

# Fractals

*My threads are worn,  
My words are broken, broken  
Spirits reborn,  
feelings awoken, unspoken.*

*Lay down,  
We're silent frozen fractals,  
Now we're fading away...*

- *Keep Shelly In Athens*

## Occurrence I

Fractals are patterns that repeat forever within themselves. They have no beginning and no end, no biggest state and no smallest state. Picture a triangle that's divided inside into four triangles (the middle one is upside down), and then each of the three right-side-up smaller triangles are then divided inside into four even smaller triangles of their own (the middle ones are upside down), and then those triangles are divided inside, and so on and so forth until infinity. It's a matter of perspective, though: that first triangle may just be one of the smaller triangles within an even larger triangle, which could be a smaller triangle within another triangle, and so on and so forth.

*After leaving my apartment*

*I feel this cold inside me*

*It howls away all through the market*

*It calls your name... - Young the Giant*

I had already been lying awake for what feels like hours when my alarm shatters the silence filling the room. Despite my desperate efforts to drift back into unconsciousness, my mind had spun its wheels across matters recent and past yet again, leaving me to roll about uncomfortably (writhing agony?) as I attempt to escape the warm, swelling nausea that seizes my body. This is nothing new, although with each passing day it becomes harder and harder to suppress this overwhelming feeling (or, truly, lack thereof). It's as if an abyss has formed within me, larger, impossibly, inside than out, an endless void that I can probe forever and find nothing, and yet somehow with all this newfound space, my lungs still find it difficult to bring in the frigid February air. I'm tired, but can't sleep. I'm sick, but can't vomit. I'm heartbroken, but am unable to shed a single tear.

Outside the confines of my bed, white light floods the room, the sun's timid rays reflected off of snow. Unwilling to abandon the warmth and security of my blanket cocoon, I stare with weary eyes at the flakes cascading down outside the window. I've seen pictures of snowflakes that show how each branch of the flake is really just a tiny version of the whole form, just like how each day with depression is really just a tiny version of a week with depression, or a month with depression, or a year with depression. Trying to see the beauty in each falling flake, I squint, but my astigmatic vision can't make out anything but white dots from here.

## Occurrence II

Fractals exhibit a trait known as self-similarity. This means that each part of a fractal is exactly like the whole itself. In other words, the second (third?) occurrence of a pattern within a fractal, containing all the occurrences that come after it, is *exactly* like the first (second?) occurrence of the pattern, even though the second (fourth?) occurrence of the pattern is a part of the first (twelfth?) occurrence. The third (first?) occurrence, too, exhibits the exact same traits as both the first and second occurrences, even though it is a part of both of these occurrences (is there anything there at all?).

*It's always best when the choir is out*

*I am the pick in the ice*

*Do not cry out or hit the alarm*

*You know we're friends till we die...*

- Radiohead

“I’m not feeling very good today,” I text my mother. I sigh and sink into the black, fuzzy bedsheets I lie on, staring at the bleak metal bars of my roommate’s bedframe. I’m unaware of the laughter next door, the cheerful voices reverberating outside in the hallway, the friend upstairs who is thinking of me at this very moment. Nothing reaches me but the music emanating from my record player across the room. “Are You Going With Me?” screams from the speakers, and I shut my eyes and shudder as a blistering guitar line pleads the title question with writhing agony. “*Yes, always,*” snarls my inner self, and my eyelids shoot up in alarm at the volume of his speech. It drowns out the music as a dread fills me.

My inner self is not a friend.

He knows me like I know myself, because he is myself. There is no difference between the two of us, other than his affinity for sleek, black attire. I speak to many people; he speaks only to me. The performance that I flubbed, the poor test grade, the death of a close friend – he takes these events and my attempts to forget them and replaces them with his musings: static noise, intentional car crashes, shotguns. He is louder than ever tonight.

I’ve tried to get him out, to breathe deeply until he is blown out like steam from parted lips in December, to talk until he disintegrates like disjointed syllables, to twirl my fingers across frets until he bursts out of the amplifier like a flurry of notes. None has worked but to quiet him for a fleeting moment. On occasion I wonder if he torments me so because he, too, has an inner self within his own mind, who shadows his thoughts much like he shadows mine, and he too seeks frantically to rid himself of his companion (himself?). I would understand. He’s stuck with his inner self (myself?) much like I am stuck with him. (If that is the case, then, within whose mind do I reside?)

My phone buzzes frantically in my hand, and when I answer and hear her voice on the brink of tears, I can feel my mother’s fear and concern cutting across the distance between us, as if the 200 miles that separates us is just farther than the reach of her outstretched fingertips. Her words overcome the noise of both the music and my mind. For a brief flash, I am relieved, until her panic seeps into me, and I too begin to wonder just what is wrong with me. I’m suddenly no longer so vehemently opposed to my therapist’s insistence on medication.

### Occurrence III

Most, if not all, “fractals” are not true fractals which continue on to a point of infinitude. It is impossible to draw a complete fractal (at least, in this universe). No matter where you start within a fractal, you can continue filling it in (or out?), forever. There is no end, because once you complete one pattern, there remains an even smaller (or larger?) pattern to be drawn inside (or outside?), and when you draw that one, yet another presents itself to be drawn. If you ever found a true fractal, you could lean in until you tipped forward and tumbled in, falling, falling, in (or out?) to it, never knowing which way is up (or down?) or out (or in?). Falling forever.

*I need a place where I can make my bed*

*A lover's lap where I can lay my head*

*'Cause now the room is spinning...*

*- Keane*

The pale light seeping in from the window is drowned out by the sickly yellow aura of the lamp beside me. Squinting, I stare down at the notepad on my lap, my pen hovering above the page. Somehow, the lamp and the sun combine to cast the notepad into a richer darkness than it would be with either of them alone. Across from me, my therapist glances down at her squeaking phone before setting it aside. Her gaze returns to me, her eyes watching me expectantly through thick glasses that are framed by long, black hair. The side of her face farthest from the window is arrayed in shadow.

On the notepad are scribbled a few fragmented sentences in two columns. Transcriptions from my inner self's endless monologue are scrawled in one column, and my (his?) own combatant responses fill the other. I'm supposed to dissect each of his disparaging thoughts, shred it, tear it apart until it yields an even deeper (shallower?) fear or lie or form or shape or whatever ludicrous name the therapist calls it. Eventually (supposedly), I'll unearth the “seed thought” from which the others grow, the “ghost in the machine”, the “broken cog.” Then, I can destroy it and be instantly repaired.

The exercise is altogether pointless, I decide, but I don't voice this opinion. I'll continue on, probing the depths of my chemical negativity, falling, falling, in (or out?) to it, but I already know I won't reach an endpoint, because there isn't one. Depression isn't a sliver lodged deep within your mind that becomes infected – it's a black hole that you have to constantly fight against before you are pulled in too far and all light ceases to exist.

## Occurrence IV

Because of fractals, it can be hard to know anything. Consider the length of the East Coast of the United States. If our base unit of measurement is 100 km, and we connect points along the coast that are 100 km apart, the coast will be  $x$  kilometers long. However, let's say our base unit is 10 km, so we measure points along the coast that are 10 km apart. In this measurement, we will obtain a measurement that is greater than  $x$ . And if we continue reducing our base unit until it becomes infinitely small, our result will continue to increase until it becomes infinitely large. It raises the question: how small should our base unit of measurement in a situation like this be? Should we measure only the distances between small peninsulas? Run a tape measure along the dark line where the Atlantic waves wet the sand? Calculate the curves of each individual stone and jagged edge along the cliffs of Carolina? Because, clearly, the East Coast has a finite (infinite?) length.

*You be the moon, I'll be the earth*

*And when we burst, start over, oh darling,*

*Begin again, begin again, begin again...*

- Purity Ring

Walking alone through a timeless spring night, I'm intimidated by the moon. The moon, unlike the sun, is truly inevitable. At night, its glow offers the greatest illumination of any other celestial body, its glow pervading all that you can see while the sun sleeps. By day, it hangs ominously in the sky, foreboding and unwilling to let you forget its presence. Standing beneath it tonight, I am helpless to hide from it. Seeking the shelter of roof subjects me to the dull gloom of artificial lighting (artificial darkness?), a far more effective catalyst to my brain's incorrect (correct?) chemical reactions than the moon can ever be. At least I can pretend, like I do with my depression, that the moon is beautiful.

In a moment, I'll part from the moon, leaving it to its own solitary contemplations (but bring depression with me). I'll go to bed (no guarantees on whether or not my inner self will allow sleep to come or not), to wake up again and renew the struggle tomorrow, to drag myself through the day, to go to bed again, to wake up and renew the struggle again the next day, and so on and so forth,  $x$  (infinite?) more times. Or maybe I'll wake up and a month (10 km?) will have passed, or a year (100 km?), and suddenly time will seem a bit more timeless. I can only hope, though; experience shows that  $x$  will continue to grow, and I will continue to remind myself that  $x$  more days is still better than no more days, despite my inner self's constant disagreement with this concept. Depression's lunar cycle, then, perhaps, can be called beautiful, I decide. At least, it can be when you are hiding from the fact that it cannot be hidden from.

## Occurrence V

Fractals are almost everywhere. Trees and their branches exhibit fractal tendencies, as do pinecones, snowflakes, clusters of stars, and the shells of snails. Fractals exist in the paintings of hip young artists who have dreadful or fantastical ideas about the world, in the spirals of hypnotists, in the passage of time, in the notes and rhythms of music. In reality, the word fractal itself is just a means of describing in simple terms something about the word that we cannot describe any other way. In other words, words (fractal, depression) have only the meaning that we give them.

*So if you ever feel neglected,  
And you think that all is lost,  
I'll be counting up my demons, yea,  
Hoping everything's not lost...*  
- Coldplay

With weary eyes, I stare up at the bottom of my roommate's mattress, mentally reviewing my schedule for the next day. Just as sleep begins to settle in, I'm jolted awake by a panicked thought and fling my covers to the side. I've almost forgotten my medicine yet again. After stumbling across the room, I sweep my hands across my desk until my fingers brush a small red bottle. It rattles as it tips over. Fishing out one round pill, I breathe deeply and let my nerves settle. The medicine is bitter, its taste lingering in my mouth for a few seconds after I've swallowed it, as if to remind me of the terror that it locks away every day.

Before, I viewed taking anti-depressants as defeat, as submission, as admitting that there was something wrong with me. To resort to medicine was to forever be in need, constantly reliant on little white tablets of venlafaxine to bury my inner self so I can't hear him. However, after that night when only a phone call from my mother stood between me and 500 little red tablets of ibuprofen, my therapist's insistence finally got through. Even once I held them in my hand, though, I couldn't work up the nerve to swallow one for several days. After taking them for a month, I was finally experiencing the closest thing to normal life that I'll ever know.

The medicine doesn't cure my depression – nothing will ever do that. Instead, those little white pills cast a net across the mouth of the abyss, so that when I slip and begin to tumble into depression again, I'm caught before I fall too far. Lying in that net, I am safe, but even the net itself is a reminder of everything (nothing) that lies below. All I can do then is to squeeze my eyes shut, sing myself a song of hope, and never look down.

Having taken my prescription, I tiptoe back across the room and slide back underneath the black, fuzzy sheets. Satisfied with the day's work, I let my eyes close. My schedule for the next day runs through my mind again. I don't dread what lies ahead, and I even manage to muster a glimmer of excitement for the new morning. Depression is just a word, I recall as I drift farther and farther into unconsciousness. By admitting defeat, I am able to escape Hell, at least for one more day. And that is all I can ask for.

## Works Cited

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In approaching this project, I found myself attracted to chaos theory without having any sort of idea as to what real-world connection I was going to be able to create. I began by checking the library for books about chaos theory and soon found that a concept within chaos theory, fractals, was far more manageable and less cliché than chaos theory as a whole. I managed to find a book devoted solely to fractals, which I drew most of my factual information from. From there, I began to explore more practical ideas behind fractals: why should we be interested in these strange patterns at all? I used the library database to find articles that discussed in depth the use of fractals in music, art, videography, and the like. I also came across a song by a Greek pop duo that inspired both ideas and emotions within me, as well as the use of song lyrics to connect the opening science-speak of each 'occurrence' to the experiential scenes that followed. While I originally attempted to craft a family lineage piece, as I learned more and more about these phenomenal shapes, I simply had too many ideas about my experience with depression to suppress. Were I to continue my research on fractals, I'd like to pursue more information about their discovery and if they have any sort of cultural significance or symbolism in other cultures.