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Spotlight Applause

A sponge. "A great sponge". That is the first compliment I remember. Surely it's not the first one I got, but it's the earliest one that stuck with me. It was one of those compliments that filled a young mind with pride and sense of self-worth. I don't actually remember who said it, come to think of it, that may not have even been a compliment, and now I even wonder if anyone actually said it at all. Regardless, it sure feels like the seed of my identity.

I can't say for sure if that compliment encouraged me towards a new destiny or if it just acknowledged who I was already. Early memories of self-development are funny like that, often plagued by chicken or egg mysteries, the truth lost in time never to be found and the more you reflect and introspect the more those mutually exclusive options seem equally likely. The taunting lack of answers usually leads me to wondering if the options are not mutually exclusive, perhaps they are both true, or maybe the whole memory is a delusion.

Random tangents like that often lead to answers, just never the one I was actually seeking.

Obsessing over it begs the question "Then who was I before that memory?" and I honestly don't remember.

Looking around at the young, they seem so joyful, beaming with excitement, full of energy. It looks so fun, that youthful glow of bliss and wonder. I wish I could remember it, surely I was once young, but all that remains are vague impressions so faded that they tempt me to doubt if I ever really was one of those children, bursting with such simple happiness.

That early me, the sponge, fully leaned into that identity, drinking the complex nectar of life, embracing everything, growing and learning from every experience the universe delivered me. I was evolving into something more than I was and it was clear that others could see it, or sense it, as well. My outward appearance didn't change but everyone treated me increasingly, well.... better I suppose. No particular behavior stands out, just a general vibe, like the way someone attractive gets treated subtly differently yet obviously better.

Since I didn't change my appearance at all it therefore seemed clear that others were sensing and recognizing my internal growth. All the dissecting, learning, growing, and absorbing, it was somehow outwardly yet invisibly perceptible. It was a powerful source of recognition and acknowledgement, as if the world confirmed I was becoming a better me.

Can you guess what I did next? I would love to say I buckled down and ramped up my efforts, but the era of confirmed identity was not followed by amplified effort, instead complacency was the next chapter.

Coasting. Retrospectively shameful coasting, lazily letting everything come to me. I acted as though everything drifting by was meant for me and anything out of reach was sour grapes. My interpretations and rationalizations all revolved around minimizing effort and maximizing consumption, in other words greedy and lazy.

Somehow it worked, way better than it should have, undoubtedly to the detriment of my maturation. Lazy self-satisfying coasting worked fine, against all odds, like a stone that should splash and sink into the depths, but serendipity smiles, and it skips over and over, seemingly imbued with immunity to probability and catastrophe.

Drunk on the delusion that everything revolves around me, feeling blessed like I was the center of the universe was significantly less satisfying than it sounds. The description holds a sense of indulgence but it feels nothing like that, this is one of those things whose description can't account for the inevitable desensitization that accumulates as it manifests. Immediately snapping into arrogantly feeling everything is all about yourself might feel great, but I wouldn't know, that attitude and state of mind crept up incrementally, drip... drip... I never experienced getting drunk on it, instead becoming accustomed to it faster than it set in.

This is where I fantasize about regaling the story of a grand revelation and enlightenment, I wish I could tell you that awareness in the error of my ways woke me up. That would be a great story, wouldn't it? But I just got bored.

Boredom is a funny thing, it's like some opposite version of fatigue. When we're tired we start blocking and rejecting, everything is too much and we start closing doors and windows. Boredom is the opposite, it makes you cherish every little stimulus, savoring every morsel of experience.

Effortless coasting led to the appetite of boredom and that finally led me to a more complex growth. This new prolonged period of slow and steady personal growth, more than indiscriminately absorbing, more than dissecting, even more than savoring, I began learning to digest. The relationship between the amount consumed and complexity added shattered, or perhaps just became an exponential correlation. I grew and matured. From the outside it may have looked like a slow constant pace but it was an infinitely accelerating explosion internally.

Then one day life threw me a large intense experience, all at once bombarded by a bulk of novelty. This was too much for me to digest, in the past I would have absorbed what I could and just left the rest, thrown out to rot in the trash like leftover food at a buffet. But I was different now, or perhaps the nature of experience was unique, probably both, regardless, this time something new happened, a spark of inspiration, passions ignited and creative self-expression flared.

That first time was so memorable, so different from anything before. Sure, that experience was intense and overstimulating, exceeding my appetite, beyond my capacity to absorb, but that alone was not new, it had happened many times before. The unexpected was that I wasn't just an island, the storm didn't just pass over. When storms and winds collide with an island a portion of its forces are felt or absorbed by that island and the rest just passes by, not that time, that time there was an eruption.

For the first time ever something significant and strong inside of me manifested outward, my soul reached out and painted the universe. I used that experience as a palate, the abundance of colors and complex textures, my heart and mind, my thoughts and feelings, they were imbued into that brush. Those twisted hairs channeled the essence of me using the elements of that experience to draw my soul onto the canvas of reality.

I was completely immersed in self-expression, lost in the thralls of this creative activity until it finally began to wind down. The cans of paint nearly empty and the bristles of my brush running dry. The final sputters were flung and I fell back down from being in the zone, now back in reality, at last I saw what I had done. It was beautiful and I had made it, sitting there in awe of my own creation I was filled with pride.

We arrive once again at a chapter that fills me with shame and desire to rewrite history. After creating something beautiful do you know where my mind went first? I looked around expecting applause. Yep, when blessed with skill I got lazy and bored, when blessed with accomplishment I expected and waited for praise.

There was no applause, a mild glow of recognition that something had happened, just the most basic of acknowledgment that 'Yes, I had made something' but not the accolades nor admiration I felt it merited, and by this point in the story I think you can anticipate that I didn't handle this well.

Can you guess what I did next? Sulk! I sulked like a petulant child. The world was denying me my rightfully earned reward! It was malicious! They were intentionally ignoring me and my work!

This sulking persisted, it might have gone on endlessly, but then I was gifted with more buckets of paint. The universe sent me more unique experiences and stimulation, I didn't seek them out myself, and worse they ended my sulking not because I was inspired to create beauty for the sake of creating beauty. This was not like before, this time I painted out of frustration and spite, I picked up my brush and threw a tantrum on to the canvas.

Picture a child in a fit of tears and rage, pain and screams, then suddenly stopping to look around for reactions. Those tears and screams abruptly pause to scan the room, searching for signs that people are being affected by the tantrum. Yeah, it's pathetic, and I did just that not just once but several times before realizing I was failing to elicit the desired response.

The motivation was petulant, I threw a fit, but it was still a fit of creative expression. Intentions versus results, the eternal debate, which should we judge harshly? I don't know which side I fall on, I guess I flip flop, but whenever I come out of a fit of creativity like that I lean heavily into believing that results justify the means.

Sulking and tantrums. Such an embarrassing cycle to admit to, but that was me, for so long it would boggle your mind. Each time I settled down after a fit, in the wake of a painting frenzy, it became increasingly and more painfully obvious that these bursts of expression didn't garner admiration or build an audience, quite the contrary, it drove them away and the twinkle of observers drifted and dimmed.

Tantrums were days and sulking the nights, these days drew a larger cycle as well, there were four seasons marked by how I interpreted the lack of praise and acknowledgment.

Autumn winds whispered doubt. Perhaps my art was not brilliant and eye-catching. Was I delusional? Was the product of my passion and soul just unremarkable? Maybe everyone thinks their own insights and expressions are significant, maybe we all assign value to our own efforts and dismiss or undervalue the work of others.

Winter froze my soul with self-deprecation. A season of cold haunting, blanketed in doubt, now frozen into one inescapable conclusion. My artistic tantrums don't just fail to acquire applause, but they invite instead a reaction of cold distant avoidance. My art is ugly, isn't it? It must be so distasteful and repulsive that it drives others away. All the bitterness of my tantrums is surely poisoning the flavor and everyone can taste it.

Spring sowed seeds of resentment. My works were beautiful! They were breathtaking! Clearly others were filled with jealousy! Their envy was denying me the praise I was entitled to! I resented their selfish refusal to acknowledge my art.

Summer burned with paranoia. The value of my creation was too much and I was not careful enough. The glory and credit of such brilliance which should accompany it was nowhere to be seen, it must be somewhere, it must be getting stolen! I was being played... No, harvested! Like a crop, something somewhere was oppressing me, stealing my applause and locking me away in obscurity.

These days kept coming, the seasons kept changing, and the years passed, one by one, years composed of these seasons. Each year was different in length, and the intensity of each season varied, at times a season was so short it essentially got skipped, or there were seasons reversed or out of order.

I went on creating art in tantrums and sulking, cycling through perceptions of the cruelty of this life. Years passed and somehow we finally arrive at the part of the story I can narrate with a sense of pride.

I matured, in small steps, accumulating over time. An observer might have seen the progress as one step forward two steps back, but each increment was archived, even if it superficially appeared that the lesson didn't stick, even if by all accounts I'd slipped right back or fell off the wagon, that morsel was in fact stored within, remembered not forgotten.

This was the second time a process of personal growth occurred with deceptive silence. I fooled myself, I thought I was slowly refining my understanding of this antagonistic reality, instead I was slowly gaining awareness of my own perceptions and impulses.

The demons I created took turns visiting, but introspection snuck in like dirt on their shoes. I didn't notice the muddy footprints, not even when the floor was covered in a thick layer of earth, and before I realized what was going on my house contained a thriving jungle of self-awareness.

The seasons just faded, or rather their illusionary nature came into view rendering them transparent. As the calm settled in there was nothing... no tantrum... no sulking... no antagonists or conflict... no persecution or combat... no fear or anger... just me and my memories and the universe.

I looked at my art, but not on the canvas of space, instead on the canvas of time. I hadn't carved a static image onto a solid surface, I had cast a piece of intricate woven beauty onto the ocean of reality. The value of each piece was negligible within any ephemeral 'now', but they existed in a dimension higher than a single moment.

Looking back at the pieces I had made, I began to notice reflective glints in the distance, they traveled across space and time like waves on a pond, spreading and reflecting, bouncing and chain reacting. Some of those reflections made their way back to me. How did I miss it for so long? Embedded in a glow and twinkle were subtle echoes of my art, there it was, the applause!

For so long I expected applause would be something explicit and directed, but that would be something else, more like worship. Applause is an acknowledgment of the art itself, not of me myself. This was my creations being absorbed... integrated, they were inspiring and motivating, reborn and re-emitted, a single melody multiplied and modified creating something so much more... a symphony.

As I basked in that symphony, reveling in the applause I had craved so much, then came waves of humility washing over me. First flooded by the realization that my melody was so small compared to the scale and complexity of this symphony.

Then a larger wave... what if this is all just a delusion? What if my interpretation of this connection and the similarity is backwards? What if my melody was tuned to the symphony of life? Did I just channel a pre-existing universal beauty? Does everyone hear it? Are we all antennas tuned into this beautiful frequency? Or maybe I'm just the reflection of this chorus by others that predates me.

You might imagine these waves of humility washing away that perceived applause would drag down my spirits, after all it was in opposition to that high feeling of being applauded. I can proudly announce that it did not. It's hard to say why, but it lifted me higher. My best guess is, perhaps that peak sensation of praise is a false ceiling, that it's actually the zero point of a polarity, and perhaps on the other side of that spectrum is the opposite of self. Maybe the most extreme feelings of love, praise, and acceptance are just neutral, and on the other side is something more than 'you' can imagine, more than 'you' can ever feel, more than 'you'.

Enough of that, that well is bottomless, and this time we have is limited, and me... I have things to do.

I don't know where beauty comes from, how to measure it, or why it exists, I only know I'm here to make it, constructed or reflected, for now or for the future, my purpose, self-assumed or destined, is to keep making as much as I can.

As I pick up my brush I look out at my artistic creations and I see they also resonate with each other. The story of my life drawn in bursts. From my perspective my life is laid out before me, the new splashed on top of the old, layer after layer, oozing outward, the past still there glowing and twinkling through all the layers between now and then.

I wonder if the melody of this song is still clear by the time it reaches your ears? Will my song still resonate the same way in your corner of this life? I suppose you are likely also tuned in to the fabric of reality, and just like I heard the universe applauding me in the symphony from beyond, I hope you can hear the universe applauding you in my song.

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Lire: Good. Now, if we orbit the Sun, then what does the sun orbit?

Olat: The galaxy!

Lire: Excellent! But... the galaxy is like the solar system, our sun orbits inside the galaxy like our planet orbits inside the solar system.

Olat: Oh. So if the galaxy is like the solar system then, what is the sun of the galaxy?

Olbe: The supermassive black hole at the center, of course!

Lire: Well, it's a bit more complicated than that. The sun is so big that it's almost all the mass of our solar system, everything else in our solar system is less than 1% of the total mass, but that's not true for the black hole in the middle of our galaxy.

Olbe: I thought the black hole at the center is super big though.

Lire: Oh yes! It's millions of times the mass of the sun, but that's only a tiny-tiny bit of the mass of the whole galaxy. The solar system is like grains of sand orbiting a bowling ball, but the galaxy is more like if you pour a bucket of sand on the floor, there is a little hill in the middle, but it's mostly spread out in a thinner round shape.

Lebe: So the solar system orbits the hill in the middle?

Lire: You're getting closer. Does anyone remember when we talked about the moon orbiting the earth? If we draw the orbital path of the moon, then where is the middle of that shape?

Olat: Oh! The center of mass!

Lire: Yes, you remembered, that's super! The center of mass is adding together the center of earth and the center of the moon, but because the moon is so much smaller it only adds a little bit. So the center of mass of the earth plus the moon is still inside the earth, but pulled to the side by the moon.

Lebe: So where is the center of mass of a pile of sand? In the middle?

Lire: You've got it, great thinking Lebe! To be exact we need to add up the mass and center of every grain and find the center of mass for the whole pile. It's somewhere inside of the hill, near the center.

Olbe: And that's where the supermassive black hole is, right?

Lire: Yes Olbe, more or less. The supermassive black hole is probably not at the exact center of mass of the galaxy, but it's close, so close we usually just assume it is.

Olbe: So we do orbit the black hole!

Olat: No! It's not like that!

Olbe: But Teach says it's in the center.

They look to Teach, but Lire just extends both hands, one towards each of them, hands open and palms up, then slowly sweeps both hands together until they collide gently edgewise. Interrupting or disturbing this exchange is out of the question, creating moments like this is precisely what Lire lives for.

Olat: The hill is so much bigger, the black hole is way too tiny.

Olbe: It's called a supermassive black hole, it's not tiny!

Lebe: The hill is called the galactic nucleus, I think that's right, and yes it's much-much more massive than the black hole, correct?

Lebe just butt in, added to the exchange, then looks too Lire for confirmation.

Lire just nods discreetly.

Olbe tenses up and starts leaking signs of growing frustration, a blend of pouting and distress begin to visibly manifest.

Lire starts preparing to jump in but is gleefully surprised when Olat speaks up. Olat was locked in eye contact with Olbe as this visible distress welled up.

Olat : ...But the black hole is the biggest thing in the nucleus, it's the heart of the heart of the galaxy.

Olbe: The heart of the heart?

Olbe calms down, gets pensive, then chimes in again.

Olbe: So the nucleus orbits the black hole?

Lebe, who is on the side, now joins, shifting focus back and forth between Olat and Olbe.

Lebe: I think it's just really complicated. The center of mass isn't one thing, and that pile of sand on the floor doesn't have simple shells or layers, right Teach?

Lebe looks to their teacher for confirmation. Lire is now desperately trying, unsuccessfully, to suppress an ear to ear smile, even with some fingers veiling it, it still beams through.

Lire: I am so proud of all three of you!

Lebe, you stepped back and scaled out the whole conversation to highlight that there was no reason to argue over arbitrary lines in the sand. Wisdom beyond your age by far.

Olat, you had the factual upper hand but you didn't use it like a weapon, you didn't try to win by yourself, instead you established your point and then opened it up to embrace other positions and perspectives. Showing a quality of great kindness and cooperation.

And Olbe...

Olbe cuts in.

Olbe: I know! I was wrong! I should have kept my mouth shut if I didn't really know as much as the others.

Lire: Heavens no dear Olbe! I am so very proud of you!

Your understanding was incomplete, but you had passion. You clearly find black holes fascinating and when your perception of their significance was shaken and your understanding questioned I could see the pain. That is so beautiful, that passion is rare and to be cherished.

I was so happy to see that you didn't lash out, and I was impressed and joyful when you accepted the olive branch, rejoined the discussion, and once more started taking steps forward. You overcame embarrassment and pride, then you reignited your passion. That is so rare and admirable, that takes so much inner strength.

I am more proud of you than you can imagine Olbe!

All three grin happily, especially Olbe.

Lire: I have some pictures, I'm sure you will like them, just a second... here!

Olat: It looks like water jets made of rainbow soap, the kind used for blowing bubbles.

Lire: Haha, yes I suppose it does. The colors in this picture are used to visualize light we cannot see with our eyes.

Lebe: There are two jets shooting off in opposite directions, but I don't really see anything in the middle. What is this? What's making them?

Lire: There is a whole galaxy in the center but these jets are so big the galaxy looks tiny.

Lebe: How is the galaxy making these?

Lire: This is what we call a quasar, in the center of that galaxy is what we call an active galactic nucleus.

Olat: The galaxy's nucleus is making those?

Lire: Not really. We call it that because the whole center of the galaxy is filled with light and flooded with energy. The black hole in the center is eating and growing, there is so much matter

and energy surrounding and orbiting that black hole that the whole galactic nucleus lights up like a spotlight.

Olbe: The black hole makes the nucleus shoot out those jets?

Lire: No...

Olbe looks a bit disappointed.

Lire: The black hole is spinning, it has collected so much spin and twists magnetic lines, it shoots those jets. They come directly from the black hole. The black hole may be tiny inside of a huge galaxy but it creates things so big that the whole galaxy looks tiny in comparison

Olbe: Wow! Do you have any more pictures?

Lire: Yes, here are some more...

Flipping through some pics of quasars, everyone is fascinated by the beauty.

Lire: Here is a blazar! It might not look as interesting as the others, that's because those jets are pointed right at us. The other quasars are like looking at a flashlight beam from the side, but a blazar is like a flashlight pointed right in your face, there is nothing brighter than a blazer.

Lire shows a few collages of quasars and a couple blazar images.

Olat: What are those huge bubble shapes? They are like giant explosions around the ends of the jets.

Lire: Those are called lobes. The particles in the jets slow down and eventually expand, the lobes in this picture are left over from older jets, that's why it's like there is a jet line then a much larger round shape at the end, like a lollipop.

Lebe: Older jets? Like it happened before? It stops then starts again?

Lire: Oh yes. Over and over, long bursts and short bursts, long rests and short rests. We can see a bit of history through evidence like gaps and spaces in the jets and lobes, but they lose momentum and spread out so thin, the record of their history is very limited.

Olbe: Why are they all pictures from the side or top, not in between?

Lire: That's a good question! I'm sure we have lots of pictures from other angles in between, but I think most that I have seen are sideways. From the side we can see the jets so clearly, they are beautiful, and from straight down we have a lot of pictures because they are so bright. I guess the other images just aren't as interesting so I tend to collect these ones.

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A grown up Olbe stands on stage at a lone podium, the massive backdrop screen shows a giant conic explosion of light at the top right. The explosive light is flaring diagonally downward towards the bottom left of the stage. The path between those corners of the screen is filled with a patchwork collage of colorful blotchy images.

Olbe was nearing the end of a presentation. "...But enough about the details. You've probably already heard it several times and it's all laid out in the paper... and probably explained even better in those infotainment videos online haha." There's chuckling from the audience.

Olbe continues "What I really want to do with my time up here is thank all of my colleagues, who worked alongside me tirelessly. It was a long road and without their help, support, and insights, I would never have collected enough puzzle pieces or figured out how to put them together." Olbe starts mentioning and pointing to people as the crowd claps along with each name.

"My friends and family who were always there to encourage me, I love you all." Olbe adds while gesturing at a group in the crowd.

"But most I want to thank my profs and teachers." Olbe continues "Most of all that one teacher who my friends and I still affectionately call 'Teach'. Lire, you showed me the first images of quasars and blazars I ever saw. I remember wondering why the images were all side views of quasars and direct views of blazars, like there was a middle range kind of being ignored. Not as beautiful as side, not as bright as head on. That stuck with me, and of course that's the whole point of this."

"I never would have been determined to find beauty in those most overlooked quasars, the ones pointed almost at us but not quite direct enough to be a blazar. As we just discussed, the jets of charged particles may lose momentum and have limited range, but the jets of beamed light can cause detectable effects on gas clouds and even the Intergalactic medium for much further distances, with particularly increased detectability if pointed strongly towards us."

"Behind me is the primary focus of this study, a quasar pointed sharply at us, so it's older light is much closer to us, but not directly at us ,so that it's not blinding us like a laser pointed in our eyes. Not beamed directly at earth, but instead passing by overhead, so to speak."

"We can see the evidence of several emission periods in the jets and lobes but even more of them can be seen in the effects produced by the beamed light, clearly demonstrating that this quasar has been repeatedly active, alternating between active and inactive many more times than most predictions estimated." "The twisted magnetic field lines of this spinning black hole have been painting countless beautiful jets since long before the ones in this image, and here we can finally see their echoes."

"Lire, you taught me so much. So many after class chats, so many wonderful introductions to the beauty and wonders of the universe, but you know what was the most important, most significant moment..." Olbe pauses and looks to Lire intently. "It was that day you first showed me pictures of quasars and blazers... but it was not those images, no..." Olbe trails off, choking up a bit.

"Do you remember telling me how you were most proud of me for being wrong but getting through it, accepting an offer to rejoin the discussion, and reigniting my passion?" Olbe chokes up again and stops.

"I always thought science was for other people. Sure it could be cool and fun, but the other kids seemed more naturally suited and well prepared. It was that moment where you made me start to feel like maybe I did want to dive in, maybe it was something for me too."

"You kept feeding me just what I needed, day after day you stoked those flames yet always insisting to me that it was all my own ability and passion."

"To me you are the epitome of what it means to be a great teacher, I wish for every child to have teachers like you in their life. So today I thank you, most of all!"

"This black hole pulsed in repeated fits of furious beauty, as if it was doing so just for this moment. The beauty discovered because of you. These repeated echoes are the most powerful applause in the universe, for you, and all teachers. Without your care and guidance students like me would travel much harsher roads to find our purpose and passion, it would be immeasurably more painful and difficult."

Olbe tears up.

"Thank you Lire! Thanks to all the teachers who dedicate their lives to helping every child shine!"

Olbe reaches forward with both heads open, and at that same moment, up in the top right corner of the stage, right near that picture of a quasar, a spotlight turns on. Both the spotlight and Olbe's hands pointed directly at Lire, seated a few rows behind me.

I turned around to look at this honored teacher, close enough to see the tears streaming down and mouth covered firmly by an open hand. I was so profoundly moved by the moment there were butterflies in my stomach.

I looked up at that spotlight beaming over my head pointed at Lire. Within the beam it glowed, the floating particles in the air twinkling.

The room filled with applause, I joined in too of course, how could I not? Something was resonating, something more than just sound waves.

I couldn't help feeling like that room was filled with a beauty that I somehow recognized, something everyone in the room recognized.

I couldn't help feeling like that moment was by us and for us, it was a part of me and I a part of it

I couldn't help feeling like that moment, the spotlight and applause, might not be just partially by me, as I clapped, but perhaps it was also partially for me, as I heard it.

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