Whether it's modern evidence-based therapy, famous self-help gurus, Westernized Buddhist texts, random blogs on the internet - many appear to share the same assumptions regarding the so-called negative emotions such as anxiety, depression and anger.

Those shared assumptions appear to take some form of the following:

"*Yes, depression and anxiety are like hungry lions that can do great damage and knock your life over. But my method will help protect you or at least minimize the damage they may cause. And hopefully pick you up off the floor sooner if you get knocked over.*"

Many approaches consciously or unconsciously take the approach that they have their own version of a chair and a whip, to keep these lions at bay and from ruining our lives. One version might have a metaphorical chair made out of metal; another out of wood. Another could be electrified; and another might add some space-age polymer. All these share the same assumptions regarding the danger of these emotions and the appropriate intervention to help an individual not to be damaged or derailed by them.

What if this idea of emotions (**E1**s in our language) as being dangerous and disruptive is not the whole story? What happens if this almost universally shared paradigm towards these emotions (**E1**s) is an extremely incomplete picture at the very least?

We will propose something that may seem radical at first glance. The proposition has its roots in evolutionary principles, but at each step of this following explanation if you are uncomfortable with that idea you can substitute anything that is closer to your philosophy. How the process comes about is less important than the process itself, whatever removes any friction for you.

As we recently alluded to, many people head to a psychologist or coach or blog or self-help section of the bookstore, holding the idea that these types of emotions are like lions, or even poison gas, with no real redeeming features. In many cases after a "successful" process such as therapy or coaching, an individual might have shifted their view to a degree. They may now see emotions such as depression and anxiety as more like uranium: perhaps they have some potential value and if you are equipped properly with

psychological safety equipment, you can stay relatively safe although the threat is still there. Some people might be able to go a bit further. They might decide that these emotions helped them become stronger, that although there was enormous pain they grew because of this pain and thus there was some value in the end. Others might feel they can never get "on top" of these emotions but learn to create "positively spin". They may feel they are like someone who is chronically injured who has to give up on their dreams but at least they now have time to read more books!

In our last chapter, our goal was to shift our attention to where we could see **E1**s as benign, without positive or negative qualities inherent to them. To quickly revise, we used the rollercoaster twins as well as the itch and ice pain examples to illustrate this point. Thus, deciding whether an **E1** arising in a situation is a good or bad experience depends on your habitual **T2**s about that experience. And those **T2**s are dependent on things like temperament, personality, core-beliefs, self-esteem, past traumas, as well as short term influences such as sleep quality, and that drives why one person might have certain **T2**s and another one a different set of **T2**s about the same emotional experience, such as we observed with the twins on the rollercoaster.

But that was only taking you half way. We are now going to go further. We will make the case that emotions (**E1**s) like depression are not just benign but are "brilliant and awesome life optimizing mechanisms". This may sound absurd and a thought may appear that "Hang on…. Don't people commit suicide when they're really depressed? Surely, it's dangerous to be depressed. Plus, it puts a big dark cloud over everything you do. It's surely not something you want to experience if you don't have to."

To develop our argument we will use the emotion of depression, most people seem to see the emotion of depression as the hardest emotion to see any positive value.

Our goal is that by the end of this chapter you come to understand why it would be possible to feel that "depression is almost a superpower." This might sound shocking and bizarre or even like a ridiculous late-night infomercial, but let's see how we go. Maybe something we don't know we don't know might provide a spark of realization as we proceed.

To start we will take an evolutionary perspective. And when we talk about evolution in this context, it may seem that we are talking about it as if evolution is "making decisions" which is not strictly correct. Evolution has been described as acting like a blind watchmaker.

FIRST PROPOSITION:

We will start with a proposition.

Evolution would not have given us (or left us with) the capacity to experience an emotion like depression, unless it had some functional value.

If depression is what many of us think it is, a destructive force that hurts performance, has the potential to negatively impact jobs and relationships and leads to potential suicide if it gets extreme, as well as creating spirals of avoidance and withdrawal and all other negative consequences, then why didn't evolution remove it from our genome through natural selection?

Follow along and we sharpen the resolution of the proposition as we go.

Before we discuss depression further, we need to define what we mean by the concept of depression. Many people use a simple shorthand to categorise depression in themselves and others. They may see three possibilities for mood: normal and ok; a bit sad, which is still normal; and depressed which is extreme and not normal. Check to see what your shorthand is to describe depression.

In clinical psychology and other medical disciplines a slightly more sophisticated version of categorical thinking is used. Someone is diagnosed with Major Depression if they have experienced at least five out of nine symptoms over the last two weeks nearly every day:

1) Depressed mood or irritable most of the day, nearly every day, as indicated by either subjective report(eg., feels sad or empty) or observation made by others (eg., appears tearful)
2) Decreased interest or pleasure in most activities, most of each day.
3) Significant weight change (5%) or change in appetite.
4) Change in sleep: insomnia or hypersomnia.

5) Change in activity: psychomotor agitation or retardation.
6) Fatigue or loss or energy.
7) Guilt/worthlessness: feelings of worthlessness or excessive or inappropriate guilt.
8) Concentration: diminished ability to think or concentrate, or more indecisiveness.
9) Suicidality: thoughts of death or suicide, or has suicide plan.

Add DSM V reference.

Although this categorical system may seem quite detailed it has a number of obvious issues. Firstly, in this conventional diagnostic system having four out of nine symptoms means you would miss out of this diagnosis. So five symptoms you hit the bullseye but four symptoms you don't. A bit arbitrary? Are all those nine possible symptoms equally weighted too? Is decreased interest or pleasure in most activities, most of the day as interchangeably relevant as thoughts of death or suicide, or has a suicide plan?

Secondly, there is no scale of intensity of any of these symptoms. They just have to be there over the last two weeks nearly every day. There is no way to distinguish someone who has a symptom almost every waking moment to someone who has the symptom arise most of the time. How do we distinguish someone so fatigued by this experience they haven't left their bed for a month with those who are still functioning in their normal life but with a fairly large drag coefficient.

It could be argued that it is possible for a person with a particular three or four of these symptoms experienced at an extremely high intensity has more objective suffering than someone who has a particular five symptoms but with milder intensity. However, the latter would receive the diagnosis of Major Depression but the former wouldn't under this conventional psychological system.

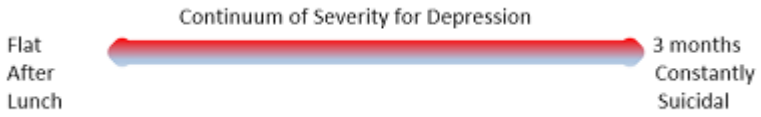
You might wonder why this possible leaky boat hasn't been patched up. One reason could be that keeping simple criteria helps keep consistency across mental health professionals' "ratings". Thus, with this system it is more likely that a Clinical Psychologist in Switzerland would come to a similar conclusion regarding someone's Depression diagnosis as a Clinical Psychologist in New York. We call this inter-rater

reliability and it is helpful in comparing and using research around the world when everyone can say they are comparing apples with apples. The problem with privileging reliability in this way is that we can lose some validity. The construct (in this case our definition of depression) we are trying to measure can become lower resolution as a trade off. This is the problem with categorical models. The alternative, which we might call a continuum model can have the tendency to privilege validity over reliability because the more nuanced a diagnostic system the more subjectivity is likely to come into the picture. We can possibly then be comparing apples with oranges and not fully realise it.

We will conceptualise depression on a continuum of severity.

In reality, people experience depression symptoms (however we want to define them) on a continuum. This can be tricky at first. We will describe our next step in fairly low resolution. Later on, when we have a clearer understanding of the map we can return to increase the resolution of this discussion.

The diagram below visualizes this depression continuum.



At the most extreme right edge of possibility we have someone who hasn't got out of bed for 3 months and is almost constantly thinking and planning their possible suicide. At the most extreme left edge, we have the lightest theoretical possibility of the construct of depression. Perhaps, something like "I feel a bit flat after lunch today." Of course, that experience would not be consistent with the traditional definition of depression. We argued that the existing diagnostic system has arbitrary cutoffs and that "flat after lunch" is on the same continuum as more intense manifestations of the same emotional experience. We are arguing about the continuum of depression itself rather than an arbitrary point on that continuum. And our discussion of evolutionary functionality to follow is related to the existence of the continuum as a whole.

From this perspective, every human being on the planet is somewhere on that continuum everyday. Even at the far left edge of that continuum there are very few people who don't have at least some part of the day feeling a little "flatter" than at other times of the day, even on their best day. Everybody's functioning is impacted by this continuum at any point in time, either to a minor degree (for most) or catastrophic degree (for some) or anything in between.

Even with the lightest possible influence of this continuum on a particular day, then this construct of "depression" is circling us to some degree constantly. It is providing real impediments to full functioning, even when you just "feel a bit flat after lunch".

If that is the case, then we are implicitly arguing that evolution gave the entire human species a hard-wired handicap! That doesn't have a solid foundation from an evolutionary sense. In fact, it is actually more linked to the antithesis of evolution. Try to think of an example of a life-form where evolution has allowed a long-term handicap in that species to remain. Or the more accurate comparison is evolution actually selecting for this obvious handicap. In humans, we have an appendix that serves no modern purpose and it is still there. However, it has no destructive impact on our functioning, unlike our conventional view of depression, and is therefore not a handicap in the sense we are talking about.

If depression is what we have been conditioned to believe it is, this destructive force, or at least a drag coefficient on our ability to function even in its mildest manifestations impacting us daily. why didn't evolution somehow optimize that over tens of thousands of years? In fact, depression seems to be becoming more prevalent around the world in recent decades. We have an onion to peel here.

To help us take a next step we will need to take a trip to the Arctic.

POLAR BEARS

We will use the example of the origin of polar bears to illustrate some evolutionary principles we will apply next to our psychological machinery.

Back in the distant past, black and brown bears were living in arctic forests competing for limited food sources. Due to lack of food or some other reason, some of these black bears started to move out onto the arctic ice to obtain new food sources. We can imagine this wasn't an easy time for these bears, because they had dark fur and could be easily spotted against the white snow and ice.

Their likely successful targets would be a dead or dying animal or one that has just unfortunately (for the animal) sprung out of a water hole right into the arms of a bear as it happens by. A challenging life for a black or brown bear.

Evolution processes are said to begin due to random genetic transcription errors in an offspring that make changes in the genetic structure and expression of that organism. Many of these random changes lead to instant or early death. However, every now and then an error offers that new individual an advantage compared to other individuals in that species in the environment it finds itself in. Thus, through this process, every "blue moon" a bear cub is born with lighter (cream or white) fur. This light coloured fur offers a slight edge. Our white bear might die for other reasons but if so another would be born with this fur colour eventually.

Slight edges are powerful mechanisms. Casinos can make hundreds of millions of dollars on that principle. For example, the casino has the zero and the double zero on the roulette table in its favour so you have a slightly less than 50% chance of winning if you choose red or black because whatever your choice the casino also has the zero and double zero in its facvour.

As mentioned, casinos can build multi-billion dollar businesses based on slight edge principles. As long as they can shuffle enough people through the door starry-eyed (to pay for their golden gondola rides in their artificial canals and pay Elvis his asking fee to squeeze into the white jumpsuit for one more concert run), and they are careful in setting strict betting limits so an alcohol fueled high roller doesn't bet $100 million on a hand and break the bank with a long shot win at high odds.

Because the slight edge is working in the casino's favour, it is possible to beat the casino for a night, but you can't beat it every day for a year if you play straight. Thus, in

the long run, gambling has been cruelly described as generally a “tax for people bad at maths”.

Let’s take our slight edge principle back to the arctic with us. How would our white bears slight edge play out. Perhaps they can take two steps towards prey coming over a mound of snow before being noticed whereas his black furred brother would be seen instantly. This may translate in the white bear catching one in twenty animals it chases whereas his brother might only catch one in eighty things. Thus, this would translate into the white bear being better fed and healthier than its peers, and therefore more likely to pass on its genes as an enviable specimen in the mating game. Now this bear’s offspring will tend to have white fur too based, not on random transcription error at this point, but normal genetic inheritance.

Over time, due to the processes of dominant and recessive gene inheritance, black furred bears will be struggling. There is limited food and if you don’t have white fur you are likely to start going hungry. Even some of the white furred bears won’t survive in this harsh environment either but black furred bears days are numbered as a class. And in time there are no real population of black bears living on the snow and ice.

Theoretically, this could also happen in reverse. Follow this thought experiment. A comet hits the earth and there is a three metre layer of black soot over the whole of the arctic and let’s assume our bear population is initially intact. Well, those white bears are now not having a great time of it, as their white fur stands out against the soot landcape. However, just as we described earlier by random genetic transcription error with one offspring at some point in time a black furred bear will appear. This bear would be harder to see against the black soot and over time and generations, white bears would be crowded out leaving only black furred bears again.

As we have just seen, no willful intelligent force needs to be in play here to create populations of bears optimized to their environment. Just because the outputs of this process would mirror a process that would also involve intelligence does not mean it is required.

The same process is happening in the forest: every now and then a bear with light coloured fur would be born amongst

their darker furred contemporaries. However, white fur offers no advantage in dark forests. In fact, just the opposite. Light coloured fur would be easier to spot in such an environment and would offer a structural handicap to survival compared to the other bears. That is part of the reason why you don't find population of white bears living exclusively in dark forests.

EVOLUTION AND DEPRESSION

What have the polar bears got to do with emotions such as depression?

If depression is what we are conditioned to think it is, a destructive force impeding our functioning in the world, or at the very least, a drag coefficient on our operating, that many in our society have decided is an illness or disorder once it crosses the arbitrary boundary we described earlier then we have to ask ourselves a question. Perhaps more than one.

Anywhere on the continuum of feeling "a bit flat after lunch" right through to chronic suicidality and everywhere in between appears to be a distinct disadvantage to functioning, effective survival in the world and passing on our genes. At most points in human history, most individuals were constantly on the edge of starvation, having some extra drag on functioning could be all it takes for you to expire.

Why didn't evolution, over time, through the random genetic transcription error process we have elucidated, give rise to an individual without the capacity to "feel flat" after lunch, let alone ever feel hopeless or unmotivated or suicidal?

Wouldn't these individuals, born without this "negative" capacity to feel "flat after lunch" or ever be really depressed or not have the possibility to be "knocked over" by emotions and lose motivation and functioning, wouldn't they function at least slightly better, or in other words, have a slight edge, in those early harsh environments than their contemporaries stuck with the daily dangerous changing weather system of moods.

This "handicap" would put other individuals at a competitive disadvantage so those who never felt flat or lost motivation would have this distinct edge in environments long

in our past where the edge of starvation was ever present for everyone. That slight edge could be the difference between life and death in harsh environments or difficult winters.

Again, we can repeat, why didn't evolution, through the process of natural selection not just remove these destructive emotions, or why were the capacity to express these emotions part of our genome in the first place? Individuals without the capacities to experience these emotions would appear to have distinct advantages of functioning. They are driving without the handbrake on or without an anchor dragging across the sea floor.

If depression (and other "problematic" emotions) were illnesses or disorders per se, which directly contribute to lower functioning it should have been driven out of the population through evolutionary processes? Right? **That has not happened at all.**

Thus, the narrative of depression as a destructive/dangerous/risky force or illness appears to be an incomplete picture at least. If we accept that point, it is only a short step to the proposition that the capacity to experience depression must provide some evolutionary advantage.

A potential theoretical objection could use the example of a phenomena such as schizophrenia. The presentation of schizophrenia (or being on the schizophrenic spectrum) has been found to have heavy genetic influences. It is hard to argue any benefit of being on the schizophrenic spectrum and therefore it could also be argued that therefore depression could be similar. The argument might be that a phenomenon that is deleterious to functioning can still exist in the human population and that could mean we could keep depression labeled as a completely unsavoury affair.

There is a crucial difference with the schizophrenic spectrum and the depression continuum as we defined it earlier. Evolution did not, over countless generations select for schizophrenia so that we all experience psychosis to some degree or another on a daily basis. Discounting the views of undergraduate philosophy students of course, who might contend that we all live in a simulation.

But, evolution did this very thing with emotions such as depression. Travel to any part of the world, visit a community

of: Inuit, Amazonians, sub Sahara Africans, or suburban Parisians and you will find that every individual you come across has the capacity and the lived experience of being on the depression continuum everyday. Whatever cultural derived label they denote that continuum, however mild it may be on a particular day.

Another objection that could be raised is that evolution does not necessarily remove features that don't offer advantages. The example of the appendix could be cited. It serves no useful purpose at our current point in evolutionary history and can occasionally (if it bursts) provide life threatening consequences. However, not having an appendix has not provided an evolutionary advantage and so the process of natural selection is agnostic on its physical expression into existence. However, if we take the conventional view of depression (which we generally won't in this narrative) then the constant drag coefficient of the depression continua would appear to offer real evolutionary disadvantages, unlike the appendix.

Even bigger objections could come from those who have constructed their views on depression based on the map that depression is a "neurochemical imbalance" or "genetic" in another sense of the term than we have used earlier. We will address the functionality of those maps later when we discuss game theory.

Let's take a breath. We have arrived at a point in the map where we find a crossroad: either we have to take the conventional view of the "dysfunction of depression" or the veracity of evolutionary principles because you can't have both. If you choose the latter then let's climb to the next lookout. If you choose the former come along for the ride anyway, you can always change your mind.

You might say "I can see theoretically there must be an advantage to depression as the capacity to experience it has been selected for across the entire human race. However, I can't work out what is the advantage of depression?"

THE ADVANTAGE OF DEPRESSION

We are now at the point in consolidating our discussion with the re-assertion that if depression didn't have deep functionality and usefulness in the human condition then the capacity to experience it would have been removed (or would

never be in the human genome in the first place) from the species over time through evolutionary processes.

The conventional mainstream view of depression is not that currently. Our view in the west may have changed over the decades to allow depression to become more socially accepted. Perhaps the many high profile people detailing their struggles has played a part in that as well as other factors.

Rather than some sort of character flaw or weakness, depression is now often talked about as an "illness like any other illness." This well-intentioned attempt to remove the stigma of depression only goes part of the potential way. Substituting **T2**s relating to character flaws, weakness or the like for **T2**s instead relating to illness does not automatically remove the influence of **E2**s of, for example, shame. According to our model, it could be argued that, we are just substituting one way of "something is wrong with us" to another flavour of "something is wrong with us".

For our next journey we need to head out to answer the question "if depression has theoretical value, then what is that value and how can it be fully utilized?"

We can create functional hypotheses for any emotion. Using the evolutionary perspective we could argue that all emotions have real importance to our optimized functioning and that's why we have evolved a certain set (or range) and not more and not less. At this part in our evolutionary history, we have an optimized palette of potential emotional possibilities that is constantly providing us with information. We will look at the functionality of depression in more detail then we will discuss potential functional narratives around the other emotions of anxiety, stress, anger and confusion. Shame has a special status so it will infuse our next chapter.

We can create an analogy to start. The rational mind could be seen as the equivalent of being able to see in the visible light spectrum. That's what you see with the naked eye. However, there is the gamma, x-ray, ultraviolet, infrared, microwave and radio wave sections of the electromagnetic spectrum. Visible light fits between the ultraviolet and infrared according to wavelength. We can't "see" in the others using the naked eye. The military possess night vision goggles, some using a combination of low levels of visible light with infrared to allow soldiers to see in almost complete darkness.

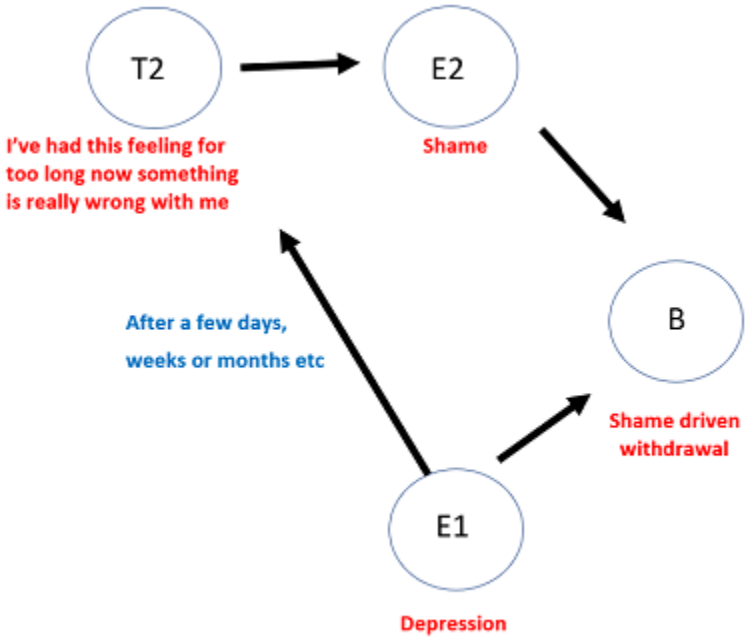
We could conceptualise emotions as a way to give you data, experiences, perceptions, attentional focus from a different perspective than your rational mind would. They give you data that that rational mind is not able to see in and of itself. A form of "night vision" perhaps. In the Western tradition emotions and rationality have often been seen to be philosophically ad odds with each other. We will return to this shortly. The philosopher Hume contended that rationality and emotions are really complementary. The emotions help us work out "what to do" and the rational mind helps us "work out how to do it". Evidence for this complementary structure can be seen with people who have damage to the emotional processing parts of their brain. It is common for this to contribute to paralysis in decision making processes. There are other well known syndromes that include challenges with emotional processing which also have decision making challenges that co-occur.

Let's be more specific using the emotion of depression: we could put forward a proposition that **depression is a signal from the brain that something in our lives may have changed, something in our life many need to change, or something in our life is in the process of changing and we need to withdraw, process, accommodate, assimilate, integrate all that and come back into the world at a higher level of functioning than we did before the emotion came along.**

From inside this perspective, all emotions, such as depression are acting as optimizing agents and that would account for the reason evolution has not only not removed that capacity from our experience and functioning but selected for it across the species.

However, this method of optimisation has been somewhat destabilised by cultural influences and this needs some unpacking. Since, at least ancient Greek times, we have been taught that the rational mind is the pinnacle of how we should be using our brains and attention and that the "passions" need to be managed and controlled or else dire consequences will ensue. That has been part of the western cultural landscape and fabric ever since. Most have heard or "told themselves" at some time or other to "stop being emotional, be rational." The family environment can also be influential as we will discuss later.

A visualisation may be helpful here. The diagram illustrates the potential conventional response to depression.



We have left out the **T1** circle to help focus our attention. We can see here a potential cultural level **T2** about the **E1** of depression. In other words, if depression is experienced for more than a few days, weeks or months (whatever culturally bounded time-frame is apparent), then either the person is doing something wrong by acting irrationally or is ill according to current and historical cultural norms.

This activation of cultural level **T2**s might also bring thoughts and statements such as "Come on. Get rational. Stop being emotional. Move on. Time to pull your socks up." Ironically, these types of thoughts act as a maintaining mechanism, almost completely contrary to the original intention.

Even caring and well-meaning loved ones may communicate a variation of these messages as they have also been conditioned with the idea of the dysfunction, danger, potential illness of depression. They act through the notion that is not good to be feeling like this and that the person needs to get their rational mind and functional behaviours back as soon as possible. This has the effect of potentially delegitimizing

some **E1** emotions. It is common for loving parents who don't want their children to "suffer" when they feel strong emotions to give out the message over years that these **E1** emotions are damaging, dangerous and need to be controlled or avoided if possible. By lovingly trying to help their child "not have to feel" these emotions they often unconsciously help fuel nascent negative **T2**s about emotions in their developing child.

As the diagram shows, negative **T2**s about the **E1** experiences drive **E2**s of (particularly) shame amongst other weaponised emotional variants as we previously discussed, which leads to a potential withdrawal. However, rather than a functional withdrawal of exploration, integration and optimisation, it may lead to a shame based withdrawal, a potential hiding from the world, because they feel "less than" and liable to be rejected from "the tribe" and thrown out into the proverbial wilderness alone. Shame in that ancient environment may have been a signal that group norms may be being violated at a deep level and was a life threatening indicator that an individual might risk banishment and therefore death if the transgressions continued. It could be argued that it was at least partially an alarm system for survival in a group context.

After experiencing this shame withdrawal, weeks and months can pass and a person may end up facing enormous negative consequences from this experience. They may lose their job or business, their friends may drift away eventually (or be actively pushed away), their primary relationships might be affected or break down. It would be very normal and understandable for the person and other observers to notice this and say: "Look what depression did to their life," because before depression life was not like this.

It would seem on the surface that depression is the key factor leading to life being impacted. However, let's use another analogy here. Someone receives a diagnosis of cancer and completes weeks of chemotherapy with terrible side effects such as hair falling out. These are real negative consequences they weren't imagined. They would clearly feel justified in blaming their cancer for their nausea and enormous fatigue.

Then a few days later it was found that the cancer was a misdiagnosis. The samples had been mixed up at the lab. It turns out the person didn't have cancer at all! However,

their suffering, their nausea, fatigue, hair loss etc were all real and experienced. But it couldn't have been caused by the cancer because there was none. It is clear that is was the chemotherapy, or their response to the perceived cancer that created such real negative consequences.

We are arguing here that the mainstream conception of depression can be analogous to mis-diagnosed cancer. As we have been conditioned to think of depression as an "illness" it seems plausible and even obvious that depression caused the life chaos that appeared. However, lets look at this idea of potential spurious correlation in another way that doesn't suck us immediately into our conditioning.

If I made the statement that depression causes chaos in peoples lives most people on the street would think that statement so obvious it does not need to even be articulated. The causal relationship seems so clear that it is not questioned. However, if I give you another situation where the correlation is even greater let's see what your reaction is. The statement is: in American seaside resort towns there is an extremely high correlation between ice-cream consumption and the number of drownings.

I would be on pretty sure ground to predict that your reaction to that statement about ice-cream is not the same as for the one about depression. You will likely want to know more because a straight causal relationship between ice-cream consumption and drownings may not feel intuitively correct. It may feel some other factors are involved. And your intuition would be correct. However, this same intuition regarding depression and life dysfunction would unlikely activate against your conditioned beliefs about depression.

How does this legitimate correlation come about?

In these seaside resort towns ice-cream consumption increases in hot weather for obvious reasons. Hot weather corresponds to peak holiday season in these towns and an enormous increase in the number of people visiting these seaside resorts. With this enormous influx of people, the rate of drownings naturally increases over those times of the year that few people are in the town and even fewer people go in the water (eg winter). And with few people and colder weather ice-cream consumption drops precipitously.

This accounts for the high correlation between ice-cream consumption and drownings. While there is a correlation between ice-cream consumption and the level of drownings, ice-cream does not CAUSE drownings. Thus, while the level of "chaos" in someone's life might seem to be correlated with levels of depression it does not automatically mean that depression CAUSED the chaos. There is potentially more going on under the surface.

Let's take our fictional little seaside town. An official comes up to the mayor and they have this exchange:

Official: "Mr Mayor, I have some disturbing news, I've noticed in the statistics that there is a high correlation between ice-cream consumption and drownings."

Mayor: "That is disturbing news. This could be a threat to tourist season if this leaks out. Our economy would take a huge hit and I'd be voted out at the next election."

Official: "That seems entirely possible sir. What should we do about this?"

Mayor: "Well, of course we need to ban ice-cream sales for a start before news gets out about all this. Hopefully that will dramatically cut the number of drownings"

Official: "Right sir, I will get on it right away."

Fast forward twelve months and because there is no ice-cream most holidaymakers are drinking special coconut milkshakes that have taken the town by storm as a refreshment now ice-cream has been banned. The same official organizes a meeting with the Mayor:

Official: "Mr Mayor, I have some more disturbing news. Banning ice-cream had no effect on the number of drownings last season. In fact, when I looked at the statistics for this year I found a very high correlation between coconut milkshake consumption and the number drownings. We have another crisis sir with the election now looming only a few months away."

Mayor: "We need to ban those coconut milkshakes immediately! This is a potential political and economic disaster."

Official: "Right sir, I'll get that in motion today….."

We could play this out year after year with whatever staple refreshment becomes the new trend as previous ones are systematically banned. As you can see, banning ice-cream, or coconut milkshakes or any other item will have no impact on drownings as correlation is not the same as causation.

In our depression example, it is the activated **E1** (depression) that is actually a friendly, optimizing force that may create a toxic response at **T2** due to misunderstanding and conditioning. **E2**s of, for example, shame and frustration and dysfunctional withdrawal follow. This continues in a destructive feedback loop. As we said, it is not the **E1** of depression itself; it is the response based on **T2**s that have arisen in reaction to the **E1**s that creates the dysfunction. Remember our roller-coaster riding twins? They were both experiencing the same **E1**s of "heightened emotional activation", which one labeled as excitement from the **T2** view and one labeled as fear and terror looking back from the **T2** view. This led to one twin going back for multiple rides and the other twin staggering and shaking to the car park and then locking themselves in the hotel room.

Under our conceptualisation we are saying that depression is a functional signal. It could be saying: "Hey, I've got your back. I want to help you optimise. There is something in your job/relationship/social life/living arrangements/life direction etc that we might need to look at. Go explore it. Let's spend some time investigating how to work through this and optimise."

Or else, in other situations the signal could be: "Hey, something has changed here, it feels like a loss (job, relationship, loved one etc) and we need to work to make sense of this loss and incorporate it and move to create new maps now that this (insert factor) is now gone from our life."

The second example describes a grief process while the first is a situation where nothing has "gone wrong" explicitly but that there is a growing discrepancy between values or needs and current life circumstances. Nothing may be disastrously "wrong" but it feels something needs to change.

Interestingly, conventional psychology has struggled to incorporate the concepts of depression and grief in a coherent framework. On the surface both appear to share many qualities of experience. Depression in the conventional sense is seen to require treatment while grief (unless prolonged and complicated) is seen to require time to process. Our map allows both of these concepts to neatly co-exist as neither is dysfunctional and both can drives forms of optimisation just from a different triggered starting point. In broad terms, one of discrepancy, the other of perceived loss.

The signals do not give a "join the dots" plan. They are broad calls to explore, process and optimise. To start a process of engagement. This fits with another common experiences related to depression. Many people who have "depression", at some point, start to take some random action in a vaguely right direction. They haven't solved any problems here yet. In those circumstances, they may start to feel a little less "depressed" when they start "doing something" constructive. This phenomenon can be the rationale for the previous well-meaning action of loved ones to get the person to "start taking some sort of action."

We argue that depression is an evolutionary driven "action tendency" to get a person to withdraw and explore. The person may believe that the depression experience itself is the pathology rather than an optimising signal. Then the random action in a vaguely right direction might make them think that the situation is now clearing up once the depression drops below a certain threshold of intensity (or number of symptoms). They stop looking at what the signal might be pointing to stop taking exploratory, potential optimising action. The depression then returns. If we provide a voice to this returning "depression signal" it might be something like the following:

"Keep going. We're optimising We're going to work this through. Don't stop now. That's why I'm helping you optimise and to start that exploration process to optimise. That's all I'm here for. I'm not here to punish you. I'm not here to show there's something wrong with you. I'm here as a friendly voice to help you optimise in the face of actual or needed change. Or else evolution would have gotten rid of me before I was this fundamental, hardwired, potential or every mind on the planet."

DON'T KILL THE MESSENGER

Most people mistake the messenger for the problem. They think the feeling itself is the problem, needing to be extinguished (based on their conditioned **T2**s about the **E1** of depression). Rather the signal is "here is the message to go explore, once you are exploring I've done my job" which will bring the depression intensity down as a by-product of the actual exploration.

There are many ways someone might want to "kill off" the message and messenger because of their potential misunderstanding and misinterpretation. All forms of avoidance and distraction can come into play here. Alcohol and substance use, other behavioural addictions, eating disorders etc.

Some can develop a complex relationship with anti-depressants too in these circumstances. It is not unusual for someone to take anti-depressants in response to depressed feelings arising. I am not arguing against anti-depressants. Sometimes they can be useful to a point. It is easier to learn to sail on a calm lake than an ocean with ten metre waves. They may even feel after a number of weeks or months that the medication has been successful in tackling their depression. They then go off their anti-depressants and within a certain period of time many find their symptoms returning. They may think that they have "relapsed" or that they came off the anti-depressants "too soon." Again if we provide the process with a voice it might be saying something similar to:

"Hi. I'm back to help. You've numbed my voice for the last 18 months. The issue with you (job/relationship/life direction etc) is still there. We need to withdraw and explore and optimise. Let's get back to it."

Our response at the **T2** level might be something similar to "*No, no! You again. You are making me feel weak and defective. I'm going to try harder to get rid of you. You're making me feel like a loser! Go away! I better go back to (insert: avoidant behaviour/ shutting down/ returning to antidepressants etc).*"

As we try harder to ignore or avoid the signal to help optimise (that is, the **E1** of depression) it gets louder, signaling that things are suboptimal and need attention. If someone thinks the emotion itself, and its level, is the problem they might end up calibrating their experience like

a thermostat. They become depressed, they may take some proactive steps to "get rid" of this depression. As they start to feel their mood improving, they may think: "Ah, I think I'm headed in the right direction, because the feeling of depression isn't as strong and that was the problem" and then potentially stop moving forward with this exploration and optimisation. A pattern and feedback loop arises which becomes a potentially life-long periodic struggle.

We can see parallels to the self-help movement which has gripped the western world for decades. People's desire to self-help and improve themselves often arises when they feel waylaid by emotions such as depression, anxiety and stress. They have negative **T2**s about those **E1**s and desire to "get rid of" the **E1** emotions that appear to be destabilising their life.

As the map we are constructing is likely to be counter to your conditioning we will repeat part of the central narrative in other words. Thus a person might endeavour to rid themselves of these **E1**s because of their negative T2 interpretations of them. They may engage with a new therapist, self-help book, seminar, retreat, YouTube series, Ted Talk, online course, blog series etc. It is likely that they may gain an initial psychological sugar hit or "easy win" from this process because part of most of these activities will be some sort of proactive action or as we described earlier "random action in a vaguely right direction."

By engaging, even in a minor way, with the recommended action of the consumed material, a reduction in the intensity of the **E1** will often be experienced because those structures interpret this as the equivalent of "great, we are on our way to explore and optimise this." However, our rational, conditioned mind is running an alternate narrative of "great we are on our way to get rid of these emotions." As we proposed previously, the job of the **E1**s is to direct our attentional focus to exploration and optimisation and once we start this process those emotional systems often lower their intensity. To put a voice to this process: "Good, you are on your way to exploring so you don't need us to remind you now."

As this process unfolds, our rational mind running the alternate narrative may quickly add the interpretation: "my emotions seem to be settling and as they are my my real problem I think I'm starting to do ok." Once the intensity of the **E1**s drops below the "pain" threshold we may think that

the job is done and we can just go back to our normal routine. But if all we do is rely on the initial sugar hit without any real exploration and optimisation related to the emotional signal we were given the **E1**s are likely to kick back in and say "hey, you stopped exploring how to optimise here, we need to get back into that process" and the intensity of the emotion arises again followed by our conditioned negative (**T2**s) interpretation of it.

The rational mind may say: "*I'm disappointed, I thought that book/therapist/online course/seminar etc would sort this out but it didn't turn out to be as good as it initially seemed as my "destructive" emotions are returning. Oh well, better go back to the self-help section to find the real answer to my problem. I might buy a book with (neuroscience/neuroplasticity/mindfulness/compassion/swear word/etc) in the title as it seems that that might be the answer or the cutting edge of psychological technology.*"

Why are there dozens of new self-help books coming out every month for decades. It appears people aren't getting what they need long term. Most people seem to interpret their lack of success with those materials as either: "I haven't been diligent enough in applying the material", or "maybe I didn't fully understand the material and need more", or "I'm no better so it must mean I'm more damaged than I thought I was as this book had a lot of endorsements." The common theme for much of this material is that it explicitly or implicitly targets **E1**s as the culprit which we have hopefully demonstrated maybe a low resolution map.

FUNCTIONAL WAY TO INTERPRET DEPRESSION

A client once surprised me when discussing their experience with integrating and working with these maps. They stated: "I now see depression as almost a superpower." I was interested to hear more about how they came to that conclusion. The essence of their perspective is as follows.

Initially, you re-engineer your **T2**s about your **E1** of depression. Instead of automatically thinking you are inadequate, defective, or something is wrong with you as those **E1**s arise you are now more likely to have thoughts such as "There is something useful and helpful about this emotion of depression. Let's explore and find out what the signal is trying to tell me."

How you ask yourself the question is crucially important here. Let's look at an example to illustrate. Outside my office window is a park. I might ask a client to look out the window. If I asked them the question "is there anything beautiful you see out of the window?", it is very possible for them to answer "ummm, not really." They may have been to a lovely botanical garden recently or the Japanese cherry blossom festival and what they see in no way lives up to those comparisons.

However, if I ask the question a different way: "What is the most beautiful thing you see out the window?", this elicits a different process in response. We have started with a proposition that there must be something beautiful out the window and set the mind the task of uncovering it. We have left no doubt there is beauty there somewhere and removed the possibility of comparisons as part of that process. Given enough time to think, people universally come up with an answer even if it takes some minutes of contemplation. Asking the question in this way forces an answer by allowing access to deeper processes and memories with a sharper attentional focus. It also forces thinking outside of existing paradigms and structures.

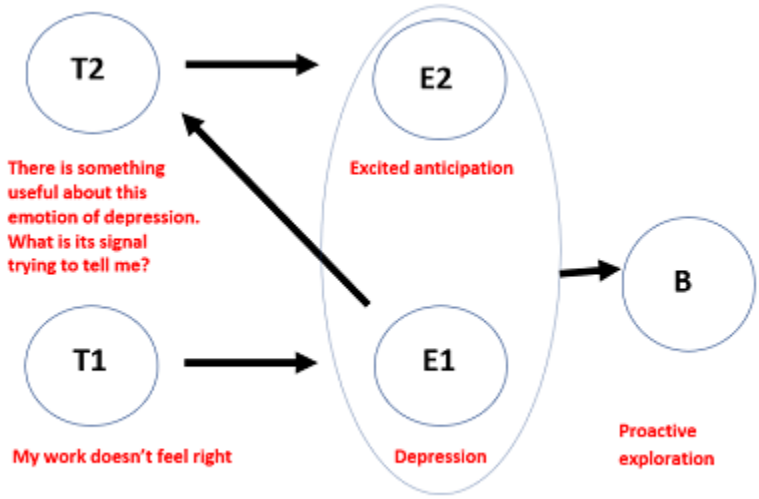
Moving back to our **E1** of depression. Asking the question "is there something important in this signal?" opens the possibility of a negative answer if, after a few minutes, no ideas have come. The answer "no, there doesn't appear to be" is common. It's like the brain will only entertain the possibility for a finite period of time and then dismiss the question in the negative if nothing appears. It is as if the negative answer is the default and we are trying, usually unsuccessfully to change that.

Alternatively, if the question is asked a different way: "what is the usefulness of this signal of depression?" or "how is this signal of depression trying to help me optimise?" an open loop will be created where thinking and pondering will occur until an answer surfaces, either in three minutes or three weeks. It doesn't have to the be "right" answer as there is no such thing but what arises begins a process of optimisation. Remember, we are privileging functionality over futile searches for objective truth. We could label this approach "meaning making questions" and we will take a much deeper look at them, and their transformative power, later in the text.

As we start to dilute our habitual, negative **T2**s about emotion with more "nutrient rich" **T2**s related to functionality of emotions such as depression, those functional **T2**s will start to become available more often and earlier in our responses to **T1**s and **E1**s arising.

If a person had the experience 80 times in a row of asking "what is the value of this depression?" and coming up with something useful and functional in response at some point, then the 81st time they are likely to trust this process more securely than after the first couple of times, when they are experimenting with this perspective.

We can visualize the functional process we just described using the following model diagram:



After repeated successful operations of this system over time, it can be seen that the traditional **E2**s of shame and frustration may be slowly substituted for a more excited anticipation about the possibility of learning, growth and optimisation the person is now anticipating. This process starves oxygen from the conventional weaponsed emotions such as shame,frustration, existential anxiety at **E2** as well as the conventional self-critical flavoured **T2**s that usually inhabit that space. At first it takes some work to formally direct attentional focus through this framework. With time and success comes trust and a shift in default modes of thinking and feeling.

Let's return the client who described depression as "almost a superpower". They verbalised their perspective with words to the effect:

"The superpower idea comes from the fact that when I feel the initial depression coming on at **E1**, I immediately move into an optimising mindset which leads to measurable growth and momentum over time. I don't give my mind any other alternative now. It is exciting. However, when I see everyone I know beset by their **E1** of depression or anxiety, or something else. I see them desperately expending all their energy trying to get rid of these feelings and draw no benefit at all from their potential information. Thus, I have a superpower potential that doesn't seem to be available to others and that nobody notices."

WHY HAS DEPRESSION INCREASED OVER THE PAST 50 YEARS?

It has been reported widely that depression across the world has increased over the past 50 years and some point to the possibility that within the next few years it could become, followed closely by anxiety, the most important health crisis facing society. Words such as "epidemic" have been used. However, using our model, we may see things from a slightly different perspective. I am not debating the increased incidence of depression over the past few decades when it has been more carefully measured on a population wide basis. However, what this means is open to a different interpretation.

Since at least the 1950s it has been clear that pace of change across all areas of experience and life has increased in much of the world: technology, relationship structures and how people relate, work structure etc. In the 1950s it would not be unusual for someone to expect to start work in a company and work their way through that company their entire career. These days that is a rarer expectation. Indeed, we can now expect to change roles or jobs between 11 and 15 times in our careers, which is a major disconnect from the past. Divorce rates have increased as well as views about relationships and their permanence. Technological changes: smartphones, dating apps, remote work, social media, to name a small fraction of major technological impacts. These changes have an enormous potential on many levels both to enhance life as well as to create great destabilisation to existing processes and structures.

In the face of this ever increasing change, isn't it to be expected that the part of our brains that has evolved to help us optimise in the face of change would be activating with more people, more often? We proposed that depression was a mechanism to direct our attention to where "something may have changed in our life or something may need to change in our life and we need to temporarily withdraw and process, explore, accommodate, assimilate and integrate this and come back out into the world as a more optimised individual." In an environment of increasing change this mechanism will logically be activated more often across more people. Rather than being a "mental illness epidemic" it is a potential "activation of signals for optimisation in the face of rapid change epidemic" with a mask on.

WHAT ABOUT OTHER EMOTIONS?

In our discussion to this point we have focused on the emotion of depression. This is because, as we stated, it appears the hardest emotion to make a case for its usefulness through the conventional mainstream perspective. Now we will briefly provide starting map templates for the potential functionality of other emotions. We will limit our discussion to the examples of anxiety, stress, anger and confusion. Shame will be the focus of the next chapter.

ANXIETY

Anxiety has historically been seen as the second most problematic emotional syndrome behind depression. Anxiety and anger are part of the popularly known concept of the "flight or fight response" to threat.

For this discussion we will slice the conventional layperson view of anxiety into two perhaps arbitrary components to gain clarity. We will decide that fear is related to a perception of an immediate threat and anxiety is related to a perception of a future threat.

We will look at the fear category first. Let's take our minds back tens of thousands of years ago to a group of our ancestors standing around in some type of relatively sparsely vegetated wilderness. At some point there is a rustle in the nearby bushes and everybody instantly runs up their nearest tree or finds similar safe shelter quickly, thinking that a lion is about to attack. However, there is one young adult,

who considers himself the intellectual of the group. He attempts to think statistically, doesn't run, and yells out to the rest of the group: "why are you running up trees, the odds are overwhelming that it is just the wind or a bird like it was yesterday." He turns out to be correct as a bird flies out of the bushes. Everyone feel slightly embarrassed.

The next day a similar thing happens, the group is standing around and there is another rustle in the bushes. Again, everyone except this one individual instantly runs up a tree. He yells out, as is becoming his habit: "come on everyone, didn't we talk about this yesterday and the day before? Why are you wasting all this time and energy running up a tree when it is most likely the wind or a bird?" Seconds later it becomes clear that it was just a breeze moving through the bushes. Everyone feels slightly embarrassed again.

This "skeptical individual" and the rest of the group play out this same scenario, day after day, with the same result. The "skeptical individual" has a perfect hit rate on his prediction each time there is a rustle in the bushes. Day after day, week after week. However, nothing changes. The group continues to run up trees each time. The "skeptical individual" becomes more frustrated as time passes, gently mocking the rest of the group.

Nearly six months passes with this daily pantomime playing out the same way each day. The group members feel suitably embarrassed after each false alarm from their tree branches. However, on day 181, it turns out that this time it really is a lion and our "skeptical individual" turns out to be lunch for the hungry lion.

Our "skeptical individual" never gets to pass on their genes and thus we are all the descendants of those who ran up the tree (the fastest). Evolution has worked out that false positives are far better than false negatives. That is, the best survival strategy is to assume the worst and be wrong 999 times out of 1000. Even though the price is wasted time and energy (and perhaps embarrassment) 999 times, on the one occasion the predator is there you are safely up a tree. The alternative is to be cool, calm, collected and right about imminent possible threats 999 times out of 1000. Then you get to be dead forever after the one time you are incorrect. Neurotic and alive is superior to relaxed and calm and dead within six months as far as passing our your genes.

We have inherited this nervous system which is optimised for a time long past. However, cultural evolution far outpaces biological evolution and thus this system is not as effective in the modern western world as it might otherwise be. It has a very itchy trigger finger. Metaphorically running up a tree when there is a "rustle in the bushes" is not an optimised strategy when the lions are behind the proverbial glass at the zoo. To milk the metaphor a bit further, our nervous systems are employing these ancient programs when dealing with threat when much of this threat is more of the future oriented kind, where even if lions are present they are on the horizon, may not have seen us, and won't get here for a long time if ever. Operating those ancient programs in complex, multidimensional, modern socio-cultural environments reduces the options and chances of an optimised pathway being found in a situation. While we can't change the hardware we can change the software.

Anxiety is sending a signal that "something we value may be at risk." In past times this would be our life. In modern times that has transferred to factors related to social, self-esteem, financial, and other threats. A text from our boss in ALL CAPS or a delay from our new partner in returning a message can activate the mechanisms designed to get us up a tree and away from lions. These signals are false alarms the vast majority of the time. You just have to think back to your hit rate when T1s that drive anxiety appear. What percentage of the time are these correct going back through your entire life? These signals are formally **T1**s from our perspective. We don't ignore these **T1**s but we don't automatically believe a **T1** just because we have it. It needs to pass an audition.

People who get caught in constant anxiety loops often set themselves up to fall into philosophical traps where they maintain the default position of the anxiety driving **T1** being true until it can be proven that this is not the case. At its most extreme expression, this often dooms people into a perpetual spiraling feedback loop, and conditions such as Obsessive-Compulsive Disorder or Generalized Anxiety Disorder often contain these loops as an inherent part of their maintenance mechanism.

Let's use another example. The "anxious" part of someone's brain tells them that there is a radioactive teapot orbiting pluto and that it will eventually come to earth and cause them great harm. The "rational" part of the person's brain

isn't fully on board with this idea. It has the insight that this seems unlikely and far-fetched and possibly should be put aside as irrational. An internal dialogue such as the following may ensue:

Anxious Brain: "Yes I know, I'm not saying that I'm 100% sure about that teapot thing. But it is really bugging me. How about you travel up to pluto and check it out and we can resolve this once and for all and move on. If its not there then we can settle it."

Rational Brain: "Hmmm……I'm not really buying this teapot idea but to put it behind us I will go up there and double check so we can stop wasting time, energy and attention on this."

Rational Brain flies up to pluto on a borrowed spaceship and scans pluto. The results are transmitted back to ground control where Anxious Brain is waiting on the edge of their seat.

Rational Brain: "I've just scanned pluto and no teapots appear on the scanner. Didn't expect there would be but that's a relief all the same."

Anxious Brain: "Wow! Great news. So relieved to hear…….. Hmmmm…….. Just wondering though……. Perhaps the teapot is currently orbiting on the dark side of pluto when you did the scan. Can you go around the other side and do the scan of the dark side just to put things to bed with certainty?"

Rational Brain: "Umm.. OK…. I suppose…."

Rational Brain flies around the other side of pluto and repeats the scan. Again, no teapots appear on the scanner. Another wave of relief passes through Rational Brain.

Rational Brain: "Ground control. No teapots reported. Mission accomplished. Coming home now!"

Anxious Brain: "That's great…….. But not so fast. It's possible that the teapot has moved back to your original side while you were on the dark side. Can you go back and check?"

Rational Brain: "Ahhh…….ok"

We will just describe the rest of the interaction between Rational and Anxious brain. Rational brain moves back to the original side and predictably cannot find a teapot on the scanner and reports it back. Anxious Brain then asks Rational Mind to check on top of the planet as the teapot maybe there. Unsurprisingly Rational Mind reports no teapot but Anxious Brain wants Rational Brain to double check on the bottom of pluto. Again, no teapot. As you may guess, Anxious Mind still isn't sure and wants Rational Mind to keep checking. Its like playing whack a mole at the amusement park. When one thing is dealt with another pops up. Rational Brain and Anxious Brain continue this dance for the next six months at which time Anxious Brain shifts gears slightly and says to Rational Brain:

Anxious Brain: "Well, you've spent six months trying to prove there is no teapot and you haven't been able to do it. Sort of starts to point to the big possibility that there must be a teapot if you can't prove there isn't one."

At this point Rational Brain is confused and is starting to think there might be a teapot.

This illustrates the impossibility of trying to "prove a negative" and that process often traps people psychologically. If I state that a pink elephant will at some point crash into my office window in the future, prove to me that this won't happen. How would you do it? This same type of difficulty is confronted when working with your **T1**s and underlying belief structures in general. We will return to this later. This example links with lions and bushes example previously. Our brains think that the rustle is the bushes is a threat until it was proven otherwise.

ANGER

Many people find anger a problematic emotion. Either from their **T2** interpretations of the actual experience itself or from their interpretation of what being angry means about them as a person, or their perception of what others will think of their behaviour in response to the anger that is arising or has arisen.

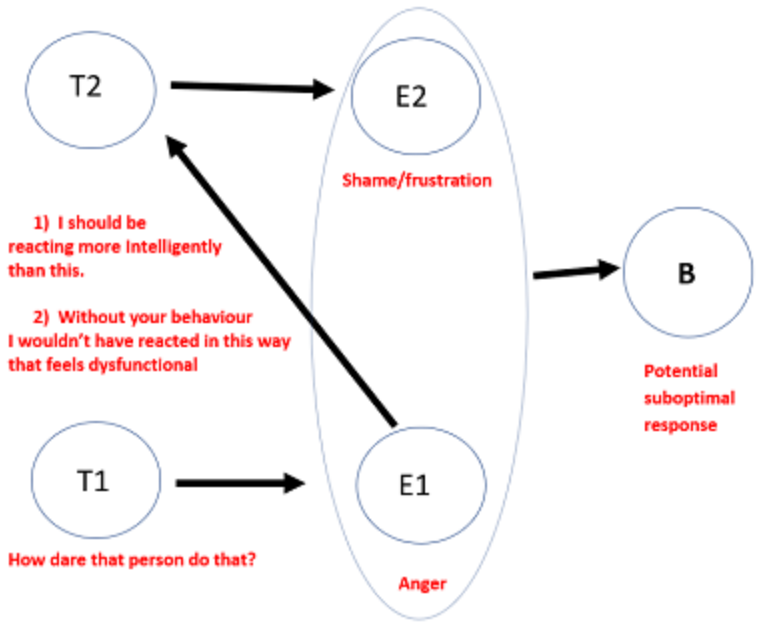
However, some people with certain personality structures use anger as a tool of control whereby that anger can make

others either afraid and compliant as well as to drive others to second guess themselves with a resultant deterioration in self-esteem over time. This falls outside the scope of our discussion.

If we consider anger at the **E1** level we can now conceive of a range of possible **T2** interpretations that we might have by default.

- **I need to fight and lash out to protect against the threat I feel (eg physically, socially or self-esteem)**
- **I'm annoyed at myself for getting angry because anger is a low functioning response to a threat of this kind. I should be using intelligence, problem solving and interpersonal skills to solve this situation in front of me.**
- **I'm annoyed at the other person or even object for triggering my anger and the consequent self-criticism I feel for even getting angry.**
- **My response to anger is so problematic it's going to make my life much harder and/or has been making my life extremely hard up to now.**
- **I need to shut down anger or try to avoid situations where there is a possibility of it arising because it is so dangerous to feel.**

We will map this visually using our model.



We have an interesting possible addition at **T2** here in the diagram. The first one "I should be reacting more intelligently than this" can be the element of self-directed criticism that triggers the **E2** flow on effects. However, we have added a second one, "without your behaviour I wouldn't have reacted in this way that feels dysfunctional." This second **T2** is more "other directed" and is a common but not universal component of anger responses.

Remember, these **T2** interpretations are not usually consciously considered and are usually semi-conscious or unconscious. Our conscious attention is almost wholly used up by the **E1** anger and physiological arousal with the **T2** and **E2** response being so quick it can feel like it is part of the **E1** anger itself. But we could see the process like the hummingbird's wings, which look like a blur in real time but in slow motion video, show the deliberate movement of the wings.

These **T2**s link to **E2** emotions such as shame and frustration and it is from these **E2**s that the unpleasant experience of anger and potential dysfunctional behaviour stems from. Not from the **E1** anger itself. We will argue that anger is a supremely functional emotional state and our conditioned **T2** and **E2** responses to it dilute or completely contaminate its inherent evolutionary driven usefulness.

Following from these types of **T2** interpretations come the corresponding **E2** emotions. Shame and frustration are so common we use them repeatedly in our examples. Of course, there can be many other possible **T2** responses to anger and the ones listed are purely a common subset.

As discussed before, if we try to "manage" our anger then we are reinforcing negative **T2** interpretations of anger, that it is problematic in some way, and risk intensifying E2 emotions. This is not to say that we might not develop habitual behaviours in response to our anger that cause us real difficulties whether that being socially or even legally. However, that is not related to the **E1** anger itself but the behaviours that result after our **T2** cognitions and **E2** emotional responses to these cognitions.

Some people are suspicious of the idea of the usefulness of anger and feel that there is "always a better way to deal with a situation than with anger". We should not conflate

anger with dysfunctional behavioural responses to anger. Let's look a bit more deeply using an example. During the COVID19 pandemic someone related a story to me. They had recently been to a social justice protest and had received a lot of criticism and abuse being told they were risking people's health by protesting in large numbers so close together. Two days following they were driving past a high school just at the end of school and saw many hundreds of schoolchildren shoulder to shoulder with no repercussions. He started raging in the car and yelling to himself while at the same time feeling embarrassed that he was getting so angry and felt it was a futile response.

Let's unpack this a little more carefully. Before we do we need an hypothesis for what the evolutionary functionality of anger might be.

The proposition is that anger is a signal to direct your attention to the possibility that it appears there is a discrepancy between what you think SHOULD be happening and what you think IS happening and that this discrepancy is some sort of threat.

This threat could be to your life, or status, financial security or any other context related area. Notice how we use the word "think" in the phrases "think **SHOULD BE** happening" and "think **IS** happening". This opens us to the possibility that we are misreading or misunderstanding the situation. In response to that activation will be a range or physiological processes such as moving blood to the larger muscle groups and releasing cortisol and adrenaline in anticipation of having to enact a serious response to a situation.

The anger response in general will activate to the level of our perceived level of threat. That perceived level of threat may be different for different people in the same situation. We have all seen some people who act with complete rage at the slightest criticism and others who seem to be less aroused in even objectively threatening circumstances. Other elements and feedback loops in our model, such as core beliefs account for this variation over time. Clarity about these interactions will arise as we discuss the rest of the model in more detail.

To decide how to respond to anger we need to add another level of detail. In addition, this is something that will

need to be practiced initially to slow down our habitual responses and open the way for more functional use of anger.

We could artificially categorise the difference between what we **think should** be happening and what we **think is** happening into three different threat levels. In category one we could put in the imminent threat to our life or our family's life. This could take the form of some form of predator cornering us (animal or human). Without a response it is possible we and our family could certainly meet our demise.

Category two could be situations such as being humiliated by a co-worker or boss in a meeting where we feel it could have been handled more effectively by them. An instant response to this is likely to be suboptimal as improvising with anger in subtle, multi-dimensional social contexts will almost guarantee a negative outcome. In this situation, as we are not under immediate physical threat, the most effective response might be to spend time afterwards thinking through the strategies you may wish to employ in relation to the incident. This can allow your frontal cortex to do the processing rather than your Amygdala. Your Amydala works in binary terms such as punch it in the nose or run up a tree. Having the Amygdala develop instant policy on the run when your life is not at stake, and you are dealing with multidimensional sophisticated circumstances, will rarely end well.

The 3rd category situation would be like our high school example above. Yes, there is a discrepancy between what the person thinks is happening (300 schoolchildren just standing shoulder to shoulder) and what they think should be happening (social distancing or staggered bell times and buses etc). The question is now how important is this discrepancy to your values and your sense of self. This is an individual question. The person in question said it doesn't really matter to them on reflection. However, another person might feel the need to ring the school to discuss the situation. The consideration of costs and benefits of action and how it aligns to fundamental values of each individual will determine a course of action here.

The key practical issue we now confront is how to practically implement this ability to process a situation as we describe. Particularly as habitual responses are so rapid and unconscious usually. We need to open up space between the

experience of the **E1** stimulus of anger and our **T2, E2** and **behavioural** responses. A deep philosophical buy-in to the map we are discussing is important. If any cognitive dissonance occurs, even theoretically, to the ideas we are talking about the brain will always default to its habitual patterns. Secondly, we can train opening space between the **E1** stimulus and what happens next with exercises like Mindfulness of Emotion which can be used to train this.

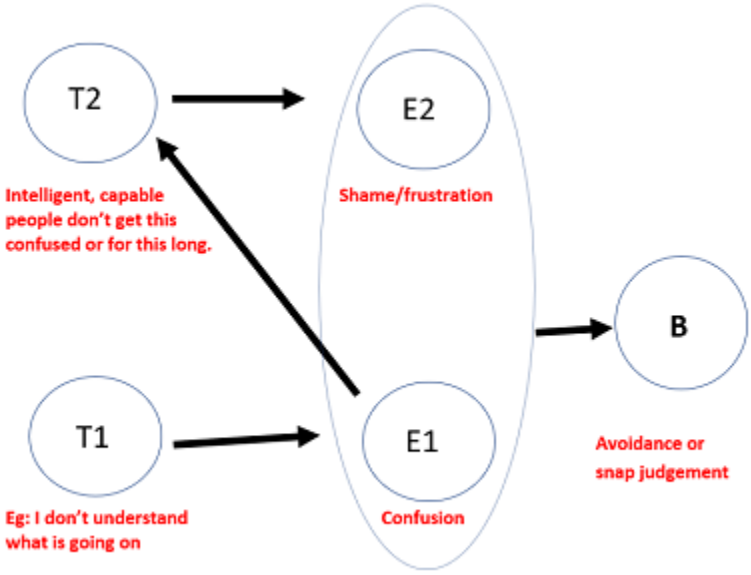
We then only really need to quickly check if the anger arising is related to category one. If not, we have time to process category two and three at our leisure and decide our response, if any.

In time we may get so skilled that we can pre-process many situations at the **T1** level even before the **E1** fully arises. This will be most useful when in situations that are not Category one which may have traditionally led to us having anger followed by a less than optimal response.

One final point about anger is that training in these sorts of functional responses to the emotion of anger can often lead in time to the reduction of the emotion of anger itself. We may move straight from perception and interpretation of the situation to functional behavioural response without needing much activation of anger to direct our attentional focus to this.

CONFUSION

It may be surprising to have the emotional response of confusion make our shortlist for discussion. We will draw it in using the model diagram below then discuss.



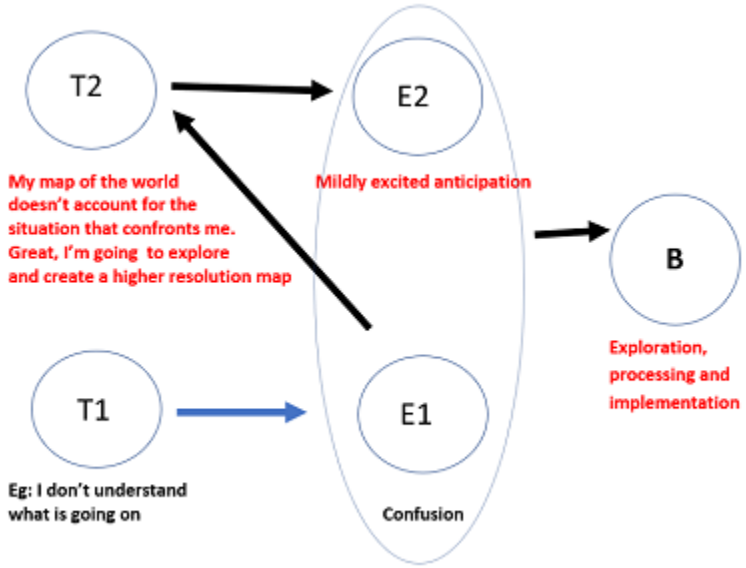
Some form of stimulus may generate an initial **T1** of "I don't understand what is going on." This leads to the **E1** of confusion being generated. **T2**s such as "Intelligent, capable people don't get this confused or for this long" might come next for a person who views themselves as high functioning. It should be noted that someone who views themselves as low functioning may privilege their attention on **T2**s such as "here we go again, my stupidity raises its head again as usual." How those **T2**s are generated will be explained when we add another feature of the model further along.

As we are familiar, **T2**s lead to **E2**s and in this case we have drawn in our shame and frustration examples. The **B** (**behaviour** circle) is shown with the options of avoidance or snap judgment. The idea is that the confusion is generating shame and frustration which drives a desperate attempt to get safe from the confusion. Thus, avoiding the source as quick as possible or making a quick snap judgment to "get out of confusion" and create some artificial certainty and quick action, is often a driven response.

If we are confronted by something confusing and we think on a subtle level that this is a poor reflection of us we will want to resolve that confusion as quickly as possible. However, if every minute we are in the state of confusion it is also triggering, for example, shame and frustration, we may not give ourselves the time and space to optimise our response to confusion. If the potential optimised solution to our confusion is sixteen steps over the next seven and a half weeks, but we are experiencing shame and frustration the

entire time, we may settle for a two step solution we can engage with immediately to attempt to "get rid of" the uncomfortable emotions. This potential suboptimal solution may turn out to be similar to paying one credit card off with another which can compound our difficulties over time and result in a negative feedback loop which depreciates our self-esteem.

How could we use the model for a more optimised approach?



In the more optimised system we start with the same **T1**s and **E1**s:

T1: I don't understand what is going on
E1: Confusion

However, we now shift gears at the **T2** level in response to our **E1** of confusion. Here we may have, because of a conscious awareness and decision, to import non-habitual **T2**s in response to the **E1** of confusion. A high nutrient level example of a functional **T2** in relation to confusion could be:

"my map of the world doesn't account for the situation, event, or data in front of me. Great, I'm going to explore and create a higher resolution map!"

It should be remembered that putting in more "functional **T2**s" in this process is not like just flipping a switch and moving from "dysfunctional" **T2**s to "functional" **T2**s. The process of shifting is more subtle. We could see it as a form of dilution and is the same across all **E1** emotional systems we would like to optimise. Existing dysfunctional **T2**s will still be there initially, but over time, as the **E1** of confusion is activated, the possibility of a more functional **T2** response may become more available. At first, it may be a distant whisper that we can't hear all the time or very well, when our habitual **T2**s and **E2**s kick in. However, with time, awareness and attentional focus, this whisper gets louder and more available until eventually we trust them and act on them and before we know it they become our new default response to that **E1** going forward. The process often slowly evolves outside of our conscious awareness.

We can apply this re-engineering to all the so-called "negative" emotions so that eventually we don't see them as part of some dark side of our emotional experience as a counterweight to the light side of emotional experience such as love and joy. We don't have to settle for a notion that we have to "take the good with the bad." We can remove the concept of "bad" emotions altogether over time.

STRESS

The emotional experiences of stress and anxiety are often used interchangeably. On the surface they can seem almost indistinguishable. Many of the physiological processes can overlap as well as threat based thoughts (**T1**s) and resulting **E1**s, **T2**s and **E2**s.

For our purposes it can be useful to make a distinction. Our proposition is that anxiety may be seen as an emotionally based signal (**E1**) or "action tendency" stemming from **T1**s that "something we value maybe at risk". Stress, on the other hand, is proposed as sending an emotional signal or action tendency stemming from **T1**s that "we are overtaxing our resources right now and our system cannot sustain this current level of overgearing." Thus, different stimuli and messages may be involved but emotional and physiological experiences of the two may be very similar.

That stress signal isn't necessarily telling you what to do about this potential overtaxed state. It isn't

automatically saying you need to "cut-down". Working out how to get "more output with less effort" would be a perfectly valid response to that signal also.

It might be a good time to give a practical, personal example of how the model can play out related to the **E1** of stress. One recent October I remember stopping at the traffic lights at lunchtime on a thursday. I don't remember what I ate but I remember what happened while sitting at the traffic lights not far from my office.

Everything that I describe next occurred during the less than two minutes it took the lights to change from red to green. As I pulled the car to a stop I became aware that I was feeling stressed. This had been a very rare occurrence over the last few years. Mainly because of my internalisation of the principles of the model we have been discussing. My first thought was "that's interesting, I wonder how this is going to play out. Will I need to consciously activate my awareness of all the ideas in this book? Will they be a bit "rusty"?" Generally, it was a feeling of curiosity. Almost immediately I had a realisation that the stress had first started arising on monday and had steadily risen until it had caught my attention this thursday lunchtime while sitting at the lights. It was like my mind had increasingly tried to get my attention by intensifying the feeling of stress until I became aware of that signal. It was clear to me how this came about. Earlier that week my father had been rushed to hospital and this led to his leg being amputated. I had spent most of my spare moments talking to doctors and researching the way forward to ensure his survival and recovery. I thus allowed myself to lose awareness of my own psychology due to the crisis unfolding.

My reaction to this stress response was a type of gratitude and relief. It became clear to me that this feeling of stress was a benign, helpful, friendly force. It was giving me the signal that "hey, you are overtaxing your resources and you can't keep going at this pace." There was a clear sense that I needed to work out how to recalibrate so I could manage the heightened level of responsibility in a sustainable way. Immediately, I was able to bring my commitments to mind over the next few days. I quickly was able to determine tasks I could reorganise, drop, postpone, or delegate. I sent a quick message to my secretary in our shorthand. Almost immediately I felt a stability return to my emotional system. The stress was not there to punish me or tell me I was incompetent but

was there to help optimise me in the face of an ever changing reality.

My feeling of gratitude rapidly extended further. The thought came to mind about how marvelous it was to have a "team of emotion helpers" in my brain keeping an eye on things. I can take random action in a vaguely right direction and my emotional system of joy, anxiety, depression, anger, confusion, stress etc will give me signals to help me optimise when the need arises. I can focus on exploring what is in front of me, link it to my values and goals, and keep an eye out for a relevant emotion should it arise to help guide my interaction with the reality in front of me.

While this psychological landscape was playing out I also became aware of how different my reactions would have been in my early twenties and I daresay this next description would not have been an altogether rare experience for the average person. At a younger time I would have had a very different reaction in this same scenario when I noticed that I was feeling stressed. My first set of thoughts would have linked to the idea that being stressed (**E1**) was a sign that I was not on top of things, maybe not as smart or as resilient as I thought I was (**T2**). This would have increased feelings of frustration (**E2**) and potentially add shame(**E2**) and anxiety (**E2**) as I started to worry how long I would be stuck in this state. Every minute in this state would have reaffirmed my fears that I was showing some sort of defectiveness in the moment (**T2**). Worse still, I would sometimes just blame someone for how I felt or for "putting me in this position" in the first place. Thus I would have potentially looked for a scapegoat. My next reaction would be to either withdraw into a sulk and feel sorry for myself or more likely try to "prove" myself by working harder to show that I was not defective, but a smart guy who can push through. Ironically, the more I pushed the more stressed I would get which would send this whole system into a negative feedback loop until a few days later I would likely start developing physical symptoms and my functioning would further destabilise and deteriorate. I would tend to "muddle through" and then through sheer luck stumble on a period of relative calm for a while before overtaxing myself in the near future and start the whole process again.

Much like a dream where it feels that more happened in the dream than the 30 minute nap really indicated would be possible, the lights changed at the end of this thought

process and I felt a calm energy begin to return and which remained.

SUMMARY

Our proposition is that all emotions are benign, helpful, friendly forces. Asking the meaning making question of "how is this current emotion trying to help and guide me to optimise in the face of the reality I am experiencing right now" is a practical way to build a bridge between theory and practical utility.

Depression: "Something may have changed or something may need to change and I need to withdraw, process, accomdate, assimilate and come back out into the world at a higher level of functioning and understanding that I had before."

Anxiety: "Something I value may be at risk."

Anger: "There is a discrepancy between what I think SHOULD be happening and what I think IS happening and there is potential threat of some sort involved."

Confusion: "The event, situation or data in front of me does not fit with my existing map of the world. I need to withdraw and process to incorporate this and end up with a higher resolution understanding of the world.

Stress: "Currently I'm overtaxing my resources beyond a sustainable point. I need to respond to take care of my system."

Emotions could be viewed as psychological senses. We have five physical senses: sight, hearing, touch, taste, smell. These senses support us interacting with the world for survival and our highest good. A functional view of emotions would see them through the same lens. Creating more information for our highest good if we choose to see it that way.