### **SINGAPORE POLYTECHNIC**

### **SCHOOL OF BUSINESS**

### **AY2022/2023, SEMESTER 1**

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| EP0706 Introduction to Psychology |  |

# CA3 Submission 1

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| Student information | |
| Name: | Justin Wong Juin Hng |
| Admin No: | P2112646 |
| Class | EL/FT/EP0706/06 |
| Lecturer’s Name | Ms Brenda |

This list has **three** topics. You are required to choose any **two** topics for submission. Of the **two** chosen topics, mark an “X” on the topic that you wish to be graded. As this is the first of three graded topics, your lecturer will **only** give qualitative feedback. The final score is the cumulative scores of the three graded topics.

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All research materials included in the journal are to be cited and referenced using (APA/Harvard) citation style.

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| **Number** | **Topic**  **(Write any TWO topics)** | **Choose ONE to be graded - Indicate by putting an “X” next to the topic in this column.** |
| 1. | Discovering Psychology |  |
| 2. | Classical Conditioning | X |
| 3. | Operant Conditioning |  |

**SUBMISSION DEADLINE:**

The submission deadline for Phase 2 is in **Term 1 Week 6** during your respective tutorials.

Work submitted after this deadline will receive 50% of the marks awarded. If you have a LOA, you are to submit the assignment immediately after the end of the LOA. The maximum time allowed is 7 days after the deadline.

Work submitted 7 days (including Saturday and Sunday) after the deadline will neither be accepted nor graded. You will not be entitled to earn any marks for this submission.

**Integrity Statement:**

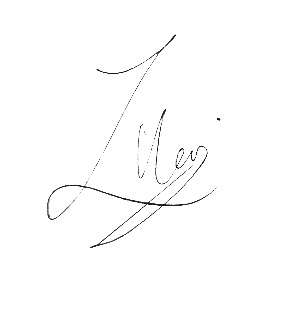
*Academic Integrity is a central tenet of Singapore Polytechnic. The polytechnic examination rules state “*Cheating in examinations and other assessed work is a very serious offence.  This includes copying and using plagiarised material.  Any student, who cheats, attempts to cheat or breaches any rules for examinations and tests will face disciplinary action.  The student is liable to be expelled.”

*All students are expected to complete this work with integrity. This includes not sharing your journal with any student taking the module this semester.*

*Please sign below affirming that this work is your own and has been completed with full integrity.*

Name and Signature

Justin Wong



\_\_\_\_\_\_\_\_\_\_\_

**Topic 1**

Name: Justin Wong

Admin No: P2112646

Topic Name: The Role of Classical Conditioning in Alarm Anxiety

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|  | **Tutor’s Qualitative Comments Only** |
| Content |  |
| Language |  |
| Organisation & Format |  |
| Visuals |  |

**Begin your Learning Journal here:**

I’m sure that almost all of us currently use our phones for alarms; most of our alarms constitute of perhaps 6-7 timings set roughly 5 minutes apart from each other, like this:

![A picture containing text, electronics, black, clock radio

Description automatically generated](data:image/jpeg;base64,/9j/4AAQSkZJRgABAQEAYABgAAD/4R74RXhpZgAATU0AKgAAAAgABgALAAIAAAAmAAAIYgESAAMAAAABAAEAAAExAAIAAAAmAAAIiAEyAAIAAAAUAAAIrodpAAQAAAABAAAIwuocAAcAAAgMAAAAVgAAEUYc6gAAAAgAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAFdpbmRvd3MgUGhvdG8gRWRpdG9yIDEwLjAuMTAwMTEuMTYzODQAV2luZG93cyBQaG90byBFZGl0b3IgMTAuMC4xMDAxMS4xNjM4NAAyMDIyOjA1OjIwIDEzOjAyOjQ1AAAGkAMAAgAAABQAABEckAQAAgAAABQAABEwkpEAAgAAAAMwOAAAkpIAAgAAAAMwOAAAoAEAAwAAAAEAAQAA6hwABwAACAwAAAkQAAAAABzqAAAACAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA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qF43jxvRlz0yKAGUUAKBkgZxnuakaHaf8AWRnjOQ1ABJD5a58yNhnHytmvTNU+FdhYeDtL1qPWWmlu1RmRVG07lz8vfjpQB5ncRCC5kiVw4RioYdDRQBGrEEMpx6EU4SyKxYOwY980AHmyfL87fL056UjOz/eYn6mgBtFABRQAU8yyMioXYqv3VJ4FAEZIAyegooAoR3MiLtHIHrT/ALXJ/dFAB9rk/uij7XJ/dFAB9rk/uij7XJ/dFAB9rk/uij7XJ/dFAB9rk/uij7XJ/dFADJLiSRdp4HtRQBdjjWNQAKfQAUUAFFABRQAUUAMkjEiEEc9jRQBPCgeUK3TBP6VI0SCZ12nG0kHP+zmgBWt98aGJeTgHPBJIz+VRSwyQkBxjPTkGgBqLvdVzjJAroDosP9n+d8mCcfe+f649KAOewA+0njOM1IY4wf8AXAjHGFNABJGirlJlfnpgg16dqvgjwda+C9J1K11nzb64VDIvnr82Vy3y9VweKAPMbhI47mRIn3xqxCt6iigCvFMrqGDYPfnpTt4znd+tAC7+nzdOnNJuB6sPzoANw/vD86snUrgx7N69Mbu9AFbcP7w/OjcPUfnQAbh6j86Nw9R+dADJZljQnIz2FFAH/9kA/+Ex6Gh0dHA6Ly9ucy5hZG9iZS5jb20veGFwLzEuMC8APD94cGFja2V0IGJlZ2luPSfvu78nIGlkPSdXNU0wTXBDZWhpSHpyZVN6TlRjemtjOWQnPz4NCjx4OnhtcG1ldGEgeG1sbnM6eD0iYWRvYmU6bnM6bWV0YS8iPjxyZGY6UkRGIHhtbG5zOnJkZj0iaHR0cDovL3d3dy53My5vcmcvMTk5OS8wMi8yMi1yZGYtc3ludGF4LW5zIyI+PHJkZjpEZXNjcmlwdGlvbiByZGY6YWJvdXQ9InV1aWQ6ZmFmNWJkZDUtYmEzZC0xMWRhLWFkMzEtZDMzZDc1MTgyZjFiIiB4bWxuczp4bXA9Imh0dHA6Ly9ucy5hZG9iZS5jb20veGFwLzEuMC8iPjx4bXA6Q3JlYXRvclRvb2w+V2luZG93cyBQaG90byBFZGl0b3IgMTAuMC4xMDAxMS4xNjM4NDwveG1wOkNyZWF0b3JUb29sPjx4bXA6Q3JlYXRlRGF0ZT4yMDIyLTA1LTIwVDEzOjAyOjEzLjA3NTwveG1wOkNyZWF0ZURhdGU+PC9yZGY6RGVzY3JpcHRpb24+PC9yZGY6UkRGPjwveDp4bXBtZXRhPg0KICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIC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As hilarious as this looks, I think it’s safe to say that there are certain rationales and reasonings behind these multiple alarms, say, maybe we can’t wake up in time or we just need that extra 5 minutes. But there also is another implication behind doing this, the alarm itself.

Oftentimes, we associate our hearing our alarms with a form of anxiety. Say, in the middle of the day, if we happen to hear our alarms, we feel this sudden rush of fear, this sudden sense of anxiety. But why? Well, as it turns out, the justification for this strange anxiety roots itself deep into classical conditioning (Kim, 2020).

How dose classical conditioning associate itself with alarm anxiety? Let’s have a look.

For me, whenever I hear the iPhone Alarm Ringtone, I get a slight panic attack. But why? As we know, the purpose of an alarm is to ensure that we get up on time and get productive work done, to have a responsible start to our day. Unfortunately, said productivity and responsibility comes at the cost of our extended resting time; we can’t sleep for more than 13-14 hours without giving up productivity, which means that there must be an inherent sacrifice to be made, which is where alarms come in; we make that sacrifice by dialing in a certain time to wake up by.

Additionally, for the majority of us, being awoken from our deep slumber to accomplish productive tasks don’t exactly rank very high up on the list of priorities, especially in the mornings. Think “I’ve so much work *again*? I didn’t get enough sleep and I have 6 items on my itinerary due by 12pm!” And so on and so forth.

This suggests that the sound of an alarm may be associated with unpleasant and negative sentiments, since morning alarms come with the overbearing burden of goals, deadlines and plans. This results in our bodies making the connection between ‘Alarm Ringing’ and ‘Stress and Negative Thoughts’ (Kim, 2020).

When we analyse the impact an alarm causes, it’s no wonder we can understand why many of us feel that sense of stress and anxiety.

Now let’s take a look at the role of Classical Conditioning in Alarm Anxiety.

Before Conditioning

Unconditioned Response: Anxiety Attacks

Unconditioned Stimulus: Morning Stresses

During Conditioning

Neutral Stimulus: Alarm Ringing

Unconditioned Stimulus: Morning Stresses

Unconditioned Response: Anxiety Attacks

After Conditioning

Conditioned Stimulus: Alarm Ringing

Conditioned Response: Anxiety Attacks

The unconditioned stimulus would be the general stresses in the morning one might face. These stresses can come in the form of the envisioning of negative thoughts, or the visusalisation of their daily workload in negative manner. This then results in anxiety and panic attacks, causing rapid heart rate, palpitations, and chest pain. This may also result in an increased risk of high blood pressure and heart disease (Cherney, 2014).

Additional effects of Morning Stresses leading to Anxiety Attacks are the triggering of one’s flight-or-fight stress response and the of release a flood of chemicals and hormones, like adrenaline, into one’s system (Cherney, 2014). Constant sudden bursts of adrenaline can damage your blood vessels, increase your blood pressure, and elevate your risk of heart attacks or stroke (Cafasso, 2017).

When we begin to analyse Classsical Conditoning at play, we can see how to manage and mitigate the effects of Alarm Anxiety. What are some examples of the principles of Classical Conditioning at play here?

Extinction

If we present the conditioned stimulus (Alarm Ringing) without the unconditioned stimulus (Morning Stresses) multiple times, the conditioned response will start decreasing until it disappears. How can we do this? Well, we can condition ourselves to listen to the alarm ring at the end of each day, where there will be no more tasks, plans or goals for us to complete or accomplish. This thus rids of any morning stresses.

Spontaneous Recovery

A conditioned response which was extinct prior, suddenly reemerges after a rest period or period of lessened response (Cherry, 2020). An example of this would be sudden anxiety attacks occuring when alarm rings, after a long period of no constant conditioning.

Stimulus Generalisation

Stimulus generalisation occurs when the conditioned response is triggered by stimuli similar to the conditioned stimulus. An example of this can be when other alarm ringtones are heard, or sounds similar in pitch, tone, harmony, volume, length or melody are heard, causing an anxiety attack.

Stimulus Discrimination

As an exact opposite principle of Stimulus Generalisation, where the conditioned response is only triggered by the exact conditioned stimulus, and similar stimuli do not trigger the conditioned response. This occurs when one is able to differentiate between what is and what is not considered the conditioned stimulus. An example of this is the differentiation between an Apple iPhone alarm and a Samsung Galaxy Alarm.

Knowing this, how do we eliminate the existence of Alarm Anxiety?

Looking at the prior analysis, we can takeaway certain triggers, responses, effects and impacts of Alarm Anxiety; with Alarm Anxiety comes the trigger of morning stress. Let’s break it down.

Morning Stress

Caused by: Overbearing burden of goals, deadlines and plans

Response: Anxiety and panic attacks, causing rapid heart rate, palpitations, and chest pain. This may also result in an increased risk of high blood pressure and heart disease

When we look at the factors behind Morning Stress, we can see that the cause factors itself, can’t really be rid of, but can be greater managed. Also, it’s important to note that the existence of Morning Stress itself isn’t the main issue, but the addition of Alarm Anxiety, which carries with it the sudden bursts of adrenaline and its harmful side effects, better known as ‘being startled awake’.

A cat sitting on a table

Description automatically generated with medium confidence 

Similar to this.

When we look deeper, the inherent reasoning for being startled awake stems from the *sudden and loud* sounds generated by the alarm, which *condition* us to not only associate that feeling with waking up, but also with the occurrence of Morning Stress.

So with all that said and done, a possible solution will be to introduce a *gradual* system where the alarm sounds go from soft to loud, and to also a less sudden and jarring alarm sound, and perhaps switch it to cocktail lounge jazz instead.

To add onto that, we can also change the alarm from sound to light, imitating the Sun. This is also known as Light Therapy, where the use of a timed light that slowly increases in intensity mimics the properties of the sun, thus improving sleep quality, well-being and mood (Weatherspoon, 2021). This acts as *non-invasive* method for assisting one to wake up. Additonally, this also works in tandem with one’s inner Circadian Rhythm, a type of internal clock, set on a 24-hour time frame where it regulates one’s sleep-wake cycle.

“In mammals, light entrains rhythms by resetting the phase of a circadian pacemaker located in the hypothalamic suprachiasmatic nucleus (SCN), thus acting as a form of classical conditioning in our system”   
(Amir and Stewart, 1998).

Hence, by using a Sunrise Alarm Clock, we can reduce the grogginess and sudden onset stress caused by abrupt and startling awakenings, thus reducing or even completely ridding majority of the negative side effects associated with Morning Stress, allowing for more peaceful and relaxed awakenings, thus resulting in lesser or even the absence of Alarm Anxiety.

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**Topic 2**

Name: Justin Wong Juin Hng

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Topic Name: The role of Operant Conditioning in Reinforcement Machine Learning

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| --- | --- |
|  | **Tutor’s Qualitative Comments Only** |
| Content |  |
| Language |  |
| Organisation & Format |  |
| Visuals |  |

**Begin your Learning Journal here:**

When we think about Operant Conditioning, our mind usually doesn’t immediately think about machine learning or AI. However, since I study Computer Science, I couldn’t help but see the inherent similarities between the two.

Even when we compare the names, we can see the similarities. But you may ask, what *is* so similar about these two?

Well, let’s take a look at what Reinforcement Learning is.

“Reinforcement learning is an area of machine learning concerned with how intelligent agents ought to take actions in an environment in order to maximize the notion of cumulative reward.” (Kaebling, Littman and Moore, 1996)

Let’s take a look at an example.



(Sagar, 2018)

We can see thaat the objective is to ensure the agent (mouse) completes the maze to get to the cheese without getting hit by the lightning but having to hydrate themselves. Hence, I want to modify the behaviour from it not being to cheese able to reach the cheese, to it being able to locate the cheese

The reasoning behind this machine learning model is fundemantally to build a pathfinding algorithm for an agent to naviaget through an unknown location to reach the goal. This can be seen in real life with pathfinding robots deployed at natural disaster sites to help search for victims.

A person standing on a pile of wood

Description automatically generated with medium confidence

(Dickinson, 2011)

As you can see, the water droplets are located in difficult positions, so not only do we have to watch out for the lightning, we also have to hydrate ourselves, so we need to weigh the viability of going for the water against going for the cheese, adding another dimension of difficulty due to the fact that even though the cheese is the ultmate goal, there is less cheese as compared to water, thus creating an imbalance in the initial weightage and prioritisation of the model

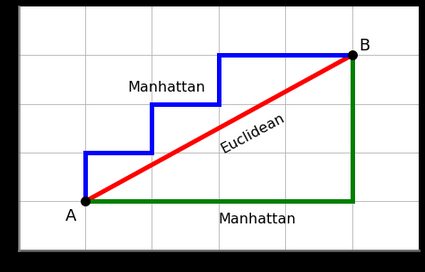
We will be applying Positive Reinforcement and Negative Punishment to train the model; we will be using a points system to train the model. There will be a points system for Reward/Punishment and a Hydration Points system

Positive Reinforcement

Reward the robot for getting the water & getting closer to the cheese by calculating the Manhattan Distance from the Cheese. Increase the points by 1

Negative Punishment

Punish the robot for hitting the lightning bolt or for prioritising the water over the cheese by overhydrating and straying *further* from the cheese (also calculated using Manhattan Distance)



(Wet, 2021)

Additionally, as the mouse moves, we will slowly deduct points from Hydration to ensure that the does not get dehydrated. There will also be a limit to hydration, too; the limit being 10. This ensures the mouse does not over-prioritise getting water over getting the cheese.

Let’s begin the training.

We start the training off with the Rewards/Punishment score at 0 and the Hydration at 10. This means the mouse is fully hydrated and ready to kick things off to find the cheese!

As the mouse progresses through the maze, he will experiment with different routes, going up, down, left and right. At every given intersection, he will try out every single possible direction, and note down the total distance from the cheese.

If he chooses a route that has a distance greater than the lowest possible distance, he will be *punished*. This comes in the form of Negative Punishment, where we deduct the points from his score. Additionally, if he hits the lightning bolts, he will also get punished, and has to restart.

Conversely, if he chooses the route with the least distance, he will be *rewarded*. This comes in the form of Positive Reinforcement, where we add points to his score. Also, along the way, he will come across water. As mentioned before, if he consumes too much or comes to a point where he has no water, he will be punished. Note that he keeps his memory after every run.

The water acts as a mitigation for the posssibility for him to *exploit* the reward system to gain points, as he will prioritise finding the water dropelts instead of heading towards the cheese.

As we repeat this algorithm thousands of times, he will be able to find the safest, fastest and most efficient route to the cheese. Thus, this experiment has been completed with the help of Operant Conditioning in the form of Reinforcement Machine Learning.

An example of this is a pathfinder algorithm which has to nagivate this:

Treemap chart

Description automatically generated

to this

A picture containing text, clock

Description automatically generated

*(Mihailescu, 2016)*

As you can see, there are weights and bombs, which are similar to the water droplets and lightning bolts respectively, in the picture. This is a good representation of what the mouse was doing. As you can see, it travels and maps out past routes, and then finally decides on one that is fastest. You can see it originally trying to use the line at the bottom, but realises that there is a bomb, hence it decides to redirect upwards and finally gets to the destination.

Hence, this is a representation and example of how Operant Conditioning is used in Reinfocement Machine Learning to modify desirable behaviour.

**Resources**

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