaling. All but one participant stated they currently use a calendar to track their work events, with the majority (20) rating their calendar as extremely important for organizing their work life, and most accessing their calendar multiple times per day (31). The majority of participants (28) had previously taken a photo at work to commemorate a meaningful or memorable moment, such as a group gathering or nice view, although most only took such photos infrequently (e.g. monthly or yearly basis). Almost all participants stated that being happy was a very important personal goal for them. Table 1 summarizes the responses to our demographics questionnaire.

4.2 Procedure

Participants were invited to join the study upon expressing their interest and confirming they meet the recruitment criteria. The recruitment criteria included: people who use technology to manage work events regularly (e.g., at least 5–10 times/week), are at least 19 years old, live in North America, and are available to participate during five workdays followed by an interview. Our recruitment message included general information about what participation would involve, including entering positive moments into an app and, depending on the version, receiving AI-generated images based on these inputs. Participants were aware of AI use during recruitment but were not informed of which version they would be assigned to before beginning the study. Upon receiving participant consent, we sent them instructions to download the *HappyCal* application on their computer using an installer file. Participants were assigned to a version of the application (text-based group or image-based group) in an alternating order, determined by the order their consent forms were received. Participants in the image-based group were assigned IDs beginning with *I*, while participants in the text-based group were assigned IDs beginning with *T*.

Participants were instructed to begin using the app on the first day of their following work week (Monday, with the exception of I30, whose week started on a Tuesday). They received detailed PDF instructions explaining the study procedure and app functionality, and the first author (R1) was available to answer any questions. For the **text-based group**, participants were asked to follow two steps each day for the five day period—(1) Add their workday events to the calendar, (2) Log positive moments after events. The number of workday events and positive moment logs added to the calendar was left flexible, allowing participants to decide based on their available time and comfort. Participants were instructed that the included workday events should reflect their workday and avoid personal events outside of working hours. We suggested that participants pick a regular time to enter their data (e.g., after each event, at the end of the workday) to help maintain consistency. The participants in the **image-based group** were instructed to complete steps (1) and (2) each day, along with two additional steps—(3) Set image customizations—participants could update the customizations as often or as little as they wished, and (4) View AI-generated images.

Due to the sometimes unexpected nature of generative AI, participants were made aware that there was a slight chance that the images output by the system may be unexpected. If a generated image caused discomfort or was found offensive, participants were instructed to reach out to the researcher for support and had the ability to immediately remove the content from the application. No such reports were made during the study period. After the five-day period, participants uploaded their app data to a private folder shared with R1. Lastly, participants joined a 1-1 semi-structured interview with R1 or R6, that were scheduled to be 45 minutes each. The interview was guided by a script which asked questions about the app's impact on well-being and participant's feelings about the app's features and format, including the text and/or images influence on positive and negative affect, satisfaction, and savouring capabilities. See appendix B for the interview guide used in the study. Follow-up questions were asked throughout the interview to gain further insights, and participants were invited to discuss any remaining feedback at the end of the interview. Participants received a $20 gift card remuneration. For an overview of the procedure, see Figure 5.

Table 1: Participant demographics summary

Demographics Category		Total (n=36)	Image (n=19)	Text (n=17)
Age	23–29	19	12	7
	30–39	10	3	7
	40–49	3	2	1
	50–57	4	2	2
Gender	Women	24	14	10
	Men	12	5	7
Profession	Graduate student	14	6	8
	Academic researcher / faculty	6	2	4
	Academic staff / administration	6	3	3
	Technology industry professional	5	4	1
	Other	5	4	1
Well-being	Happiness is a very important goal	32	17	15
	Well-being app usage			
	Never	24	11	13
	Less than 15 minutes daily	9	7	2
	15–30 minutes daily	3	1	2
Calendar use	*Importance*			
	Low to moderate	5	2	3
	Very important	11	6	5
	Extremely important	20	11	9
	Access frequency			
	Rarely / Weekly	2	0	2
	Daily	3	2	1
	Multiple times daily	31	17	14
Work photo capture	Never	8	4	4
	Infrequent	20	11	9
	Frequent	8	4	4

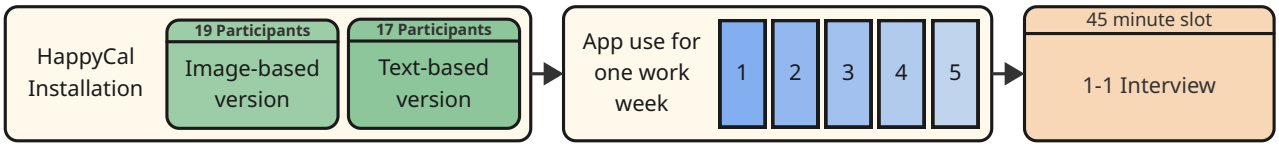

Figure 5: Overview of study procedure.

4.3 Measures

We gathered data through user input in the *HappyCal* app and interview transcripts. All calendar events, logs, image descriptions and images if in the image-based group, and timestamps were gathered from the app using a database. Video recordings of each interview were captured, which resulted in a total of 18.6 hours, with interviews lasting from 15 to 56 minutes. Variability in interview length was due to how much participants wanted to share. All participants were asked all the questions listed in our interview guide (appendix B) and follow-up questions when relevant.

4.4 Data Analysis

All interviews were transcribed and analyzed using open coding to inductively determine codes and themes [1, 63]. Two researchers (R1 and R2) coded two transcripts (one from each group) that were rich in content, to develop an initial codebook. The initial codebook was discussed by R1 and R6, which resulted in 87 codes of which there were 9 disagreements. Disagreements included situations where one coder identified that a specific interpretation was likely incorrect (2), that a code was too speculative (2), or that the details of a code needed to be modified to minimize assumptions (5). The disagreements were resolved through discussion, and the remaining transcripts were then coded by R1. Following thematic analysis and axial coding methods [1], the codes were grouped into themes. The final codebook had 185 codes spanning seven themes, such as 'impact of image features' and 'feelings about calendar format'.

R1 also analyzed the log inputs from *HappyCal* and grouped them into categories to examine the frequency of commonly logged topics.

For both the text and image-based groups, each log was coded to describe what the positive moment was about, and similar codes were grouped to form topics such as 'About feeling productive' and 'About feeling inspired or motivated'. If an event or log fit into multiple topics, it was duplicated and counted in both. The median and mean percentage of each category per participant were calculated.

5 Results

In the following section, we discuss results from our qualitative analysis. We first briefly summarize the types of data participants logged, then examine processes and strategies for savouring such as developing heightened awareness of positive moments, focusing on the positive over the negative, recalling past positive experiences, and expressing positive feelings [33].

5.1 Summary of Participants Data

We categorized the types of moments participants logged and, for each participant, calculated the proportion of logs in each category. Across both groups, there were a total of 13 categories (inspiration, daily pleasures, ease of work, relaxation, validation, relief, learning, good news, humour, meaningfulness, interactions, problem solving, productivity). The two most commonly reported topics across both groups focused on interactions with others (Figure 6a) and productivity (Figure 6b), while logs expressing negative feelings showed the greatest contrast, occurring more in the text-based group (Table 2).

5.2 Heightened Awareness of Emotions

5.2.1 Noticing and Sustaining Positive Emotions. We found that for many participants across both groups, use of *HappyCal* heightened awareness of positive experiences and led to a more positive outlook towards the work week (I5, T6, I12, I14-T16, T18, T20-I22, T24, T28, I31, I35-I37).

Text-based Group: In particular, six participants in the text-based group (T6, T16, T18, T20, T24, T28) reported that logging helped them focus on the positive moments, and the accumulation of small logs created a more positive overall tone and level of satisfaction from their day or week (T2, T8, T10, T11, T16, T20, T26, T28, T32). For example, T2 said *"when I kind of looked at it as a whole week [...] makes me feel like happier or more fulfilled in that, like, I actually did stuff and I didn't just stare at a computer for eight hours a day."*.

The majority of participants reported that without *HappyCal*, they would not have consciously noticed these positive moments within their fast moving work culture (T4, T6, T8, T10, T11, T16, T18, T20, T26, T28, T32). Writing down positive experiences made these moments feel more concrete and defined (e.g., *"I had to be very specific about what is it that is making me feel happy. What was the specific instance? I had to really tease it apart"* [T32]), and helped prolong positive emotions and support savouring (e.g., *"Being asked to consciously retrieve and reflect on that and then express it into words just magnifies the experience in my consciousness"* [T16]).

Image-based Group: For this group, two mechanisms scaffolded noticing and sustaining positive emotions. For some participants (I7, I9, I19, I25, I30), the mechanism was similar to the text-based

Table 2: Examples of participants data from text and image-based groups.

Topic	Example Logs	Descriptive Statistics
Interactions with others	*"Always nice to see other people during stand-up."* [I7] *"Had a nice chat with co-workers - didn't quite finished what I planned on working on, but it was a nice break!"* [T11] *"Felt happy that in my workplace, people are aware of what I'm working on and I get the opportunity to see related projects going on."* [T10] *"I met the new person that I am working closely with and we got along really well! she made me feel needed, smart and valued in my return to work."* [I30] *"Many students came to the lecture even though it was not on a topic that will be tested on. They asked lots of good questions."* [I13]	**Text-based**: median=10%, mean=12.3%, SD=14.7% of logs per participant, **Image-based:** median=16.7%, mean=20.7%, SD=18.5% of logs per participant
Productivity or work progression	*"This went really well. I was able to fix a bug that I worried could not be solved."* [I7] *"I finished a review that I did not want to do and I felt better afterwards."* [I25] *"We accomplished things that needed to be done and my ideas were heard."* [I21] *"Productive. I read the notes I made and organized the papers I read. I was also able to do some writing."* [T16]	**Text-based**: median=20%, mean=19.1%, SD=14.7% of logs per participant, **Image-based:** median=16.7%, mean=19.2%, SD=12.5% of logs per participant
Negative feelings	*"I don't enjoy grading at all!"* [T32] *"Very difficult meetings, more problems than solutions..."* [T6] *"It was a negative experience because I had a headache and I had to think a lot and not a lot got done."* [T17] *"Not a lot to be positive about in this meeting as it was about budget cuts and people losing their jobs."* [I19] *"I feel overwhelmed by the things that I have to do."* [T33]	**Text-based**: median=8.3%, mean=13.7%, SD=16.8% of logs per participant, **Image-based:** median=0%, mean=2.1%, SD=3.6% of logs per participant

a Image representing interaction

Event: Teaching, Log: Many students came to the lecture even though it was not on a topic that will be tested on. They asked lots of good questions. [I13]

b Image representing productivity

Event: Developer Work, Log: This went really well. I was able to fix a bug that I worried could not be solved. [I7]

Figure 6: Examples of images generated from participant logs for common log categories. (a) images showing interactions, (b) images showing productivity

group—the act of positive reflection itself, rather than the images, was the primary influence on their heightened emotional awareness (e.g., *"I don't think it's truly the images. I think [...] taking notes of positive and reminding myself of positive things that happened during that event were way more powerful than the image generated."* [I9]).

While for many others (I5, I12–I15, I21, I22, I31, I35–I37), a positive outlook was encouraged through a different mechanism: positive imagery (e.g. *"I felt like having something playful, informal, lighthearted definitely generated more positive feelings than had you perhaps not had images or used images of a more serious nature."* [I12]). Participants described how exaggerated expressions and celebratory attributes in the images (e.g., laughter or confetti) heightened positive emotions, as they wanted to internalize the depicted positivity (Figure 7c) (I36, I15, I22). For example, I22 noted that *"seeing the character throw their hands in the air out of celebration [...] it's contagious, and I would start to intrinsically feel that"*. These visual cues also supported retrospective reflection, allowing participants to view their week as more positive overall than they initially perceived (e.g., *"I'd say my overall emotion was: oh, this was a nice week, which I don't know if I would or wouldn't have recognized otherwise"* [I36]). Some participants described that the anticipation and surprise of first seeing an image output created an instantaneous boost in positive emotions (I5, I7, I13–I15, I21–I23, I31, I34, I35). For example, I23 described it as *"when I put the prompt and then there is like 30 seconds or 60 seconds, like [the image] takes the time to load, right? [...] So once I see that, it made me happy instantly"*.

In contrast, three participants found that even though the images helped create awareness of positive moments, the overly playful style could reduce meaningfulness in certain contexts, by forcing a positive perspective instead of "accepting it for what it is" [I21], minimizing a serious milestones (e.g. a PhD defense [I9]), or abstracting complex technical meetings [I14] (Figure 8c).

5.2.2 Noticing and Dealing with Negative Emotions. While the focus of *HappyCal* was to support the savouring of positive moments, participants also frequently discussed its impact on their experience of negative emotions.

Text-based Group: Within *HappyCal*, the logging feature only asked participants to describe why work moments felt positive (Figure 2). However, in the text-based group, some participants felt that expressing negative emotions was important, as such expression helped them find a positive side. This was a helpful process for easing emotions, reducing pressure, and giving hope (T1, T6, T8, T16, T17, T20, T24). For example, when reflecting on an event where a paper was rejected from a conference, T24 explained that *"when you share your negative emotions or when you share it with someone, or even if you write it in a paper, I feel like that's going to reduce the pressure in it and it's going to ease it a little bit"*.

Some participants also noted that it could sometimes be a challenge to identify a positive moment to log (T1, T2, T6, T10, T11, I13–I15, I19, T26, I36), particularly when events felt neutral or unremarkable. As I13 described, *"sometimes I really was racking my brain to say something positive about the experience, not because it was a negative experience, but because of just it was a non-memorable experience"*. For some participants (T1, T2, I7, T8, T11, T26), this struggle brought greater awareness to worse days or events they otherwise would have quickly moved past. T10 described that *"I did notice a twinge of like [...] not logging something maybe reminded me, like, oh, that was negative, or like, that wasn't good"*.

Figure 7: Examples of positive images generated from participant logs. (a) images with storyboard format, (b) images showing work playfully, (c) images showing celebration

Furthermore, reviewing logs at the end of the week could sometimes reinforce a sense of failure or lack of accomplishment (T1, T2, T6), particularly when logs included negative experiences, and they were frequent (e.g., *"when I look back at it at the end of the week, I might see that [...] I also had 10 really bad [experiences], so like, I don't want to do this anymore"* [T2]).

Image-based Group: In contrast to the text-based group's experiences, wherein the participants had to find the positive in their negative emotion logs, in the image-based group, participants described how the positive, playful nature of the images helped reframe or reduce the emotional intensity of negative moments by visually emphasizing positive aspects of an event, and in some cases, "blocking" or "overriding" negatives experiences (I5, I12, I14, I15, I19, I21, I22, I31). I15 noted that the whimsical quality of the images made it easier to forget frustrations they would normally concentrate on: *"Usually, I'll remember if something frustrating happened in a meeting or in a conversation [...] I don't remember anything of that because all I see are the pictures that made me happy"*. This playful style of the images also helped create a more positive perspective on work (I5, I12, I13, I15, I19, I30, I31), due to their contrast with the serious nature of work (Figure 7b). As I12 described: *"It gives you a sense of lightheartedness and playfulness that is noticeably absent from the nature of your work"*. For others (I5, I31) this reframing made work feel more satisfying by showing their job in a more interesting and appealing way (e.g., *"my job is sometimes like serious, so it was like really interesting to give it that spin"* [I31]).

However, when participants logged experiences with a negative connotation, this sometimes resulted in images with negative visual elements (Figure 9a), which could cause further negative feelings (I5,

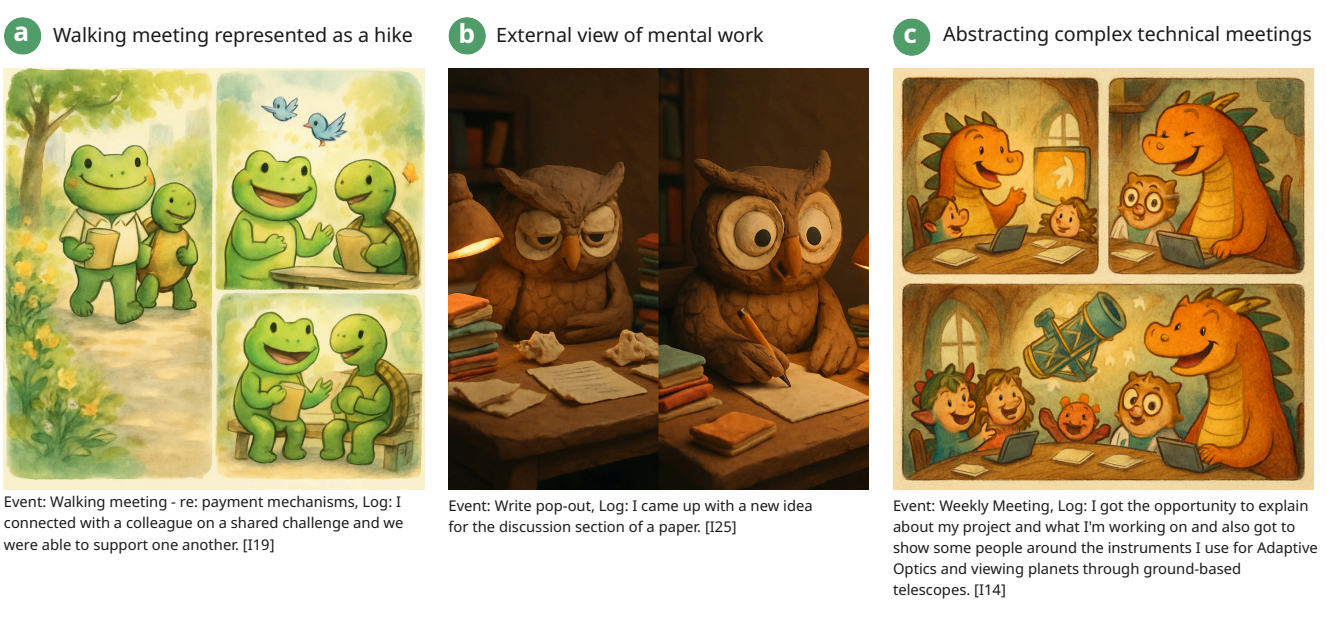

Figure 8: Examples of images with inaccurate contexts mentioned by participants.

I7, I14, I21–I23, I30). As participants were instructed to log positive experiences, the image generation prompt did not include explicit instructions for handling negative logs. Consequently, when negative logs were submitted, the outcomes varied in tone, sometimes staying generally positive and other times reflecting more negative content. I22 described how such an image *"really sticks out like a sore thumb [...] it definitely evoked some negative emotions and sort of just reminded me of that bad part of my week"*. Although most participants who received a negative image reported the impact was strongest in the moment and plateaued over the week (I5, I21, I22, I30), for I14 these images continued to evoke negative emotions when revisiting them.

5.2.3 Emergent Insights from Heightened Awareness. A benefit participants described from developing heightened awareness of their work-related emotions through *HappyCal* was the emergence of bigger-picture insights when reflecting back on their experiences.

Text-based Group: In the text-based group, eight participants (T2, T8, T11, T16, T20, T24, T26, T32) discussed how seeing the cumulation of positive logs helped them maintain a positive mentality and reinforced that they are doing successful work (e.g., *"With logging, I look back the next day, I'm like, oh, you know, I actually did quite a bit of stuff, and it's basically just sort of like a psychological pattern in the back. [...] that pattern in the back is also important because then it can accumulate"* [T20]). Similarly, the collection of logs helped some participants (T1, T6, T16, T32) feel more self-aware of their work habits and reflect on how different types of events contribute to their work well-being. For example, T1 said: *"[logging] can give me a more overarching like view of what makes me feel good and what not, then I can consider those in future decisions that I have to make"*.

Image-based Group: Similar to the text-based group, in the image-based group, seeing a collection of images helped with identifying insights. In particular, seven participants (I7, I9, I12, I21-I23, I36) mentioned that being able to see the collection of images allowed them to see a full picture of their week (*"when I looked at like just my week at a glance, it was really nice to like also have one meeting and the image right next to each other. [...] I could see a full picture of job satisfaction [...] which then overall like boosts my level of satisfaction"* [I21]). Furthermore, the collection of images helped visually highlight which types of events created positive feelings, helping participants awareness of what influences their work well-being (I7, I9, I22). For example, I7 noted that work breaks stood out in the image-based calendar, creating a sense of gratitude for their job structure: *"It also revealed to me that I don't do that much work throughout the week because a lot of the images are just like a cat drinking coffee and like not doing work [...] in a way, I was like, isn't it nice that my job is just kind of hanging out and like drinking coffee when I want?"*).

5.3 Recalling Positive Experiences in Detail

5.3.1 Modalities as Memory Cues. We found that *HappyCal* had an impact on participants ability to recall moments from their week and this was influenced by the content's (logs or images) ability to provide a memory cue.

Text-based Group: Ten participants reported that revisiting their logs from the week aided with recall of their positive experiences and acted as a trigger for memories they would have otherwise forgotten (T4, T6, T8, T10, T11, T17, T18, T20, T24, T26). However, some participants suggested a more meaningful, engaging, and glanceable format would improve the likelihood they revisit these memories long-term. They reflected that otherwise, the requirement

Figure 9: Examples of images generated from participant logs. (a) images created from a log with negative connotation, (b) images with a darker art style

to go back and find the positive logs within the calendar blocks would limit natural moments of recall (T6, T8, T16, T20, T24, T26-T28, T32). For example, T26 felt that *"I had to remember to go in and reflect back and figure out which ones had a positive moment and go through [...] it probably wouldn't happen"*.

Suggestions for improved formats included a summary report to synthesize their data (T16, T24, T26), visual cues to mark positive moments (T20, T24, T28, T32), graphs to view trends (T27), and "flashback to this date" reminders (T6, T8). T28 imagined emojis placed on the calendar, such as *"stars and little suns for those moments, [...] would give me a sense of workplace happiness because I'm not just seeing the work, you know, the meeting after meeting after meeting, I'm seeing those little points of positivity"*.

Some participants also described how the content of their logs affected the completeness of their recall (T1, T18, T20). For example, T1 logged high-level feelings about events when no particularly unique moments occurred, which left little tangible to recall (e.g., *"It's kind of high level feeling about [the event]... it's not very tangible task that I felt very a specific way about it"*). Similarly, T20 noted that logs describing emotional experiences with deeper introspection were more detailed and worthwhile to revisit than logs focused primarily on productivity tracking.

Image-based Group: Unlike the text group, 12 of 19 participants in this group found the images primarily acted as a memory cue for

their positive moments (I3, I5, I12-I15, I19, I21, I22, I35-I37). Participants mentioned a benefit of the images over text as a memory cue was their simple glanceability on the calendar. This created a fun enticement to revisit their calendar and allowed for more natural moments of reflection when it was open (e.g., *"every day was like a bunch of the images stacked on top of each other, and it felt like, oh, here's like a quick summary of the day, or a few moments from the day, which is much more engaging than a regular calendar"*) [I35].

Although images offer a way to support easy recall, many participants emphasized the need for more contextually relevant images for more complete recall to occur. Seven participants reported images were too generic or failed to represent the proper context, requiring them to revisit their log to be able to fully recall the moment (I13-I15, I23, I25, I30, I37). For example, I25 noted that the images could not *"convey with any kind of subtlety what I was feeling at the moment for me to be able to remember it"* (Figure 8b). Suggestions for improvement included textual cues within the image (I36, I37), and collecting additional contextual information, such as location, to include in the image prompt (I36).

When images failed to accurately map to participants work environments, such as representing university teaching as an elementary school, a walking meeting as a hike, or a virtual meeting as a physical office, this created a sense of disconnect (I19, I23, I36) (Figure 8a). In other cases, the disconnect was due to AI generation errors (I9, I37), such as becoming turned off by incorrect anatomy. However, some participants (I13, I34) perceived such AI "failures" as humorous, noting that realism was not required for them to be meaningful (e.g., *"I sometimes feel like it's not super representative of like the whole experience. I don't think it has to, right? Because they're kind of magical creatures [...] it generates like some bizarre things, but I find that actually kind of endearing"* [I13]). Participants appreciated that the lighthearted nature of the images helped avoid "slightly uncanny valley" images (I13, I22, I36, I7, I9) and acted as more of an interpretation than literal representation (I7, I25, I35). Similarly, I36 and I37 found that anthropomorphic characters made the images easier to connect to and minimized gender misrepresentations.

When images did represent experiences in greater detail, they tended to stand out to participants and allowed for improved recall (I7, I9, I13, I21-I23, I30, I36). These successful images tended to use a storyboard format (Figure 7a), with participants appreciating having multiple frames to describe the moment: *"It feels like it's moving in a way [...] There was several things happening. There was talking, there was eating, there was this or that"* [I35]. Conversely, I3, I14, I30, I31, and I34 did not notice a clear distinction between storyboard and single-frame images, finding that the images were only subtly different.

For some participants, recall was improved when images depicted unique events (I15, I21, I30, I31, I34), or showcased interactions with others (I14, I21, I23, I25, I30, I31, I34, I35), because they were less repetitive and provided more context clues (Figure 10). Participants (I21, I22, I34, I36) expressed the importance of being able to situate themselves in the image, with I36 explaining: *"I think for me happiness has to do mostly with being able to connect the image with the incident that happened and for that I require being able to identify myself in the picture regardless of the number of characters in it, and being able to identify with the context of the situation"*.

5.3.2 Emotions Evoked From Recall.

Text-based Group: For some participants (T4, T6, T8, T10, T11, T17, T18, T26, T28), rereading their logs helped re-evoke the positive emotions associated with the event. T8 described being able to *"relive that moment"* and *"smile thinking about that moment specifically"*. Additionally, participants reported that while positive emotions did return, they were short-lived or mild (e.g., *"I don't think it like amplified [my emotions] necessarily, but maybe just like, again, was like a second moment of dwelling on the same thing"* [T11]), aside from T28 who described that they are *"pretty good at keeping the energy of what happened in the moment, and then when I have to replay it or rewrite it [...] having that same good energy"*.

Image-based Group: The images helped re-evoke the positive emotions similar to the text-based group, but participant opinions on the intensity with which they felt the past positive emotions had some differences from the text-based group. Some participants (I3, I13, I14, I23, I36, I37) similarly described the emotion evoked by revisiting the images as mild compared to the impact of the original event. For example, I37 noted that revisiting the images was *"still positive, maybe not as positive as in the moment, but it's a positivity that I probably wouldn't have experienced had I not reviewed the image"*. In contrast, other participants (I14, I19, I21, I30, I31) reported that the images helped evoke positive emotions at a comparable intensity to the initial experience.

Across both groups, several participants (T6, I7, T10, I19, T20, I23, T24, I37) suggested that the limited amount of time between the original event and recall limited the emotional impact of the logs or images. They speculated that recall may be more beneficial for eliciting positive emotions over longer spans of time, when the experiences are less fresh in memory (e.g., *"you just had seven days for me to look back in the images, right? So every time I look back into my memories, it's like one or two years ago. [...] So that's why I think there was like not much of change of emotion. If I had to see this image like two, three years later, that would be different"* [I23]).

5.4 Supporting Expression of Positive Feelings

In order to savour, individuals must also be able to outwardly express their positive moments [33]. A common theme across interviews related to participants ability to express their feelings through *HappyCal's* features, and which formats they felt were most meaningful for that expression.

5.4.1 Formats That Allow for Personal Expression.

Text-based Group: For some participants (I22, T24, T32), text-based logging was reminiscent of journaling and allowed for meaningful expression of their feelings about work. I22 described logging as *"a version of like writing in a journal, something good that happened and putting it on paper, making it solid"*. For T32, *HappyCal* acted as a digital augmentation of existing journaling habits, while T24, who had previously only journaled about negative feelings, found logging positive experiences enlightening (e.g., *"I've logged things whenever I felt extremely sad or extremely emotional, but I didn't log about my positives so far [...] when I was writing it, I felt like, oh, this is interesting. [...] I felt it kind of brought me a lot of positive emotions"* [T24]).

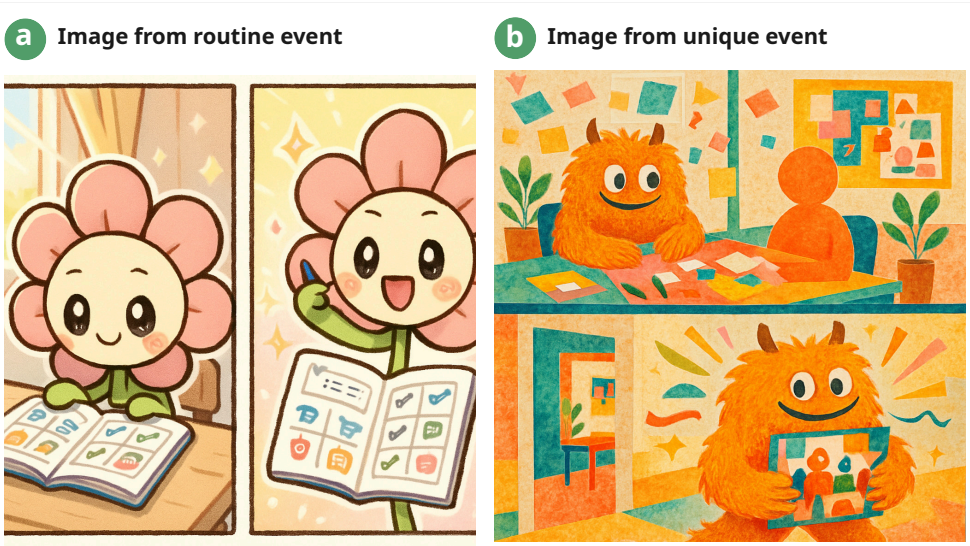

Figure 10: Examples of images that were for more routine versus unique work events. a) An image from a routine task. b) An image from a more unique event.

In contrast, four participants reported that the text format limited their ability to express their emotions. T8 found it was difficult to translate their feelings into words (e.g., *"writing something and coming up to the creativity, sometimes I'm not able to express it in words"*). Others described the logging format as rigid or robotic (T1, T28, T33), explaining that *"writing down about these complex feelings I feel like it loses the richness"* [T1] and *"doing this is very robotic [...] there's really no like human interaction or any like relatable feeling"* [T33]. These participants suggested more expressive alternatives, such as drawing or putting together colourful pictures [T1] and incorporating playful elements into the logging interface [T33].

Image-based Group: Personal expression was often supported through participants ability to control and customize the images according to their personal taste. For 11 of 19 participants in the group (I3, I5, I7, I9, I12, I15, I23, I30, I34, I36, I37), customization stood out as a particularly influential feature, as it provided a sense of self control and allowed participants to select visuals that personally generate positive feelings. For example, I12 noted: *"I loved that I could choose and customize my own images because that really: A) it makes me feel like I'm more in control of what I see in terms of images, and B) it's more positive feeling generating when I see something that I know that I enjoy seeing, something I love"*.

Participants engaged with the customization features in different ways. Eleven participants found a favourite customization or character and used it consistently throughout the week, while seven participants took a more exploratory approach, experimenting with various customizations over the week. One participant did not use the customization features due to missed instructions.

Although the customization features were generally well received, some participants did suggest wanting additional control over the image generation (I9, I12, I14, I22, I23, I36). Suggested features included the ability to preview or generate multiple image versions to select a personal favourite [I36], and the ability to input fully custom characters that match their appearance [I22].

5.4.2 *Motivation to Engage in Expression.*

Text-based Group: Many participants noted that the time commitment required to return to the app to log entries demanded substantial effort, which at times reduced their motivation to engage in self-reflection (T2, T4, T20, T27, T28, T32, T33). In particular, this additional effort, combined with a stressful workload, caused a barrier to engagement (e.g., *"sometimes when I was too busy, I feel it felt like it's mandatory [...] additional work for me"* [T4]).

Some participants expressed desire for faster and lower-effort ways to express their emotions (T8, T20, T27, T28, T32), such as providing a numerical score [T27], as well as notifications better integrated with their work tools (T10, T11, I12, T16, T20, T24, I31, I36). For example, I36 suggested receiving a prompt immediately after meetings: *"once your meeting is done, I would get another notification [to log] [...] it doesn't feel like something extra just because it's coming from the same app that I'm used to"*.

Image-based Group: Conversely, the additional features for this group seemed to increase motivation to engage in self-reflection. 17 of 19 participants in the image-based group (I3, I5, I7, I13-I15, I19, I21-23, I25, I30, I31, I34-I37) reported that the cute and lighthearted nature of the images made them enjoyable. Participants described how the images made logging feel more exciting, and enjoyed receiving a visual memento to match their log (I7, I13, I14, I21–I23, I34, I35). For some participants (I7, I13–I15, I31, I34), curiosity and anticipation around how AI would interpret their text

created motivation to log, describing the experience as game-like [I34], and wanting *"to log more events just to make more images and see what it would spit out"* [I35]. I31 additionally correlated the quality of the AI's interpretation to the level of detail in their logs: *"it pushed me to want to give more description to see like, you know, can it generate a background that's like even more better or accurate to my like work"*). Additionally, the customization features created an engaging experience for participants (I5, I7, I13–I15, I31, I34–I36), caused by interest in exploring combinations of characters and art styles (e.g., *"I did enjoy seeing how my entries were interpreted differently based on the art style I chose, so that was kind of exciting at the end of every day, to see what ink drawing looked like versus like watercolor and brush stroke"* [I7]). Participants also noted that colourful images brought them more positive emotions compared to darker images, such as the charcoal art style (I7, I15, I22, I34) (Figure 9b).

6 Discussion

Our research explored two overarching questions—**RQ1:** What challenges and strengths do the individual modalities (text and image) present for end-users engaging in work-related savouring? and **RQ2:** How do these modalities differ in the ways they shape savouring outcomes? In this section, we discuss key insights related to these questions, and outline design implications based on our interpretation of the results.

6.1 Comparing Modalities Across Savouring Stages: Where Did Savouring Occur?

Throughout our study, we observed trends in the stages of the savouring process participants engaged with (section 2.1.1), and how the *HappyCal* designs did (or did not) support participants at different points in the process. In particular, we observed that participants tended to engage with two primary savouring processes: first, the act of inputting positive moments helped participants become more aware and break down their experiences (we will refer to this as the *awareness stage*, and second, revisiting these positive moments helped them reminisce on the week (we refer to this as the *reminiscence stage*). These stages reflect processes broadly used across savouring practices—the awareness stage reflects the savouring process of noticing and attending to a positive experiences in the present, while the reminiscence stage reflects the process of attending to these positive feelings from the past [10, 12].

Awareness Stage. From our study, we found that entering positive experiences through text-based input was generally easy for participants and the act of logging helped foster reflection on those experiences (section 5.2.1). Some participants in the image-based group even mentioned that the act of logging alone may have been sufficient to help them savour, regardless of the additional images. This may be because noticing and attending to positive experiences is the first process required for savouring in general [12]. As such, this stage of logging may have been perceived by participants as the most critical or obvious for engaging in savouring.

Additionally, logging-only may have been successful, because for participants that were comfortable expressing their feelings through writing, attending to their emotions through text felt intuitive (section 5.4.1). This finding aligns with prior research on digital journaling, which shows that many people are drawn to use text-based features to record their lives because they found them more comfortable than other modalities, such as audio recording [40]. In contrast, some participants expressed they wanted more expressive, personalized, or faster ways to input, instead of text (sections 5.4.2, 5.4.1). Related research on digital reflection similarly recommends that well-being tools should support efficient, flexible input [83]. Surprisingly, such requests were less common among participants using the text input paired with image output (section 5.4.2). One possible explanation is that the customization features in the image-based version stood out as a favourite feature of the app for our participants in the image-based group (some experimented with them continuously, while others stuck to a single option that fit their preference (section 5.4.1), potentially compensating for the more mundane nature of text input.

Reminiscence Stage. When reflecting back on logs (section 5.3.1) some participants in the text-based group found that reading their logs helped them recall their experiences sufficiently. This may be because the logs were attached to specific calendar events, and such conceptual linking could have helped with recall.

In contrast, and more closely aligned with digital journaling research [28, 40], many participants in the text-based group found that text alone limited their ability to reminisce about positive experiences (section 5.3.1), and suggested alternative outputs, such as visual representations. These comments were consistent with findings from participants in the image-based group, who described the image output as beneficial for quick overviews and easy reminiscing (sections 5.3.1, 5.2.3). Previous work similarly suggests that journaling practices can be augmented through multimodal features [28, 40], with such features acting as useful memory cues [7, 67].

Thus, related to RQ1, our findings suggest that relying on a single modality for savouring may not be optimal for supporting both awareness and reminiscence stages. Instead, multiple modalities (like in our image-based app version) may be better suited to compliment one another, supporting different stages of savouring and playing different roles depending on user preferences. Reliance on a single-modality also risks breaking down if that modality does not align with the user's needs or style.

Implication 1: Informed by these findings, we suggest that systems designed to support savouring work experiences can scaffold savouring across at least two stages—awareness, and reminiscence, and interface mechanisms that support these stages should leverage multiple modalities to adapt to individual preferences for input and output.

Prior research provides support for designing systems that enable multiple stages of savouring through a combination of modalities. Engaging with a range of savouring strategies has been shown to increase happiness and savouring capabilities, with research suggesting that happiness interventions should regularly use different strategies to maintain diversity [69]. Additionally, prior work highlights the importance of selecting happiness-enhancing activities that align with an individual's personality and lifestyle in order to support emotional well-being [59]. Individual differences can therefore play a significant role in how people are likely to savour positive experiences [86].

6.2 Shaping Savouring: What Were The Emotional Outcomes?

Savouring strategies (section 2.1.2) can result in various emotional outcomes. Our findings similarly found that engaging with text-based versus image-based features both shaped the savouring experience for participants. Our findings suggest that there is no single modality that produces superior savouring outcomes. Rather, both options present distinct trade-offs that can guide design decisions.

In the text-based version of *HappyCal*, savouring practices tended to emphasize deeper emotional processing and heightened emotional awareness. Participants found that writing about their positive moments encouraged them to think more carefully about why certain events felt positive, which in turn gave them a deeper understanding of their habits and well-being (section 5.2.3). This aligns with prior research supporting that mindfulness practices such as journaling can help support emotional intelligence [2]. Participants also noted the value of contemplating positive sides of events that were otherwise a negative experience (section 5.2.2). These reflections frequently focused on productivity, aligning with prior work on event-level predictors of momentary happiness at work, which highlights perceived work performance as a key determinant of momentary positive emotions [30]. Savouring such moments increased participants awareness of daily achievements and successes, providing a more positive perspective of their work week (section 5.2.1). Past research similarly suggested recording daily highlights can increase self-awareness and improve motivation and positive affect [4].

Interestingly, participants in the text-based group were observed to record more negative feelings than those in the image-based group, based on our categorization of participant logs (section 5.1). One possible explanation is that participants in the text-based group may have expressed their emotions more directly, whereas those in the image-based group may have used a more positive tone due to the expectation of an image; this would be an interesting area for further investigation. These more negative logs commonly focused on productivity and stress. When work goals were not reached, participants often logged about their perceived lack of success. To reduce such reliance on productivity-focused validation, and to support more positive, holistic reflection, prior research has suggested integrating therapy-inspired elements, such as "time well spent", into workplace tools [21]. Incorporating such elements may also be a beneficial design consideration for future savouring systems.

In contrast, the image-based version shaped savouring practices in a different way, functioning less as a tool for emotional processing and acting more as a positive affect amplifier. Participants found the image outputs added an element of fun and lightness to their otherwise serious work routines, with features such as customization options and the anticipation of seeing a generated image boosting their mood (section 5.2.1). Participants also noted that the images helped reframe or temporarily block their negative thoughts through the cute, colourful, positive rendering style (section 5.2.2). This attentional redirection away from negative feelings is reflective of prior research on digital emotion regulation, where tools such as games, movies, and music are used to manage emotions [78]. It also aligns with research on post-work detachment, where work-life boundary strategies [16] and digital games [61] are used to support recovery from workday strain.

However, at times, participants entered text with a negative connotation (section 5.2.2), resulting in image outputs with a similarly negative tone. Despite the image generation prompt expecting a positive input, GPT-4.1 readily produced negatively toned image descriptions when provided a negative input. In such cases, images risk reinforcing negative moments instead of reframing them. Prior research characterizes this reinforcement of negative experiences as *dampening*, and has been shown to decrease life satisfaction [69]. These findings suggest that savouring systems using generative AI may need to dynamically change image prompts depending on the tone of the user input, or avoid image outputs altogether in certain cases. For example, a system could detect whether a user is engaging in a dampening or savouring strategy, and adjust the image generation accordingly, such as directly representing the situation, offering a more positively reframed interpretation, or visualizing a positive future outcome to anticipate.

Based on these participant reactions and related to RQ2, our findings suggest that text and image modalities present distinct yet complementary forms of savouring support. The text-only version tended to be more reflective and therapeutic, while the image-based output layered on a lighter, more playful tone. These differences align with the wide range of savouring strategies suggested in prior work, which span actions such as reflecting on silver linings of negative situations, to sharing photos of past celebrations [33].

Implication 2: Based on these insights, we suggest that work-related savouring applications should first identify the intended emotional outcome of the experience, such as fostering deeper reflection or amplifying positive emotions. Then, designer's should accordingly prioritize modalities which support that emotional outcome.

Designers should also keep in mind whether their intended emotional outcome is appropriate across varying users and work contexts. Here, Implication 1 may serve useful to have multimodal systems that can adapt to user scenarios.

It is worth noting that although many participants found positive benefits from the use of *HappyCal*, they reflected that the emotions elicited were fairly mild, mainly due to the short study period (section 5.3.2). This should be taken into account when applying this design implication, particularly whether different modalities will continue to produce the same emotional outcomes during long-term use.

6.3 Suggested Design Features: Which Features Should Savouring Applications Incorporate?

Based on our interpretation of the results, we discuss design features for systems that aim to support the savouring of positive work moments. We highlight opportunities and considerations for potential features that can be used to shape user's work-related emotions and engagement with savouring practices.

6.3.1 Encouraging Engagement Through Novelty. Participants in our study appreciated the engaging qualities of the image generation features. Features such as customizations and the AI's varied interpretation of logs helped keep a sense of curiosity and novelty during their interactions with the application (section 5.4.2). Some

participants reported their main motivator for continuing to input logs was to see what the generative AI would output each time, comparing it to a game or reward. This finding aligns with past research on the importance of novelty when practising PPIs—researchers have highlighted that keeping the practice "fresh" can help address hedonic adaptation and maintain long-term engagement [32, 58].

Implication 3: Based on these findings, we think that if designers of savouring applications have a design goal of supporting longer-term engagement in savouring practices, incorporating elements of novelty may be beneficial.

Multimodal approaches, such as supporting a range of input and output options, offer opportunities to create novel user experiences. In such scenarios, AI's ability to foster anticipation and surprise can be strongly leveraged as a source of novelty and as a motivating factor for continued engagement. The flexibility of AI allows text and images to be combined in diverse ways—potential design directions that could be explored in future research include creating new visual formats, generating summaries of text-based logs, blending text and images into collages, or creating animated pictures with text captions.

6.3.2 Targeting Unique Positive Experiences. Participants in the image group had varying experiences with the effectiveness of the AI generated images depending on the nature of their work event (section 5.3.1). When participants logged fairly routine events, they found the resulting images were often unmemorable. In contrast, images associated with more unique events often stood out and created positive emotions.

This difference appeared to be primarily due to the detail of text input. Unique events allowed for more interesting, novel text inputs, which resulted in images with something more distinct to display. In comparison, many daily events resulted in brief logs with limited context, which limited the options of what the image could represent. As a result, using images for frequent, everyday scenarios requires additional considerations, such as less focus on representing the context of positive experiences, or automatically drawing additional context from other sources. Potential strategies could include using simpler image formats, such as emoji representations, to create quick visual cues (as suggestion by T28 in section 5.3.1), or accumulating multiple moments into summary-style images. Another promising area of exploration is incorporating automated data collection, such as information from smart watches and device usage logs, to enhance image context without requiring further input from the user [55, 88].

Implication 4: Based on these insights, we suggest that if the aim of a savouring application is to capture more unique moments to reminisce, focusing on showing images that represent such contexts may help augment this reminiscing. Conversely, if savouring applications aim to provide end-users with savouring support for all types of workdays, including savouring the more frequent, every day moments, further exploration is required to determine the ideal use for image modalities, whether through other visual formats, summarization and automation techniques, or more specialized prompt engineering. Furthermore, if an application is receiving open-ended data from the user that could be interpreted as negative, as seen in 5.2.2, additional design solutions could be considered when generating images. For example, facilitating user agency when deciding if an image should be generated, along with techniques like sentiment analysis filters to guide the image prompt away from negative keywords, could be beneficial to explore [79].

6.3.3 Focusing on Accurate Interpretation. Participants in the image-based group frequently emphasized that the images ability (or inability) to accurately represent their positive moments directly affected their elicited emotions (section 5.3.1). This was often shaped by the image rendering style. For example, participants reported that certain image formats elicited stronger emotions, such as the storyboard format capturing richer details of their event and conveying a sense of progression. Customization choices also played a role. Seeing a favourite character represented in an image, for example, helped some participants feel more emotionally connected to the output (section 5.4.1). However, rendering style alone was still not influential enough when images were generated from limited contextual information. In these cases, outputs sometimes depicted incorrect settings, or appeared overly generic, creating an emotional disconnect. In contrast, these issues of connection were not prominent in the text-based group, where participants expressed their experiences in their own words without external interpretation (section 5.4.1).

These findings suggests that there is a fine balance that must be maintained between transforming versus interpreting user input into new content, as the result may not always align with the users experiences or expectations.

Implication 5: Based on these insights, we suggest that when interpretive outputs are incorporated into savouring systems, they should be carefully designed and provide end-users with appropriate agency and control to include sufficient contextual data to match the users expectations. Otherwise such outputs may cause users to feel disengaged, or become more distracting than supportive of savouring.

To better support the transformation and interpretation of outputs, savouring systems may benefit from providing users additional control. For example, systems could allow users to prompt the system to request multiple generated outcomes and select the best interpretation (as suggested by participants in section 5.4.1), or add user involvement to the output generation process by allowing them to view and edit image descriptions before the final image is generated. Conversely, some users may prefer that their experiences not be interpreted by the system at all. In such cases, offering features for users to create their own outputs may be an interesting direction—for example, a system could provide visual and textual elements that a user can arrange into their own representations.

7 Limitations and Future Directions

This work contributes insights into how savouring practices may be supported within work contexts, with particular attention to the roles of text- and image-based modalities. Although our findings suggest that combining text input with image output can be beneficial, we cannot draw conclusions about their long-term effects. Longitudinal research is needed to evaluate how such supports influence savouring practices in the longer term. In addition, our sample size (N=36) was underpowered to compare the two groups quantitatively. Future studies aiming to compare the effects of specific features or modalities, and the efficacy of the intervention, will need

to recruit larger participant samples. We encourage researchers to build upon our design implications in future work, particularly by exploring how alternative input and output formats–such as wearable devices and data visualization strategies—could serve as design directions to understand more about the strengths and limitations of savouring systems.

Within the context of generative AI using personal data, prior research has highlighted important associated risks to consider, such as privacy concerns and inappropriate content [68]. Thus, we encourage designers to approach the use of AI features with caution, to ensure that systems are sufficiently tested and avoid contexts where misrepresentations could negatively affect the emotional well-being of the user [66]. Additionally, it is possible that our participants generally had more positive or neutral perspectives about AI. It should also be noted that the majority of our participants were in the academic domain. In future studies, collecting contextual data on participant familiarity with and attitudes toward AI, as well as examining additional participant metrics such as profession, gender, age, and personalization choices, may help provide a broader view of the adoption of the savouring techniques we propose.

8 Conclusion

In this paper we explored how PPIs like savouring can be supported through digital tools for work contexts. Through the design and evaluation of *HappyCal*, we found that calendar-based logging of positive work experiences and AI-generated visuals based on such logs can support awareness and reflection of positive experiences, and help build positive affect. Informed by our findings, we suggest 5 implications for designing future savouring applications, including supporting multimodal reflection, and giving users greater control over how their positive experiences are represented. We encourage future researchers to extend our findings, and continue to expand the design guidelines for developing savouring applications for work.

Acknowledgments

We would like to thank our study participants for the time they devoted to this work. This research was funded by RGPIN-2025-04477 and by Mental Health Research Canada, in partnership with Mitacs (IT47236). We have used AI tools to get grammar improvement suggestions only. The paper remains an accurate representation of the authors' underlying work and novel intellectual contributions.

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A Image Generation Prompt Instructions

Identity: You are a visual storytelling assistant that turns work-related moments into vivid, imaginative image prompts for AI tools like GPT Image 1. You'll be given:

- A main character
- An art style
- A positive workday moment and why it was positive written in the user's voice
- Whether the user felt positive affect during the moment (yes/no)
- Whether the user felt satisfaction from the moment (yes/no)

Instructions: Your task is to output an image description in an image prompt format using the following rules:

(1) Describe one detailed visual scene with the chosen character and art style.
(2) Keep all details from the original moment clearly visible in the image.
(3) Do NOT include text, letters, or symbols.
(4) Do NOT mention names of people or organizations.
(5) If Positive Affect = yes, use playful, cute, and positive imagery.
(6) If Satisfaction = yes, describe a 2-3 panel square storyboard that communicates a beginning and end of the experience.

B Interview Guide

B.1 Section for Participants in the Image-based Group

Images influence on happiness:

- Do you think the images overall made you feel happy about your work? And why do you think this is the case?
- Did you find that some images helped you recall moments better than others? Why?
- Do you think that some images brought you more positive emotions than others? Why?
- Would you say there was a difference in the positive emotions the images brought you in the moment/day they were generated compared to overtime during the week; why?
- We tried to make the images fun and whimsical. Do you think this influenced your positive emotions and how?

- Do you think being able to customize the character and art style of the image influenced your positive emotions and how?
- Do you think some images brought you more job satisfaction than others? Why?
- Would you say there was a difference in the satisfaction the images brought you in the moment/day they were generated compared to overtime during the week; why?
- When logging a positive experience, when you responded that a moment brought you satisfaction, the created image was put in a storyboard format, to try to show the start and end of a satisfying journey. Do you think this influenced your job satisfaction and how?
- Do you think some images brought you more negative emotions than others? Why?
- Would you say there was a difference in negative emotions the images brought you in the moment/day they were generated compared to overtime during the week; why?
- We tried to make the images fun and whimsical. Do you think this influenced your negative emotions and how?
- Do you think being able to customize the character and art style of the image influenced your negative emotions and how?

Images influence on ability to savour:

- Savouring can be broken down into two parts – augmenting and prolonging. Do you think the images helped augment your positive work experiences? Do you feel that they helped prolong the emotions from the experiences? Why?
- Do you think the image on its own helped you savour, or did you need to look at the associated log?

B.2 Section for Participants in the Text-based Group

Logs influence on happiness:

- Do you think logging your positive experiences overall made you feel happy about your work? And why do you think this is the case?
- Did you find that some logs helped you recall positive moments better than others? Why?
- Would you say logging positive experiences brought you positive emotions? Why?
- Would you say there was a difference in the positive emotions the logs brought you in the moment/day they were written compared to overtime during the week; why?
- Would you say logging positive experiences brought you a feeling of job satisfaction? Why?
- Would you say there was a difference in the satisfaction the logs brought you in the moment/day they were written compared to overtime during the week; why?
- Would you say logging positive experiences brought you any negative emotions? Why?
- Would you say there was a difference in negative emotions from the moment/day they were written compared to overtime during the week; why?

Logs influence on ability to savour:

- Savouring can be broken down into two parts – augmenting and prolonging. Do you think the positive logs helped augment your positive work experiences? Do you feel that they helped prolong the emotions from the experiences? Why?
- Do you think the act of logging helped you savour? Or reading them back? Or both?

B.3 Section for General App Experience

- Did you find the amount you had to input into the app ever felt like too much or too tedious?
- Do you think embedding such well-being data in a calendar setting in particular helped improve your workplace happiness?
- Are there circumstances where the use of a calendar would come in the way of your happiness?
- Do you think embedding such well-being data in a calendar setting helped you savour?
- Did the app feel like something you could picture yourself continuing to use long term? You can also consider if it was integrated into your existing calendar.
- Do you have any other feedback on your experience using the app?