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# RIT

## **Matter: Creating an action loop of mindfulness**

By

Mriganka Gupta

A Thesis Submitted in Partial Fulfilment of the Requirements for the Degree of  
Master of Fine Arts in Visual Communication Design

School of Design  
College of Art and Design

Rochester Institute of Technology  
Rochester, NY  
April 30, 2021

## Committee approval:

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## **Abstract:**

In the past, radical innovation changed the way we live our daily lives without causing a change in fundamental human behaviour. Our “social suite” of behaviours - something that has evolved within us over centuries had mostly remained consistent in the early days of this innovation. Today, modern technology has slipped into our lives without any friction. Products are now designed to blend in with our homes, so well that we almost forget they’re there. And this has caused a concerning change in human behaviour - to the extent that people now think of computer behaviours as analogous to human behaviours. Most of us don’t even realize that we’re talking to a robot when we ask Alexa for a recipe or tell Siri to sing Happy Birthday. This phenomenon, termed as the Eliza Effect has been in existence since the 1960’s but has had alarming implications in recent years.

Children as young as the age of two now have access to smart devices, and adults are overwhelmingly surrounded by them too - from chatbots to virtual assistant devices. This is causing us to slowly lose touch with our self-awareness, mindfulness and qualities of altruism, friendship and love. My thesis explores interactive methods to help humans understand and become aware of the Eliza Effect. It will provide ways for them to take action and regulate the change in behaviour caused by these devices through simple mindfulness tasks.

## **Keywords:**

Eliza Effect, Mindfulness, Human Behaviour, Psychology

## Critical Analysis and Summary:

Today, more people believe that computer behaviours are analogous to human behaviours. This phenomenon, termed as the Eliza Effect has altered our capacities for altruism, friendship and love. With the rise of ‘smart’ devices like automated chatbots, Amazon Echo, Google Home, Siri etc. the lines between human conversations and artificial conversations has blurred our understanding of social cues, behaviour patterns and response expectations.

In an article for The Atlantic<sup>1</sup>, Nicholas Christakis talks about a Yale experiment wherein bots were made to pose as humans in a donation-based game. The bots were supposed to act as “selfish” beings and this in turn reduced the cooperation among the human participants because they thought of the bot as being human and thereby expected it to be moral. NPR and Edison Research’s Smart Audio Report<sup>2</sup> shows that smart speakers have been embraced equally by Americans of all ages and in total account for 43 million people. The report also mentioned that 48%<sup>3</sup> of the adopters use the device more often after the first month of ownership. Today, devices are being introduced in children’s lives as young as the age of two and in 2020, device usage times increased by large numbers, because of the pandemic and having to stay indoors. The goal of this thesis is to find an interactive, actionable method to monitor device usage and prompt users to make a change to counteract the Eliza Effect while also providing context for those prompts.

With such a large chunk of the population prone to being influenced by the Eliza Effect, its no surprise that there are products in the market to divert our attention from devices - from wearable bracelets and action cards to mobile apps and mindfulness journals. A quick competitor study revealed that most of these products are surface-level solutions and lack the flexibility and context that humans need to make any real change. In ideating various methods for interaction and understanding, some initial ideas for this project included an interactive awareness campaign and a mindfulness ATM with action cards. However, these solutions weren’t Covid friendly.

For this project, I have built a two tier, closed-loop system of change making through the combined use of a light and a journal. Journals are a great way to provide actionable prompts that included context, all while being Covid friendly. A deeper dive into mindfulness journals revealed certain gaps in the market that became the focus of this project which included - lack of personalisation, pre-determined paths and pace, lack of context and an open-ended user experience loop. In order to address these concerns, this project makes use of a classical conditioning inspired mindfulness action loop.

Classical conditioning has long been used to train the mind to overcome phobias, PTSD, and even drug dependency.<sup>4</sup> Studies show that it can also be used to form good habits.<sup>5</sup>

By using a neutral stimulus to perform an actions, over time that action becomes a habit. In this project, the neutral stimulus is in the form of a light that tracks your device usage data and provides a visual cue by turning red when you overuse your devices. This is where the journal steps in and acts as an actionable, tangible method to refocus our attention through mindful action prompts that can be recorded, revisited and reflected upon. The prompts cover a diverse set of mindful behaviours and are accompanied by a context glossary that explains how each prompt works. The combination of the light with the journal creates a two-level method of habit creation that is cyclical in nature and therefore closes the user-experience loop.

The journal's unique design also addresses the market gaps mentioned through its binder style format that allows you to pick your own prompt pages and set your own pace. The minimal design of the pages leaves room for personalisation too. Together, this solution helps the user notice their increasing usage of devices and counteract that use through mindful actions that increase their self-awareness.

Although the Eliza Effect has been in existence since the 1960's an active conscious effort in using this solution can change the extent of its influence on our behaviour. Understanding ourselves better will in turn help us understand other people better and bring clarity to the subtle differences between something impersonating a human being and a real human being.

## End Notes:

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## Appendix B: Thesis Defense Presentation



VCD MFA THESIS 01

**People now believe that computer behaviours are analogous to human behaviours.**

*This phenomenon, termed 'as Eliza Effect' has lead to an increasing change in our understanding of social norms, altruism and friendship.*

MRIGANKA GUPTA MAY 2021

## The Eliza Effect

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*"Modern bots have slipped into our lives without any friction, and altered our capacities for the 'social suite' of behaviours."*

- N Christakis, 'How AI Will Rewire Us'

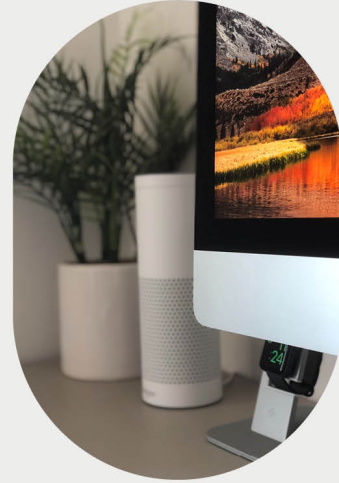
*"As digital assistants become ubiquitous, we are becoming accustomed to talking to them as though they were sentient"*

- K Munger, 'Can We Be Friends With Robots?'

*"Our own biases get projected onto these automated beings and we assume they're rooting for us no matter what"*

- B Borzиковsky, 'We're More Honest With Robots'

**Multiple studies indicate that the creation and usage of devices that mimic human behaviours has created a shift in our understanding of what it means to be human - and, more specifically, how we expect others to behave with us.**



## Why it matters

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- With **devices being introduced into the lives of individuals as early as the age of 2**, the amount of power it has to change our perceptions has skyrocketed.
- **Smart speaker ownership rose up by 40% in 2018 to 66.4 million in the US** and with new products entering the market every year, the number of people with smart devices in their homes is only increasing.
- **In 2020, average screen times for most individuals shot up by huge margins, due to the pandemic** and it's likely that this effect will continue for many more months to come.

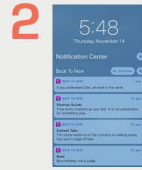


## Competitor Solutions



### MINDFULNESS JOURNAL

- Inconsistent in its design
- Has very little writing space
- Has one type of prompt
- Lacks any kind of flow
- Does not inform users about device use



### BACK TO NOW APP

- Defeats the purpose of distancing from devices
- Notification from app appears on homepage alongside other distracting notifications
- No action can be taken through the app itself



### PAUSE WEARABLE DEVICE

- Vibrates every 60/90 min which might be too overwhelming
- No action can be taken
- Does not inform users about device use



### MONKEY MIND CARDS

- Card prompts are very specific to young kids
- Does not provide context
- Prompts focus more on mental notes that physical actions

## Market opportunities

1 Currently, most journals in the market are curated for specific needs and designed with a certain aesthetic in mind. This not only reduces scope for personalization but also creates an added **pressure for users to find a journal they align with in terms of style and content.**

2 Both journals and mindfulness apps that exist have pre-determined paths and goals that require a certain pace. **Providing users the opportunity to pick their own pace by giving them prompts that span over different time periods** can help reduce their burden and allow them to decide how much time they want to invest.

3 Often times, these **solutions lack context** - which can make users wonder why their actions would even matter. If users are told how these actions can help them, they will be more likely to perform them again.

## Objective

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1



Create a method to monitor device use and provide ways to take a break from those devices

2



Create actionable prompts that act as a method to form a habit

3



Provide context for the prompts to help users understand the implications of their actions

**By providing a neutral stimulus to perform an action, over time that action becomes a habit.**

*This behavioural technique is more commonly known as Pavlovian conditioning, named after the Russian physiologist, Ivan Pavlov.*

## Classical Conditioning

"Classical Conditioning has very commonly been used to treat phobias (through exposure therapy), PTSD, drug use etc."

- **Jamie Elmer, 'Classical Conditioning and How it Relates to Pavlov's Dog'**

"As behaviours are repeated in consistent settings they then begin to proceed more efficiently and with less thought as control of the behaviour transfers to cues in the environment that activate an automatic response: a habit."

- **Philippa Lally, 'How Habits Are Formed'**

"Little cues in our environment trigger routine behaviours, good and bad. Like Pavlov's dogs, our minds have come to associate certain stimuli with learned responses. You could train your brain to associate daily routines with new healthy and helpful habits"

- **Jennifer Mulder, 'What Pavlov's Dogs Can teach Us About Creating Habits'**

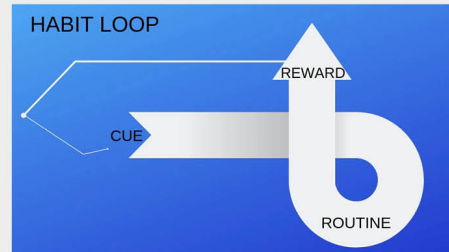


Fig (i) - The Habit Loop in Charles Duhigg's book, 'The Power of Habit'

## The Visual Cue

The **'Guiding Light'** - a smart light that collects your screen time and device usage data, will provide a **visual cue by turning red to prompt you to take a break from your devices and interact with your journal** or your physical environment. This visual cue will act as a neutral stimulus and over time, you will automatically take breaks from your devices and participate in your journaling, without the need for a cue from the light.



# Reinforced behaviours create the path to forming habits.

*Journals have long been used as a way to remember and reflect upon our lives in a tangible way. Narrowing down the content of a journal to simple mindful actions can help establish a habit among users.*

## Journaling Benefits

*"Part of the impact of journaling has to do with paying attention to small details that you might not otherwise notice."*

- **F. Diane Barth, 'Journaling Isn't Just Good for Mental Health. It Might Also Help Your Physical Health'**

*"Journaling has become the hallmark of the self-care movement alongside meditation. Labeling emotions and acknowledging life events have a known positive effect on people"*

- **James W. Pennebaker, 'Whats All This About Journaling?'**

*"Journaling is one of the most affordable and accessible acts of self-care because all you need is a pen and paper to enjoy it. It is a meditative exercise that can help you sort out your emotions and prioritize pieces in your life"*

- **Melissa Divaris Thompson, 'The Benefits of Journaling...'**



## Initiating a change

The aim of this project is to help users shift the course of their behavior using **mindful action prompts that can be recorded, revisited and reflected upon while also reducing the amount of time spent with devices.**

These prompts will be **accompanied with explanations** to help the users understand how their actions can make a difference.

The prompts will **cover a diverse set of mindful behaviours allowing users to pick their own journey and pace**, thus ensuring a higher success rate of change.



## Journal Prompts

The prompts within **the journal act as a secondary mechanism of habit creation.**

In this example, the user is encouraged to interact with their **physical environment (which acts as a neutral stimulus)** by using all five of their senses. This interaction is recorded within the journal and provides a **positive mechanism to stabilize difficult emotions.**

Over time, the user wouldn't need this page anymore, and will be able to refocus from their difficult emotions by interacting with their physical environment.

*Your physical environment acts as the neutral stimulus to your senses. Making note of them helps ground your emotions.*

Soothing Senses

Things I smell \_\_\_\_\_

Things I hear \_\_\_\_\_

Things I touch \_\_\_\_\_

Things I see \_\_\_\_\_

Things I taste \_\_\_\_\_



# Journal Prompts

I made a friend

Who I spoke to:

When/How we met:

What we spoke about:

What I liked about them:

How I can reach out to them in the future:

The person you meet acts as a neutral stimulus

**How It Works:**  
Revisiting this memory acts as a positive reinforcement and encourages the user to talk with people more often

Right, here, right, now:

What I found out:

What I can do about it:

Why I'm feeling it:

The journal acts as a neutral stimulus

**How It Works:**  
Problem solving on paper, helps clear the mind and enhances the user's self awareness

# Journal Prompts

The year \_\_\_\_\_ in emotion

Fill in the squares below with the emotions you wish to track in your memory this year and color the squares red/blue according to how you feel each day.

The squares act as a neutral visual stimulus

**How It Works:**  
An allocated empty space will challenge the user to fill it up. As more squares get colored in, the visual will act as a positive reinforcement to push them to continue this behaviour

What makes me human:

PLACES      THINGS

PROBLEMS      PEOPLE

FEELINGS      VALUES

The journal acts as a neutral stimulus

**How It Works:**  
Providing a space to self-reflect and writing it down will help users empathize with others

## Context Glossary

In order to help users make sense of their actions and understand how they work, a glossary card will be provided. **This page will explain every type of prompt in the journal and how it works.**

Providing this context to users will make them more likely to want to continue using the journal and make them more observant to changes.

### Why your actions matter:

You might be wondering what the point of these journal exercises are. Although this may seem like a trivial pursuit, of self-awareness to your mind, your subconscious works differently and can pick up on subliminal cues. Below, you'll find an explanation for each type of prompt in the journal.

- 1. Memory Palace** - much like Dumbledore's memory catcher in Harry Potter, the prompt serves as a way to record our greatest actions so that we may look back on them and remember that we are capable of being good, feeling good and doing good.
- 2. Grid Trackers** - providing a space for you to record an action/idea in the form of an empty square gives your mind the subliminal cue to want to fill that square in its own great way to keep track of your journey and progress.
- 3. Sensory Stories** - prompting our senses to make the world real and focus on what our senses make us feel, hear, smell and see can help stabilize us during high stress situations.
- 4. Quest Matrix** - this type of prompt helps you work through your emotions one step at a time. At times, it makes it easier to find clarity from complicated messy thoughts in an organized manner.
- 5. Decision Matrix** - making a decision can be hard and often times, we may be navigating our way through multiple lines of thought. Sometimes that decision using the matrix helps speed up that process by providing a quick decision. You either agree, or understand what specific reasons are making you disagree. Either way, it provides clarity.
- 6. Friendly Faces** - as you grow older, it becomes increasingly hard to make a connection with people or make new friends, but it isn't impossible - and looking back on these pages will remind you of just that.
- 7. Emotion Ocean** - sometimes you just need to vent something to vent your feelings. This paper is your safe space to do just that. Scribble on it, tear it, crumple it. Do as you please! There will be no hard feelings.

## Target Audience

- The Eliza Effect has ramifications on large age group and progressively increases with age. The beauty of a journal is that **anyone who can read and write will be able to use it.**
- While this includes young children, who may not fully understand the significance of journaling, it'll develop good habits in them at a young age.
- Adults can understand the significance and use the journal/light as a way to keep themselves accountable. This also makes for a good family activity - do it with you kids and lead by example. Your kids will develop a stronger bond with you in the process.

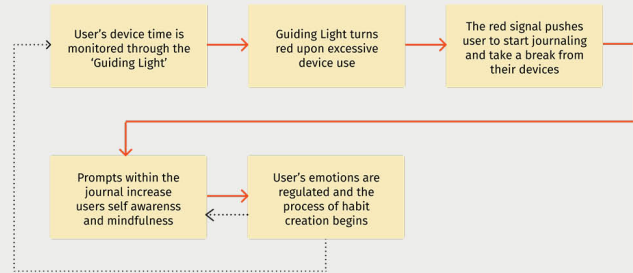


# User Flow

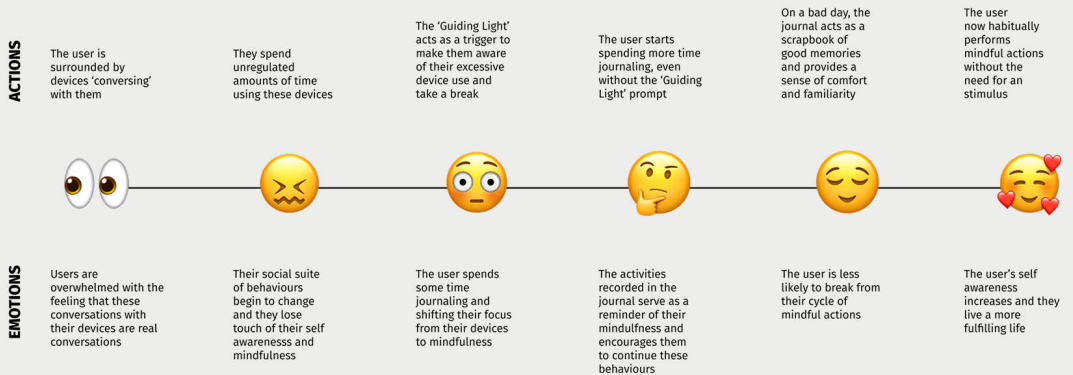
The diagram on the right shows the flow that a user would go through. This diagram, which is **cyclical in nature shows how the user experience loop is 'closed'** to provide a stable mechanism for habit creation.

The **first level of habit will be generated once the user no longer needs the Guiding Light** to act as a cue and push them to take a break from journaling/other activities.

The **second level of habit creation** will be generated once the prompts within the journal reduce a users dependency on external methods of regulation and **empower them to self-regulate their emotions**

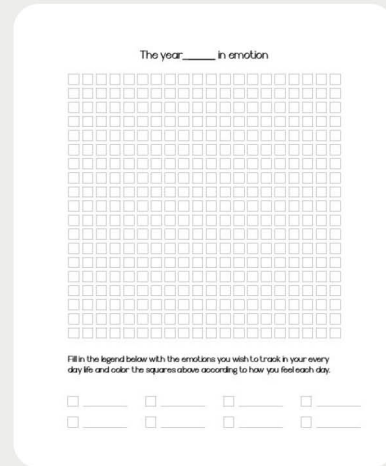


# Emotional Journey



## Design Direction

- 1 Binder style journal** - to allow users to select what kind of content they want in their journal and to give them the ability to add more pages as and when needed.
- 2 Minimal design** - to let users be able to personalise their journals to their style and liking and removing the burden of finding something that fits their aesthetic.
- 3 Variety** - to provide a range of formats that allow users to express themselves via writing, illustrations, collage work etc.



## Design Guide

### Primary Colors



### Secondary Colors



### Emoji



### Primary Font

Cyrene

### Secondary Font

Fira Sans Light *Fira Sans Light Italic*  
 Fira Sans Book *Fira Sans Book Italic*  
**Fira Sans Medium** ***Fira Sans Medium Italic***

### Shapes and Emoji



## Guiding Light Box



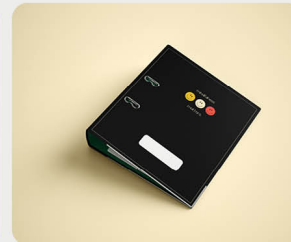
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## Binder Covers

In line with our goal to provide minimal design and variety to help users pick something more personal, users can pick from a variety of binder cover designs.

The binder cover design includes a space for labeling the journal in case you want to use multiple binders for different types of pages.



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## Pages and Binder



## Stickers

User can add these branded stickers to their journal or use their own and personalize what their journal looks like.



## Conclusion

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The Eliza Effect isn't just limited to smart devices like virtual assistants and chatbots. We have been subliminally conversing with inanimate things since as early as the 1960's. At the rate with which technology is improving in today's world, the ramifications of this effect will be passed on for generations to come.

The good thing is that if we make a conscious effort, we can control the extent of change in our behaviours.

Moreover, organizations like **All Tech Is Human**, **Americans For Responsible Tech**, and **International Campaign For Responsible Technology** are initiating important conversations about making the future of tech ethical, responsible and safe for all humans.



# Appendix C: Website Screen Capture

