OUTER REACHES OF THE PALINDROME

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This work is an exploration into the palindrome, both as a literary form and an

expression of infinity. The first two chapters address the fascinating manner in which the

mind contextualizes fragments of speech and ludicrous grammatical implications that are

spawned by the poetic structure of the palindrome (third chapter). The thesis then departs

from the literary aspect of the palindrome and focuses in the fourth chapter on structural

likenesses in psychology and mythology. The fifth chapter argues the palindrome and

parallel conceptual structures as examples of recursion, then presents examples of

recursion in language/grammar, art, and computer science. The sixth chapter uses

instances of the recursive equiangular spiral throughout nature to introduce recursion and

therefore the palindrome as an archetypal expression of infinity. The thesis ends with a

list of the author's palindromes.

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<center>EPILOGUE:</center>

Cruising at full speed, about 60 mph, safely under the limit, the blue van, lightly rattling, ushered us into Dallas. I remembered something in the glovebox - a picture - that I'd intended to show Spectre.

"Yo, man," I said. He held a dusty baggie in one hand and was sniffing his knife.

"Hmmpt," he grunted, pressing a finger over his nostril. I completely lost my train of thought: Knife. Glove. Van. Alley. Show. Girlfriend. Movie. Salt. Picture. Yellow. Parting. Fireworks. Finger. Polka. Death. A crib. Grandfather. Smoke. Sniffing. Wife. Four-wheel dolly. I taste the meth draining down my throat, like crawling ooze, into my stomach. Love rhymes with gloves – warmth. Forever. Ornaments. Hands. Speed. Freckles. Sneezing. Fear. Nose. Cars. Babies. Cold. Ghosts. Ex-wife. Lungs. New Year's Eve. Driving. Spectre. Remember something. What? What?

"What," asked Spectre, looking at me. The blue van's interior and the blur of images in front of the city buildings and night sky moving in the passenger's side window behind him fell into place around his shoulders and head. His dark goatee looked like leather straps muzzling his mouth. I looked back to the road and swerved back into my own lane.

"What were you gonna say, dog," he asked. I became aware of my surroundings. The thing that I had reminded myself to remember got lost in the confusion of everything else. "Go, dog," he prompted, pronouncing the sounds of an alphabetical palindrome sequence. That was all it took. We were instantly in palindrome mode.

"Bore Rob," I asked.

"No, Don," he responded.

<center>1</center>

"Huh?"

"Bore Dave; Evade Rob."

"Evade Dave?"

"No, son."

"Huh?"

"Evade Rob; Bore Dave!"

We were in its clutches. Palindromes are sequences of letters forming a grammatical word/phrase/sentence that can be conceived forwards in the same manner as backwards, like "dad", "racecar", "level", and "civic". Spectre and I shared a common disease. We both revered our obsessions with palindromes. The affliction hooked us years ago when we worked at the coffeehouse. While sitting on stools at the high table near the video games where on-duty and off-duty employees traditionally gravitated, we started discussing patterns. Spectre is like that, a real connoisseur of patterns and puzzles. Untampered by the classroom, he practiced hedonism with a vigor that only the lost, lonely, or mad could muster, and to occupy idle breathing time, he filled his notebooks with created symbols of his created language that he planned to teach to a wife and children someday.

We sat there talking about patterns, and I brought up palindromes. A linguistics teacher of mine talked about them one time during class, and I thought the concept sounded pretty cool, pretty surreal and weird, but I never really gave it much more thought until that day in the coffee house when the magic was born.

"So, I wonder if the word 'penis' can be made into a palindrome," I'd said.

"Well, if you spell that backwards, you get 'S-I-N-E-P'," said Spectre.

"You can say, 'penis sin,' but then there's the E-P left over," I added, writing the letters on a piece of paper.

"Or you can say 'inept penis,' but then you gotta add an 's' to the beginning to balance it out, right?"

"I think so," I said, adding an "s" to the deficient side for balance. "Now we need something that ends in 's' – like a verb or something, because the inept penis has to come after the word we need." By this time, both of us were writing feverishly, trying to sort out the words we had so far into something complete, something satisfying.

"We could use 'is', you know, 'is inept penis I'," Spectre said.

"I don't know, that sounds kinda …"

"No, 'has.' 'Has inept penis A-H.' What words begin with 'a-h'? 'Ahead'? No. 'Ahem'? Not really."

"And who or what has inept penis? We can always figure in a name like 'Bob'. We can put it in, but it has to be on both sides," I said. "Like, 'Bob's inept penis Bob,' but that's kinda lame."

"Wait," said Spectre. "Ah, Bob."

"Ah, Bob?"

"Ah, Bob," he said. "Bob has inept penis. Ah, Bob."

"Bob has inept penis; ah, Bob?!"

"Bob has inept penis. Ah, Bob," we yelled in unison, drawing a few confused looks from some customers. Our pupils were dilated and we were baring our teeth. Who is Bob? How is the sufficiency or ineptness of his penis relevant? Who's the speaker? What's his or her association with Bob? Is there a listener? What the Hell could "Ah, Bob" possibly mean? Once we began

placing the pieces, the palindrome practically claimed itself to life, enslaving our human brains to fabricate a context for it to live in, a scene, something that assumes a past and a future. We were addicted instantly.

So anyway, once we'd start palindroming, the theme was set, and we'd always manage the "Bore Dave, Evade Rob" routine. As we saw it, this palindrome acted as some type of advice pertinent to dealing with a situation involving one Rob and one Dave. The guy mistaking the information as "bore Rob" and "evade Dave" is named Don, so that the response "No, Don" is relevent and keeps in check with the palindromic lines of dialogue as does Don's response "Huh?"

What is the deal with Rob and Dave, and what do they intend for Don? And who is the giver of this advice? How has he familiarized himself with the suggestions he offers? As you can see, the trick isn't to finding a palindrome to use in a particular context; once the sequence makes any type of sense as words, phrases, or sentences, the inquisitive and analytical creative capacity inherent in the human brain bridges any gaps, fills in any blanks in search of context, the same way it creates meaning, invents its own answers just to get by.

This was our take on the dialogue:

A prison cell. A rookie named Don and a veteran. Don is flustered because two men, Dave and Rob, have made it clear to him that they will eventually rape him by force at some point in his prison term. But the Veteran – he's been around the block for quite some time, and he's well-versed in the finer points of survival. He knows Don and Rob well enough to know how both men operate, how they assault and respond.

So wearing the pitifully horrified and vulnerable face of a grown man confused, scared, driven to desperation, Don turns to the Vet for advice.

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"I can tell you, boy," says the Vet, who lies in bed, reading Poe. His eyes never shift from the pages when he speaks, nor, for that matter, has the Vet even so much as made eye contact with Don for the entire month since Don started serving hard time. "You follow my advice, and you'll most likely skate free of both them boys. I mean, Hell, you say you only got five months left. But you gotta be smart and alert, you can't be the stupid-ass your mama shit out and raised." The Vet turns a page and clears his throat. "However, boy, the advice – the formula, so to speak – I give you will cost. The veins of capitalism run strong through these bars and concrete. You'll have to suck me off, bitch." The Vet lowers his book and drills his grey eyes through Don's. Don closes his mouth and looks away from the Vet's menacing stare.

"Naw, man," says Don. "I ain't homo, I just ain't like that." The Vet begins reading again. There's an awkward stillness in the air, and Don paces. The voices of other prisoners and sounds of entropy hiss white noise through the corridors and into the cell. Sounds of many feet on the floors. Sounds of cards and dominoes. An orchestra of voices, dialogues, monologues. Rob and Dave bellowing like goats for Don's anus. "Pretty White Girl" – that's the name they call him, the name they bellow while he paces. Don shudders and wishes there was a window he could climb out of and be rid of his current situation, his thickening dilemma.

"My cum will taste a lot better than those big old black VD cankered dicks will feel tearing into your ass, Pretty White Girl," says the Vet, snickering afterward. He's a large man, kind of fat around the middle, but his hands and jaw are strong, so he can carry the weight. His shiny bald cranium crowning his thick, pocked face and neck make his head look like an exaggerated foam peanut. Thick glasses magnifiy his eyes to fit the

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circumference of the lenses perfectly. He has liverspots on his skin. "Either way, you might as well kiss your pride goodbye."

"Alright, man, FUCK," says Don, frantic. He's crying. "God, please just help me."

The Vet doesn't so much as acknowledge Don. He just keeps reading, on his back, his head propped 30 degrees by a pillow, the book held to his face by his broad hands, his foot tapping. His left foot always taps. Always. That was something Don noticed immediately when he arrived at the cell, when he tried to communicate with the Vet countless times, but the Vet ignored him like he wasn't there. His foot never lost the beat. It tapped while he slept. It tapped when he was awake. When he walked, he would stride in accordance to the same rhythm.

For the first two weeks, it was more so the Vet's tapping foot that damn near drove Don to the brink of madness than the silence and the isolation. But after awhile, after proving itself as something reliable and stable in a world of gambles and blind trades, the Vet's tapping foot somehow was becoming the only thing keeping Don sane, something Don could pray to. The Vet finally breaks his silence and puts the book down, swings his legs over the side of his cot and places his feet flat against the cell floor, the left one tapping.

"Alright, then," says the Vet, clasping his hands. "Now we're getting somewhere, Pretty White Girl."

"Don't call me that!" The Vet rises to his feet and lands a punch into Don's chest, hurling the poor rookie back-first into the wall. Don melts down the wall into his bed and fights to catch his breath.

"You don't tell me, I tell you," the Vet growls through his tight lips. "You don't know shit. I should've claimed your tight little ass on the first night." The Vet towers over Don, eclipsing Don's folded body with his shadow. Don turns an eye upward at the Vet.

The Vet is a tough man of few words. Repeated counts of indecent exposure landed him in prison for a year. Halfway through his term, a group of prisoners surrounded him for a very lopsided game of guard the glory. That's what they yelled at him – "guard the glory" – as they beat and raped him. The Vet got broken up so bad he had to stay in the infirmary for three months, and nobody, including him, said a word, even when he was able to talk normally again.

When he was strong enough to sit up, he started reading. He began meditating. He stopped responding to nurses. He wouldn't answer questions about what happened. He healed himself for vengeance. And when the day came that he was healthy and strong enough to go back to his cell, during lunch, he killed two of his assailants. He spotted all of them in a group in the cafeteria; they laughed when he walked in. They laughed as he was passing them carrying his tray. Their backs were to him, and the Vet let go of his tray and attacked the nearest one, grabbing him around the head and twisting his neck broken. Someone else jumped on the Vet, and they wrestled to the ground, where the larger Vet had the advantage by about sixty pounds. He used his weight to pin his opponent, whose free hands punched and clawed at the Vet's face. Other's joined in. From beginning to end, the entire assault took about as much time as it takes to watch a falling star or experience déjà vu. A group of guards converged immediately and broke up the small riot. The Vet was bloody and unconscious, and in his hands he held his second attacker's head, fingers wrapped around the skull and thumbs buried deeply in eye-socket mush. On

that day, one man returned to the infirmary hours after being released, and two men went to the morgue.

After having served sixteen years of a twenty-five year murder sentence, the middle aged Vet stands over Don, throwing fake blows at him and making him flinch. The rookie trembles with fear. Good instinct on his part.

"What's your name, boy?"

"D-d-d-d-don." Wide left hand slaps Don across the ear and cheek.

"Not in here it isn't, my new little bitch," says the Vet. "I'll call you Don if I want to because it's shorter, and I'm the one who brings home the bacon, if you get my drift, but so help me God and Satan, if I hear you refer to yourself as anything other than "pretty white girl", I'll permanently scar and cripple you – I've fucking got nothing to lose. What's your fucking name, bitch?"

"Pretty white girl," says Don, lowering his head.

"Good. Look me in the eye, boy," says the Vet. Don raises his head; his heart is racing. "Good. Now, tell me you want a glass of water."

"I want a …" Big right fist jabs Don in the mouth.

"Aw, shit," says the Vet, and with his fingers, he caresses Don's mouth. "I gotta keep this part pretty and smooth. Now say you want a glass of water the way I allow you to say it."

"Pretty white, uh, girl wants a glass of water."

"Tell me you think I'm sexy."

"Pretty white girl thinks you're sexy." Don's face is pale and blotched with the redness of violence. The Vet nods.

"Very good. You're a quick learner." The Vet starts massaging his genitals, getting them warmed up like an engine on a cold morning. "Now, as far as this Rob and Dave scenario goes, they won't go near you if I'm around cause they'll know that you're mine, but if they catch you alone somewhere, hell, you're fair game and easy prey." The Vet sits down on his bed. A broken-spirited Don listens silently.

"Dave's been in here for a few years now, and he's one for the excitement of the hunt. Seeing your fear fuels his hunger. So take that excitement away from him; he'll probably lose interest if you're apathetic about his threats and taunts. That's just the way he is, son." The Vet takes a deep breath. Don hangs on to the word "son", repulsed by the disgusting ogre's paternal implication.

"Now Rob's a different story altogether. Rob's about as tough as beef gristle; when he sets his mind to something, he means business. I've been here a while, boy, and I've seen Rob at his best and worst. If you don't listen to anything else, heed my advice and stay the fuck away from Rob. He's a lifer; he'll die in this place. He doesn't really care one way or the other." The Vet continues to massage his testicles, and he grins. "Tell me you're qualified to receive my wisdom."

"I'm, uh …" Tightly balled left fist punches Don in the stomach so hard he dry-heaves and spits bile on his blanket.

"I'll give you one more chance to tell me you're qualified to receive my wisdom, Don."

"Pretty white girl is qualified to receive your wisdom," wheezes Don.

"Bore Dave; evade Rob."

"Bore Rob?" Don asks.

"No, Don."

"Huh?" Don asks in confusion.

"Evade Rob; Bore Dave!"

"Evade Dave?"

"No, son," snaps the Vet.

"Huh?"

Like I say, that whole tangent only represents Spectre's and my take on the above dialogue. An infinite number of possibilities exist for what the Hell it could mean, what the Hell kind of situation those palindromes might occur in.

THE SORCERY OF CONTEXT

Hello everyone; my name is Michael, and I am a palindromist.

Hi, Michael.

I wrote my first one in 1998. Five years later, I still write them on a daily basis. I read everything backwards – just to see if I can glimpse a new palindrome. Words will not leave me alone, and often times, (I confess) I write them when I should be paying attention in class – as a student **and** as a teacher. They chase me through my nightmares. They spiral into my brain like a giant corkscrew. I am absolutely helpless. If I were to try and quell them, they would rise forth and crush me. They fascinate me … they torture me … they touch my imagination in uncomfortable places … it's a tough love.

A big part of that love is my personal need to understand palindromes. There's some type of magical feeling contained in the writing and in the interpreting of a palindrome, and that feeling cannot be described in binary terms, so I am avoiding writing an essay that purports to prove something. Instinct cannot be proven, aesthetic appeal cannot be proven, intuition cannot be proven – these are the three principles that I refer to whenever in my life I speak of "my education" or "what I know." All I can do is explore the nature of the palindrome and hope to glimpse its underlying sorcery.

There are countless one-word palindromes in the English language, many of them common, such as "Mom", "Dad", "poop", "boob", "sees", "racecar", "level", and "rotor", as well as the names "Bob", "Otto", "Ava", and "Hannah". At their most base level, one-word palindromes signify a concept, and the words themselves are palindromic more by coincidence than anything else; they sound perfectly natural when spoken. Slightly longer phrase palindromes, like "a red-eyed era" and "to prefer pot" are evasive as naturally uttered speech and

in fact probably have been spoken by many yet recognized by few to no listeners or speakers –

many phrase palindromes are as coincidental as one-word palindromes; however, the phrase-

palindrome is more complex than the word-palindrome because it boasts the dynamics of

grammar and therefore meaning. Sentence-length palindromes, such as "Bob has inept penis. Ah,

Bob" and "Pot rewards Otto's drawer-top", often bear more contrived and awkward instances of

language usage, a complication that usually gives rise to surreal, almost ludicrous, contexts.

Take for example the following palindrome:

"Relapse, he pondered. "No plasma, yet a straw, Latin egret-sewer grew Ester genital

warts, ate yams," Al pondered. "Nope, he's paler."

One might read this palindrome and think it nonsense due to the unclear noun compound "egret-

sewer," preceded by seemingly unrelated modifiers "straw" and "Latin". This is a good

candidate for contrived word/phrase formation, because "a straw, Latin egret-sewer" doesn't

seem to make immediate sense, especially when the acts of growing genital warts upon one Ester

and eating yams are ascribed to the noun phrase in question; regardless, meaning will be sought

after; a palindrome (or any utterance or text bearing grammatical implication) invites the mind to

make sense of it, which the mind seems to instinctively attempt before dismissing the string of

word as utterly meaningless. In that search for meaning, images surface, and even though the

images seem distorted and outside of the realm of our normal thoughts, the images are still as

real as any image in the bank of memory – real as any experience, any dream, any story heard,

and television program watched, and music heard, any fantasy.

Whereas the above palindrome exhibits muddled phrasal and semantic elements, this

slightly longer one further illustrates examples of contrived language:

Dog-bard, a wall arose. Soon, a red, nude-man era stole Gail of deli, and, lo, my tit-net

carts bade, "Trap millions' parts", but a snag rose many fits, and I'd reward no cabs.

Even Eve's bacon drawer did nastify names, organs, a tub, straps. No ill-imparted,

abstract-entity mold nailed foliage. Lots are named under a noose's oral law – a drab god.

Again, the above example contains awkward sentences without clear meanings or contexts, but

being grammatical, the palindrome will extract meaning from the mind of the reader. Contrived

syntax comes in the form of "stole Gail of deli". Most people who speak modern American

English probably would not use such an archaic phrasing; instead, the most common way to say

it would be: stole Gail's deli. "Lo" is another archaic word that muddles the flow of the

palindrome's language; however, these examples of contrived sentence structure only lend to the

eloquence of their reversal: "No ill-imparted, abstract-entity m**ol**d na**iled foliage**. **Lots** are

named…". Sometimes, for a long palindrome to flow naturally on one side of its axis, the words

on the other side must bear the burden of forced grammar. To quote Ross Eckler, author of the

recreational wordplay book, <u>Making the Alphabet Dance</u>: "Most [long palindromes] read like the

ravings of a maniac. They make local sense, albeit with strained syntax, but have the

disconcerting habit of suddenly shifting the subject being discussed." [1]

Another interesting aspect of the above palindrome is the way it expands the boundaries

of language by using the uncommon word "nastify." The meaning of "nastify" is somewhat

obvious – to make nasty. Compare the morphological transformation from "beauty" to

"beautify", which means, "to make beautiful" (e.g. Warren will *beautify* the backyard by

planting flowers). In the most playful of speaking environments, any noun or adjective can be

supplemented with the suffix "-ify" to take on the formula: X + ify = "to make X-like". Even

strange-sounding words, like "legify," or "oil-upify" are acceptable to the elastic mind; granted,

we might have to *create* a scenario with a history that validates such a term, but still, that's what imaginations are paid to do. A good example of the stretchability of language is palindromist Lewis Carrol's poem, Jabberwocky, where many "Frankensteined" words tell a story, which, though hazy and without specifics, still leaves some type of image in the mind of the reader.

According to the aforementioned palindrome, "Even Eve's bacon drawer did nastify names, organs, a tub, straps." So Eve's bacon drawer made these four categories nasty; however, at this point, one might ask oneself, "what is a bacon drawer?" Here I will go out on the ever so shaky limb of contextual interpretation. First there is the obvious literal translation: a drawer that contains bacon. The mind can easily bridge the manner in which a bacon drawer might "nastify" tangible objects, like organs, a tub, and straps, but how can something concrete like a bacon drawer nastify something as intangible as a name? This is the point where the literal interpretation of "bacon drawer" might fall through thin ice. In the mind's obsessive egg-hunt for meaning, it may apply a more figurative meaning to "bacon drawer." Now, I interpret that "bacon drawer" could be used as another name for the vagina, hence, "Even Eve's bacon drawer did nastify names, organs, a tub, straps," makes more acceptable sense, at least in my own mind, because a vagina can be said to nastify names in the sense that the reputations behind the names become marred … and, of course, a vagina can physically nastify the concrete entities: organs (musical and/or biological), a tub, and straps. This all makes sense to me; I can imagine a depraved scene including Eve and whatever sordid things her bacon drawer did to nastify the seemingly normal (at least according to my interpretation of this context) sexual objects – organs, straps, a tub – which in turn "nastifies" the reputations of the involved names (people). At this point in the interpretive process, the palindrome has given way to neologism, an occurrence common in palindromy, where " … the limits of what might pass for acceptable

meaning are constantly being tested and stretched."[2] The interpreter of the palindrome not only walks away from the experience with freshly birthed new images but also with new word usages and meanings.

In my mind, a palindrome is an image and context generator, as if the austerity of the form itself creates a textual environment that catapults the human imagination into a place where it normally might not go via daydreaming. I see a palindrome, and though the sequential, reverse-order arrangement of the letters is perfectly symmetrical (thus making them qualify as a palindrome), and though the palindrome may be grammatical (even grammatical by extension), and though the implications of the words may incite a narrative or a meditation that the reader interprets as having some sense of resolution, despite all of these scenarios, upon reading a palindrome I am always left with a sense that any image or meaning I derive always alludes to a greater context. Image and context. These are the sorcery of not only palindromy, but of literature itself. If a picture says a thousand words, then a string of words paints a thousand pictures.

The nature of fragmentation is interesting, and palindromes can seem to induce the feel of contextually fragmented language. Take this scenario: Bob walks up to a group of friends; Big Ray is telling a story about an irritating dental procedure; Bob only hears the words, "… I know the whole thing only took forty-five minutes, but it felt like an eternity. I thought he'd never take that damn thing out of my mouth," and Bob responds out of context by saying, "Wow, Big Ray, I know you're having a tough time with the ladies lately, but don't give up so soon"; everybody laughs at Bob's homoerotic joke. Fragmentation is a powerful tool in humor; miscontextualizing fragmented speech helps the plot thicken – it develops misunderstandings that fuel tension and suspense. Just about every television situation comedy that has ever aired boasts at least one

episode (and this is a very miserly estimation on my part) where one character overhears part of a conversation and innocently dreams to life a dire situation, but at the last moment little Billy finds out that his parents really aren't going to sell him to the gypsies – they're taking the silly little goose to the circus for his birthday!

Of course, I'm venturing out on a limb and saying that this plot tactic is and always has been so widely utilized in literature, television, drama, and film because humans misunderstand each other all the time. Language, with all of its delightful ambiguities and homonyms, lends itself often to misinterpretation, and we humans, with our vast and complex brains and emotions, rely heavily on imagination. The power of a fragment is that it prompts, maybe even demands, the reader to contextualize it.

Palindromes induce a feeling of fragmentation upon the reader; the palindrome, like all other forms of literature, invites the reader to contextualize its text. Reading a palindrome, like reading any work of literature, is an interactive process between the text and the reader – the poem or the prose suggests, and the reader contextualizes. This is what qualifies a palindrome as literature. The fragmented mood often evoked by a palindrome comes, in my opinion, from two things: A). Even if a palindrome reads or sounds awkward, it describes the objective world, and no matter how absurd the content of the palindrome may seem, a reader will unconsciously bridge gaps in an attempt to derive meaning; we rely on our imagination when we read. B). Half of the palindrome comes from the author; the other half comes from something else: form.

A POETIC FORM

One of the greatest things about formal poetry is the attention that the authors must give to language in order to express themselves within the structure of the given form. A formal poem is one that the author shapes specifically to adhere to a specific stucture or structural element, for example, rhyme and meter schemes of sonnets, the chorusing of the six methodically rearranged end-words throughout the six sestets and one quatrain of the sestina, the chorusing lines of the villanelle. I offer a villanelle of my own as an example:

Cleanse

The small contorted cat licked its anus

for more than an hour last night

amidst our crowd. The cat entertained us

in a manner so twisted and heinous.

By the pale flicker of a white moon's light,

the small contorted cat licked its anus.

Yes, we laughed until such laughing drained us,

for scarcely before, dull boredom hung slight

amidst our crowd. The cat entertained us

because inability restrained us

from doing the same (imagine that sight.)

The small contorted cat licked its anus.

We watched enviously. Who could blame us

for only wanting something to feel right

amidst our crowd. How it entertained us

to think that way, anyhow. In my brain is

a memory of that enlightening night

the small contorted cat licked its anus

amidst our crowd. The act entertained us.

These challenging forms can force writers into the dilemma of being stuck between form and meaning, a situation where the form restricts the author from using a "better" choice of words or image. However way the poem ends up, whether the author abandons the form altogether, whether the author adheres to the form (whether or not the author feels that the intended meaning is being sacrificed for the sake of form), the author is still more present in the poem than the form is. Though the sonnet, the villanelle, and the sestina are very structurally demanding, the author has a liberal amount of freedom to choose sounds, syllables, words, lines. The human being is represented more than the structure.

Palindromes don't allow as much freedom for their authors as do other poetic forms, due to the nature of the sequence and the impotence of many words to accommodate the sequence. For example, "shift" – "tfihs" is an unintelligible alphabetical sequence in the English language (except for abbreviations). On the other hand, "space" can be reversed into "ecaps" – "… ____e caps …" When I am writing a palindrome, I can only expect as much meaning as the words I'm working with. Writing a non-palindrome is completely different – I write about my imagination.

When I'm writing to imagine, palindromes are the path I take. The palindromist realizes the image not beforehand, but rather, one letter at a time as the sequence and the author grow toward grammatical resolution.

All pun aside, the creative process for writing palindromes is the reverse of that for writing in traditional literary forms – at least for me. For me, a poem erupts out of meditation, prose comes from narratives I find myself telling over and over again, but the only image I have to go by when writing a palindrome pertains to the word or words that I begin with, and that image evolves literatim, or "letter by letter."[3] If I were to try and revise my villanelle into a palindrome, most likely, the majority of the poem's meaning would be lost. The palindrome boasts one of the most austere literary forms, a sequence of letters appearing in the same order both forward and back, and because of the rigid structure, most times the author, especially when dealing with palindromic sentences, paragraphs, et cetera, must surrender credit to the form, because the form and the author exist to check and balance each other. In most cases, any intended meaning on the author's part becomes so convoluted in order to satisfy the form that the restrictions of the form are as important to the literary work as is the author. This is where fragmentation comes in – a palindrome is a fragment: half human, half mathematical pattern

The madness of palindroming throws the author into forced dyslexia, in my case, to the point where I read every string of text backward, sometimes before I read it forward. My process begins when I find a word or string of words reveal a possible reversal pair – any two words, phrases, or other assemblages that spell each other backward[4] – either whole and perfect, such as "drab" and "bard", or incomplete, such as my previous example of "space". So, personally, I begin palindromes rather arbitrarily, but that's just me – some palindromists may begin the act of writing with specific themes in mind, but I'm more intrigued by the possible contexts that the

form will eventually evoke when the palindrome achieves continuous grammatical implication. I feel a sense of mystery in the fact that I have created an image that I would probably never thought of had I not employed palindromy as an image generator. Something exists that didn't exist before, at least not on the conscious level. In a letter to Michael Donner, author of a I Love Me, Vol I, Joaquin Kuhn, co-author of Rat's Live on no evil star: The Backwards Puzzle Book, writes:

> I have a very strong preference for palindrome sentences, whole ideas that incorporate a subject and a predicate, however wacky the complete utterance may be. One of my reasons for this is that in human language, it is the sentence, the communication of a whole idea, that everything else exists for. Not words in themselves, but words put together in meaningful patterns. A palindrome that contains the grammatical pattern of a sentence but somehow floats free of ordinary logical sense is to me a special form of nonsense creation. It invites closer and closer scrutiny, in hope of its yielding some sense, like a charm or oracular utterance in need of a solution. A palindromic sentence is created following two rigorous laws: it has basic grammatical structure, and the sequence of letters reverses in the middle (no exceptions!). When such a rigorously composed group of words makes sense of any kind, it carries a kind of mystic appeal, as though when character sequences were turned back on themselves, they revealed extraordinary truths like Jungian shadows or subconscious doubles – mirror images of language of hermetic significance.[5]

CONCEPTUAL PARALLELS

Palindromes exist conceptually in many areas, and one of the more lucid parallels exists in the human mind – in the form of mythology as well as psychology. According to mythologist Joseph Campbell, the imagery of schizophrenic fantasy perfectly matches that of the mythological hero journey, which consists of the three-part, universal formula: 1) separation, 2) initiation, and 3) return.[6] Campbell summarizes the structure of the schizophrenic breakdown, based on a paper by John Weir Perry published in 1962 in the Annals of the New York Academy of Sciences, as follows:

> The usual pattern is, first, of a break away or departure from the local social order and context; next, a long, deep retreat inward and backward, as it were, in time, and inward, deep into the psyche; a chaotic series of encounters there, darkly terrifying experiences, and presently (if the victim is fortunate) encounters of a centering kind, fulfilling, harmonizing, giving new courage; and then finally, in such fortunate cases, a return journey of rebirth to life.[7]

This process can be likened to a palindrome conceptually because a palindrome bears a similar textual voyage of departing from the left, following a sequence of letters (likened to a path toward enlightenment) to an axis, or central point, then continuing toward the end of the palindrome on the right, which unfolds in the same way as if the reader had reached the axis and retreated back to the left.

Here we have a parallel between the structure of the hero/schizophrenic journey and the structure of the palindrome – both can be approached in terms of an "ABA" axiom schema. Here lies a point of departure for which we can view palindromes as being directly related to

mathematics – by virtue of formal systems. Formal systems consist of axioms, which aim toward

producing number-theoretical truths, and an axiom schema is a mold in which all axioms are cast

… so one axiom schema for a palindrome would be abcba, or any extension of this structure

regardless of length, so long as the sequence is the same forward and backward.[8] Number

theoretical truths, in the case of the palindrome, would most likely equate to whatever madness

springs to life from the structure to one's cerebral canvas as suggested by the palindrome's

grammar. If you assign a similar value to both the return and the departure of the hero journey,

you get an ABA structure; moreover, the formally mapped parallel between the hero journey and

the palindrome seems stronger when we take into consideration the following prescription for

treatment of the schizophrenic:

> Now it was Dr. Perry's thesis in his paper that in certain cases the best thing is to let the
>
> schizophrenic process run its course, not to abort the psychosis by administering shock
>
> treatment and the like, but, on the contrary, to help the process of disintegration and
>
> reintegration along. However, if a doctor is to be helpful in this way, he has to understand
>
> the image language of mythology. He has himself to understand what the fragmentary
>
> signs and signals signify that his patient, totally out of touch with rationally portended
>
> manners of thought and communication, is trying to bring forth in order to establish some
>
> kind of contact. Interpreted from this point of view, a schizophrenic breakdown is an
>
> inward and backward journey to recover something missed or lost, and to restore,
>
> thereby, a vital balance.[9]

Dr. Perry recommends fulfillment of the pattern, of the structure pertaining to the

schizophrenic patient's psychosis, which seems to allude to a claim that this cycle is a part of

being human, an essential form hidden deep within every one of us. According to Campbell, the

psychologist who has best described and interpreted these essential forms and ideas is Carl G. Jung, who terms them "archetypes of the collective unconscious," as pertaining to those structures of the psyche that are not the products of merely individual experience but are common to all humankind.[10] "In [Jung's] view, the basal depth or layer of the psyche is an expression of the instinct system of our species, grounded in the human body, its nervous system and wonderful brain."[11] Consider the palindromic sequence as an archetype of the collective unconscious – the structure of universal hero-based mythologies throughout the period of written history, the structure of innumerable things in nature, a literary form first wielded by the Greeks thousands of years ago. We seem to have in the palindrome a primal pattern with many manifestations, formal and conceptual.

Another conceptual parallel to the palindrome is the shamanic voyage, which, in turn, is parallel to the hero's voyage and to the schizophrenic voyage. Campbell defines the shaman as, "… a person (either male or female) who in early adolescence underwent a severe psychological crisis, such as today would be called a psychosis."[12] So the shaman is one who went through the schizophrenic cycle and emerged as a type of religious or holy figure. Campbell says that "… the primitive shaman does not reject the local social order and its forms; that, in fact, it is actually by virtue of those forms that he is brought back to rational consciousness. And when he has returned, furthermore, it is generally found that his inward personal experiences reconfirm, refresh, and reinforce the integrated local forms; for his personal dream-symbology is at one with the symbology of his culture."[13] Upon return, the shaman has fulfilled the primal pattern.

Other conceptual parallels to the palindrome are the LSD "trip" and the yogic experience. Campbell holds that the psychotic, LSD, yogic, and mystical experiences are all plunges into the same deep inward sea[14]; moreover, they all allude to the structures of departure-enlightenment-

return that typifies the hero myth, even though the aspect of return sometimes doesn't materialize, as can be the case with not only the schizophrenic episode but also the LSD experience. Campbell says that the LSD phenomenon is, "… an intentionally achieved schizophrenia, with the expectation of a spontaneous remission – which, however, does not always follow.[15]" What remains notable, whether or not the subject of the trip or of the schizophrenic journey returns safely to the point of departure, is that the middle part – the axis of the palindrome, if you will – contains experience that is striven for. "Yoga, too, is an intentional schizophrenia: one breaks away from the world, plunging inward, and the ranges of vision experienced are in fact the same as those of a psychosis.[16]"

Moving further on into the "breaking away from the world" motif, I now note the spiritual practice of "contrariness" amongst indigenous peoples of North America. Joseph Eppes Brown talks about "clowns" as being contraries, or trickster beings, within traditional types of societies.[17] These clowns are different than the carnivalesque clowns in modern circus; according to Brown:

> In traditional societies in general, I would say that the role of the clown serves an enormously important purpose in that it opens a door, in a very subtle and effective way, into a realm of greater reality than the realm of the ebb and flow of everyday life. And this is accomplished, I think, essentially by two means. There is first of all the element of shock. Clowns among the Pueblos, for example, in the context of their ritual dance dramas, engage in, among other activities, sexual types of display which normally are quite taboo in such societies, and this causes a rupture with the ordinary everyday pattern of life. It does that by immediately catching the attention: it helps the people forget their petty little concerns about the routines of daily life. It shocks them out of that. Secondly,

once that awareness, that alertness and openness, has been achieved through the initial

shock, then it is possible to communicate on another level through the use of humor. As I

see it, all this puts the mind of the person involved in a frame which relates to the humor

of the situation, thus serving to open doors to a realm greater than that of ordinary life. It

does this extremely effectively, because all of this takes place, as I have suggested, within

a very serious ritual or dance-drama context, which involves enormous concentration,

great attention to the minute details of the rites of the ceremonies that are being carried

out – and the rigors of all this demand some kind of relief, some way in which what is

being stated through the rites can be translated onto a much deeper level, transcending the

activities, or the forms and motions of the rite itself. Thus shock and humor open into

another realm. It is a very Zen-like technique, it seems to me.[18]

This aspect of contrariness seems to involve a type of reversal on the thematic level. The

viewer is taken on a journey, starting from a sense of the mundane, or normalcy, arrives at

shock/humor/enlightenment, and then works back to the point of origin, is most likely altered in

some way. This process parallels the shamanic and hallucinogen-induced voyage, the

schizophrenic voyage, and the hero-voyage. According to mythologist Joseph Campbell, all of

these "voyages" share the common thread of process: departure, enlightenment (or impact of

some type), and return. One might say that the palindrome is a textual symbol of this process,

departing from the first letter, traveling to the axis, then returning through the sequence

backward and ending up at the initial letter: abba.

Furthermore, like the shamanic and hallucinogenic voyage, the clowns of the Pueblos

induce departure and are expected to do so. "A Heyhoka is one who has the obligation – and it is

a very weighty sanction that is imposed on such a person – to do things in ways which break

with the traditional norms.[19]" Again, this departure is launched from the platform of humor, laughter acting as a fuel that propels the sense of the contrary, which acts as a type of spiritual portal. According to Brown, inversion is an important principle of this process:

> Sometimes the Heyhoka's actions are very humorous, because this is, as we have said, a part of the technique for shattering a person's perception of, and participation in, the everyday routines of life. To break through the habitual enables one to take some distance from oneself – to see things a little bit more objectively, and thereby on a higher level. So the Heyhokas do all sorts of strange things: they do things upside down or backwards; sometimes they will pitch a tepee with the poles on the outside of the lodge covering, with the smoke flaps facing the wrong way, or with the doorway to the west instead of to the east. When they sit in the tepee maybe they will do it upside down, with their feet up in the air, lying on their backs on the ground; and this of course makes people laugh. Normally when you enter a tepee in the Plains, you must move around it in a sunwise direction, clockwise; but the Heyhokas will do it the wrong way. Everything is done in reverse. Sometimes instead of going in the doorway they lift up the lodge cover at the back and crawl under; things like that.[20]

Now I'm going to go out on a very shaky limb because I'm going to propose assumptions about somebody that nobody knows anything about. Sotades the Obscene of Maronia is accredited by historians to be the inventor or discoverer of the palindrome as a literary form. He was also a notorious author of dirty poems, or scurrilous verse. This is where the limb gets really shaky. Perhaps Sotades operated off of the same aesthetic in his execution of both forms. Perhaps he recognized, whether consciously or unconsciously, that vulgar poetry is a type of reversal that contradicts or offends popular norms, a structural principle that might somehow

26

bear a resemblance to the sequential alphabetical reversal of palindromes. Unfortunately, I cannot present any of the author's works as evidence, for a mere handful of fragmented lines survive. The only argument I can make for his inclination toward shock is that shock led to his demise. Offended by Sotades'unsavory portrayal of him in poetry, King Ptolemy the II of Thrace had Sotades rounded up, enclosed in a lead coffin, and thrown into the sea.[21] Sotades was amongst the first clowns martyred for clowning. At the very least, it seems as though a primal structure expressed itself through Sotades in two of many possible ways: thematically and text-visually.

Maybe this structure, with its multiple faces of expression, is at the core of forgotten human experience that psychologist Carl Jung calls archetypes, images retrieved from genetic memory.[22] According to Campbell, such images and symbolism exist between the departure and return points of the schizophrenic voyage:

…[man] has both an inherited biology and a personal biography, the "archetypes of the unconscious" being expressions of the first. The repressed personal memories, on the other hand, of the shocks, frustrations, fears, etc., of infancy, to which the Freudian school gives such attention, Jung distinguishes from that other and calls the "personal unconscious." As the first is biological and common to the species, so this second is biographical, socially determined, and specific to each separate life. Most of our dreams and daily difficulties will derive, of course, from the latter; but in the schizophrenic plunge one descends to the "collective," and the imagery experienced is largely of the order of the archetypes of myth.[23]

I want to take this exploration a little bit further and propose the actual structure of the journey to be an archetype of the collective unconscious. Something recalled from genetic memory. The

structure of myth. The structure of psychosis. An axiom schema that has grown out of nature and

into the expressive faculties of the human mind.

RECURSION

The palindrome is an example of recursion, which is a dominant structural dynamic in many aspects of language, math, and science. As I have noted, the shaman, yogic, hallucinogenic, schizophrenic, and hero voyage are conceptually parallel to the palindrome, and recursion is at the heart of this parallel. The very juxtaposition of "departure" and "return" implies recursion, and one can say that the process of such a reversal hinges upon the structure employing an instance of itself so as to achieve completion. This type of function exists not only in the palindrome and the aforementioned "voyages" but also in the expressions of art, nature, and language.

Recursion is a procedure that invokes an instance of itself, and thus can be applied repeatedly to create or analyze entities of any size.[24] Recursion applies directly to the palindrome in that it invokes an instance of itself, or, more clearly, the palindrome refers to itself backwards if we are looking at the structure as something that progresses from left to right, as is natural to view sentences in the English language. Once the letters arrive at their axis, their nucleus, the center of the palindrome, the same order unfolds in reverse toward completion of the palindrome, like the hero en route back to the point of departure. If we start from the axis of the palindrome and follow the letters in both directions, we find that we are looking at identical letters bilaterally onionskinned all the way up to the most peripheral letter on both sides.

Author and linguist Steven Pinker cites recursion as part of a category of qualities which have yet to be demonstrated in the case of animals but which nonetheless are inherent in human language, qualities such as reference, use of symbols displaced in time and space from their referents, creativity, categorical speech perception, consistent ordering, hierarchical structure, infinity, and so on.[25] The word "inherent" strikes me as supporting the claim of the palindrome

as a structural archetype; however, the heart of such a claim lies in recursion, which all examples I have previously cited are based on. If recursion weren't a structure imbedded in the human mind, perhaps language wouldn't rely so heavily on the usefulness of recursive structures in grammar to bear the fruits of concise meaning. According to Pinker:

> Without recursion, you can't say "the man's hat" or "I think he left." Recall that all you need for recursion is an ability to embed a NP inside another NP or a clause within a clause, which falls out of rules as simple as "NP=det/N/PP" and "PP=P/NP". With this ability, a speaker can pick out an object to an arbitrarily fine level of precision. These abilities can make a big difference. It makes a difference whether a far-off region is reached by taking the trail that is in front of the large tree or the trail that the large tree is in front of. It makes a difference whether that region has animals that you can eat or animals that can eat you. It makes a difference whether it has fruit that is ripe or fruit that was ripe or fruit that will be ripe. It makes a difference whether you can get there if you walk for three days or whether you can get there and walk for three days.[26]

Topographically, the principle of recursion is evident in the labeled branches of many a phrase structure tree, labeled branches that, as Pinker states, " … act as an overarching memory or plan for the whole sentence. This allows nested long-distance dependencies, like "if … then" and "either … or", to be handled with ease. All you need is a rule defining a phrase that contains a copy of the very same kind of phrase, such as:

S= either S or S

"A sentence can consist of the word "either", followed by a sentence, followed by the word "or", followed by another sentence."

S= if S then S

"A sentence can consist of the word "if", followed by a sentence, followed by the word "then", followed by another sentence."

These rules embed one instance of a symbol inside another instance of the same symbol (here, a sentence inside a sentence), a neat trick – logicians call it "recursion" – for generating an infinite number of structures. The pieces of the bigger sentence are held together, in order, as a set of branches growing out of a common node.[27]

Furthermore, recursion is a powerful tool in morphology, particularly with respect to derivational affixes. In the same manner that phrases within phrases and sentences within sentences can form loops that help to illuminate specific meanings, affixes attached to a word can recursively modify the meaning of the word. For a simple example, take the word "Republican," which pertains to one's political stance. Attach the prefix "anti" to negate the original word and suddenly the word becomes "anti-Republican", which denotes opposition toward the idea of "Republican." Repeat the process by attaching "anti" to "anti-Republican" and you get "anti-anti-Republican," which denotes opposition toward the idea of "anti-Republican," which pretty much brings us back full circle to a point where we are closer if not directly at the original meaning. This process can continue indefinitely, as illustrated further by Pinker:

> … the output of one morphological rule can be the input to another, or to itself: one can talk about the "unmicrowaveability" of some French fries or a "toothbrush-holder fastener box" in which to keep one's toothbrush-holder fasteners. This makes the number of possible words in a language bigger than immense; like the number of sentences, it is infinite. (for example, "floccinaucinihilipilification" – OED – "the categorizing of

something as worthless or trivial." +al +ize +ation +al +ize=

"floccinaucinihilipilification<u>alizationalize.</u>")[28]

Recursion is found outside of the realm of spoken-language grammars. Take, for example, the late sixteenth-century composer J. S. Bach, who through music employed complex recursive forms, such as the canon. The canon consists of the idea of one single theme played against itself.[29] Take the classical nursery rhyme, "Row, row, row your boat." The first voice begins the canon, singing the words, "Row, row, row your boat gently down the stream, merrily, merrily, merrily, merrily – life is but a dream." Upon the fifth beat, during the first syllable of "gently", the second voice begins singing the theme from beginning to end, staggered four beats behind the initial beat that began the first voice. Then, at the ninth beat, as the first voice sings the first syllable of the word "merrily" and the second voice sings the first syllable of the word "gently," the third voice begins the theme, and so on, until the seemingly cacophonous song attains a fluid harmony in synch with the time signature. Though this type of canon doesn't appear to have too much in common with the palindrome, recursion is nonetheless a binding tie. In the above canon, the same structure repeats at different beats of the song, simultaneously with the other voices. In the palindrome, the inner nesting is letter by letter; in the string, "abcba", the sequence "bcb" is inner nested in the string, and "c" is inner nested in the middle of the "abba" string.

Though a popular device of the canon is inversion, the most obvious likeness to the palindrome, however, is the "crab canon", where a retrograde copy is played against the original theme, backward in time.[30] Named in reference to the peculiarities of crab locomotion,[31] the crab canon, like the palindrome, ends where it began, forming a "strange loop". A strange loop, according to Hofstadter, is a phenomena that occurs whenever, by moving upwards or downward

through the levels of some hierarchical system, we unexpectedly find ourselves right back where we started.[32] Bach's "Endlessly Rising Canon" is an example of Hofstadter's Strange Loops; it is a canon that morphs from key to key until it achieves a sense of resolution in the same key that it started from. Another example comes from the painting of Dutch artist, M. C. Escher. According to Hofstadter:

> To my mind, the most beautiful and powerful visual realizations of this notion of Strange Loops exist in the work of the Dutch graphic artist M. C. Escher, who lived from 1902 to 1972. Escher was the creator of some of the most intellectually stimulating drawings of all time. Many of them have their origin in paradox, illusion, or double-meaning. Mathematicians were among the first admirers of Escher's drawings, and this is understandable because they often are based on mathematical principles of symmetry or pattern … but there is much more to a typical Escher drawing than just symmetry or pattern; there is often an underlying idea, realized in artistic form. And in particular, the strange loop is one of the most recurrent themes in Escher's work.[33]

A third example of the recursive Strange Loop is the Epimenides paradox; Epimenides, who was a Cretan, coined the famous loop, "All Cretans are liars." This statement is perhaps the most simple example of a self-reflexive loop: if all Cretans are liars, and Epimenides is a Cretan, then he's lying about the fact that he's an inherent liar, and so on.[34] And, of course, a final example of a strange loop is an actual palindrome, where, though the literal, contextual meaning rarely evokes copies of itself (except in rare, powerful palindromes, like, "Did I poop? I did!"), the letter-by-letter journey will always end in the manner that it began – on the letter that it started with.

Since the advent of the wheel, recursive principles have been a driving force in the evolution of technology. Logic and mathematics break down into recursive constituents. Somewhere along the way, we found out that the earth's surface is a continuous curve – a sphere, not a plane. Today, we live in a world that is exponentially becoming dominated by computers. It seems that an ultimate goal of technology is to duplicate human intelligence, and many computer scientists cite recursion as a means of achieving that goal. According to Hofstadter, "Without doubt, strange loops involving rules that change themselves, directly or indirectly, are at the core of intelligence.[35]"

Recursion in computer science can be metaphorized by the concepts of pushing and popping, where," …to push means to suspend operations on the task you're currently working on, without forgetting where you are – and to take up a new task. The new task is usually said to be "on a lower level" than the earlier task. To pop is the reverse – it means to close operations on one level, and to resume operations exactly where you left off, one level higher.[36] This structural process seems widely rendered. A dream within a dream within a dream. A phrase within a phrase. "Pushing" from departure and "popping" back into return. Hofstadter says that relevant information is stored in a "stack," and he further likens such recursion in computer science to a telephone call where you put several interrupters on hold. The stack tells you who is waiting on each different level, and where you were in the conversation when it was interrupted.[37]

Recursion may be an important part of how we think, how we operate, how we problem-solve. It seems as if technology is modeled after the recursive nature of the human mind. "It is an inherent property of intelligence that it can jump out of the task which it is performing, and survey what it has done; it is always looking for, and often finding, patterns.[38]" We hear music recursively – in particular, we maintain a mental stack of keys, and each new modulation pushes

a new key onto the stack.[39] We utilize similar recursive methods to communicate and understand each other. Steven Pinker writes:

> What boggles the human parser is not the amount of memory needed but the *kind* of memory: keeping a particular kind of phrase in memory, intending to get back to it, at the same time as it is analyzing another example of *that very same kind of phrase*. Examples of these "recursive" structures include a relative clause in the middle of the same kind of relative clause, or an *if … then* sentence inside another *if … then* sentence. It is as if the human sentence parser keeps track of where it is in a sentence not by writing down a list of currently incomplete phrases in the order in which they must be completed, but by writing a number in a slot next to each phrase type on a master checklist. When a type of phrase has to be remembered more than once – so that both it (the cat that …) and the identical type of phrase it is inside of (the rat that …) can be completed in order – there is not enough room on the checklist for both numbers to fit, and the phrases cannot be completed properly.[40]

Perhaps, as the human race strives to accurately duplicate its own kind of intelligence, it will inevitably be forced deeper into the incessant desire to understand its own ability to understand its own ability. According to Hofstadter, the key may lie within the nature of recursive structuring. He writes, "Instead of just considering programs composed of procedures which can recursively call themselves, why not get really sophisticated, and invent programs which can modify themselves – programs which can act on programs, extending them, improving them, generalizing them, fixing them, and so on? This kind of "tangled recursion" probably lies at the heart of intelligence.[41]"

Maybe recursion is a universal grammar principle, found at every level, in every aspect, and binding every level and aspect continuously. It is representative in psychology, mythology, language, art, and technology. And if recursion is an archetype that gave rise to the literary form of the palindrome, which was first practiced thousands of years ago, then what does this archetype symbolize? According to Hofstadter, "Implicit in the concept of Strange Loops is the concept of infinity, since what else is a loop but a way of representing an endless process in a finite way?"[42] Interesting. Surfacing expressions of infinity. Maybe humans could not have evolved into the Earth's current dominant species without recursion. Maybe the first class of primate to conceptualize infinity walked away from Eden genetically equipped with an innate propensity for recursion.

CORKSCREWED

"I do not ask you to believe that the occurrence of similar curvilinear formations in various organic and inorganic phenomena is a proof of "conscious design." I only suggest that it indicates a community of process imposed by the operation of universal laws."[43]

Theodore Andrea Cook

Infinity is a concept that has always fascinated me. I feel that fascination when I look at palindromes, or anything symmetrical or patterned. Nature is a boundless continuum of patterns that evoke awe, that feeling which Joseph Campbell says is the individual participating in the divine, and something inside of me intuitively insists that the palindrome might some way be a principle of infinity. According to "The Divine Proportion" author H. E. Huntley:

> A sense of wonder, even of awe, in the presence of the infinite, is one of the basic human emotions. Through all the aeons of time when man has stood beneath the cold light of stars and gazed into the unbounded depths of space; and especially since man first understood, a century ago, that an age-long stretch of evolutionary history lies behind him, infinity has been for him an emotionally charged concept. Music has power to arouse this emotion. So has mathematics.[44]

That's always the clincher in a conversation about the infinite – the mention of emotion often-times seems to take the steam out of any hope for an empirical argument. Emotion cannot be measured the same way water in a beaker can be measured.

Emotion, however, may be the most accurate way to gauge infinity. The Oxford English Dictionary defines the adjective, 'infinite,' as, " … having no limit or end (real or assignable); boundless, unlimited, endless; immeasurably great in extent, duration, or other respect."[45] By the very nature of the term, immeasurability is innately immeasurable empirically, but just because

humans can't figure out how to measure something that might be measurable doesn't mean that

the thing is automatically immeasurable and therefore infinite … again, emotion may be the most

accurate way to gauge infinity. Outside of emotion, the concept of "infinity" often falls into the

terror of theory perverted by merciless binary insistence; however, art often expresses notions of

infinity through the emotional, aesthetic dialogue that happens between the artifact (poem,

painting, song) and the person appreciating the artifact. According to Huntley:

> It is to the emotionally charged experiences of a thousand generations of our ancestors
>
> that we must look in order to discover the sources of aesthetic pleasure in art, in poetry,
>
> in music, in mathematics and in other artistic forms. It is not impossible to guess what
>
> some of these experiences must be which, either because their repetition is so frequent or
>
> because they evoke strong mental excitement, have left their indelible traces on our
>
> mental structure; these traces are a fixed part of our human inheritance and the ground of
>
> our aesthetic appreciation.[46]

Just about every fish, bird, and mammal can be structurally likened to the palindrome: most

creatures can be split down the middle into symmetrical, reverse-ordered halves. Human beings

have been glimpsing this type of bilateral symmetry in nature ever since "glimpsing" became

something that human beings did, and if I'm the only person who finds symmetry to be

aesthetically pleasing, then I guess I stand alone, but I know that is not the case.

Another recursive structure, representation of infinity, and phenomenon that has pulled at

the strings of human aesthetic sensibility is the spiral – what I propose might be the cousin of the

palindrome, or maybe at least in the same family. In geometry, according to the Oxford English

Dictionary, a spiral is a continuous curve traced by a point moving round a fixed point in the

same plane while steadily increasing (or diminishing) its distance from this point.[47] Remember

that recursion involves a structure invoking an instance of itself, as is the case of how the spiral of a mollusk's shell is formed. To quote Huntley:

> The fundamental mathematical property of the equiangular (or logarithmic) spiral corresponds precisely to the biological principle that governs the growth of the mollusk's shell. This principle is the simplest possible: the size increases but the shell remains always similar to itself. It grows at one end only, each increment of length being balanced by a proportional increase of radius so that its form is unchanged. The shell grows by accretion of material; more accurately, it accumulates rather than grows.[48]

This process is recursive because the instances of self-invocation occur over time through the growth of the creature, which retains its shape but gradually increases in size, thus causing the spiral shape. This shape has been a common occurrence in nature for millions of years.[49]

The spiral is a dominant structure in plant growth as well as in animal growth. Associated with phyllotaxis, the spiral reveals itself in the pattern of florets in flowers of the composite family, such as the sunflower.[50] Not only do such florets boast a spiral, so does the slowly twisting bark of most trees, all the way down to leaf arrangement. According to "The Curves of Life" author Theodore Andrea Cook: "The fact that the leaves of a majority of higher plants are arranged in a spiral sequence up the stem, whether on an elongated leafy shoot or in a spiral rosette, as in the case of a houseleek or dandelion, is so obvious that it may be taken as a general and fundamental phenomenon of plant-construction."[51]

The spiral formation is not limited to plant construction. The limbs of human beings rely on spiral principles for rotation. To quote Cook:

> Torsion has occurred during the evolution of man, and rotation occurs in his upper and lower extremities during development; so that the upper extremity rotates outwards and

the inner surface becomes anterior, thus forming a right-hand spiral in the right arm and a left-hand spiral in the left. The lower extremity rotates in the opposite direction, so that the original inner surface becomes posterior. It is to this developmental twist that the spirals apparent on the surfaces of human bones are largely due.[52]

Joints within the human body provide interesting examples of spiral formations. "The condyles of the lower end of the femur, which enter into the formation of the knee joint, are of a spiral formation, which permits the longest radius of the condyle to come into action when the knee is extended, and thus gives security in various positions of the leg … the spinal column can be spirally rotated in either direction."[53] The very human bodies we wear depend on the spiral for dexterity and flexibility of movement. Even before the body is a body, spirals are at work, for "… the spermatozoa of many animals show a spiral flange formed along the cilium, which is used for boring into the egg."[54]

The implications of the spiral are astounding. Spirals appear at every level in nature, in plants, animals – in everything that boasts life. In every living thing that grows and expands. Spiral formations can be found in the smallest forms of life – in organic atoms that share both vegetable and animal characteristics, in a large number of the bacilli which grow into threads.[55] The list goes on and on:

In plants, spirals are observable from seeds and seed cases and cells, to stems and flowers, and fruit. In animals, and in man, the spiral may be said to follow the whole course of the vital development from the spermatozoon to the muscular structure of the heart; from the umbilical cord or the cochlea of the ear to the form and framework of the great bones of the body. It may be noted that the cochlea hidden in the ear is one of the proofs that the bone containing it belongs to a mammal."[56]

What does the spiral imply? Is it implicitly and exclusively relevant to living things? To the vital functions of living things? It is almost as if evolution upgrades living things gradually through principles of spiral formation; however, the spiral is found in non-living things, too. According to Cook, " … it may be perfectly true that when a spiral formation is observable in organic subjects, it may express in them the same results of stress or energy which are observable in such lifeless or inorganic forms as the starry nebulae, the waterspout, or certain forms of crystals."[57] So the spiral is more than just something organic – it borders on universal as a principle of growth and energy distribution. According to Cook:

> … few facts are more significant than a similarity which may be proved to occur in things that are apparently quite different; and they present a curious analogy with the theories of the ultimate constitution of matter; indeed, it must always strike an unprejudiced observer that there may be underlying all these cases the working of some still more mathematical form, in that same spiral which seems naturally assumed both by growth in living organisms and by energy in lifeless things, such as the nebula.[58]

I'm not the first person to write about spirals, but I doubt any student of the spiral can get too much further than this point where language starts to fail. Once you start looking at things in terms of similarities rather than differences, a feeling of connectedness arises. You observe ubiquitous examples of spirals across the spectrum of the natural world, and you get back to emotion, which was the "real" thing to begin with. It was the real measure. Because language is limited. From any point on the Earth, take a pin and prick the sky with it. Magnify that point by eighteen billion light years using the Hubble Telescope, and you get a picture of thousands of fuzzy looking stars – but wait: they're not stars; they're tiny little spiral galaxies, going on for what looks like "infinity." At the same time, every particle in those spiral galaxies infinitely

implodes and subdivides further and further and further. So, apparently, infinity is explosive and implosive simultaneously? At this point, all that language is good for is to say, "Wow," which is, indeed, a palindrome.

For sure, the spiral has influenced the human mind. Perhaps people of the Magdalenian epoch at least twenty thousand years ago felt the allusion to infinity when they adorned themselves with shells.[59] And we assume that the impressive and precise architecture and sculpture of ancient Greece was copied from nature. According to Cook, "… whether the ancient Greeks used a shell or not in making their designs, it is very significant that the beauty of their workmanship should exhibit so curious a harmony with the lines of an organic growth that are nearly, but not quite, the curves of a mathematical spiral."[60] I believe the spiral has instructed humans because they are part of us … or maybe we are a part of them. Whatever the case may be, the deep and difficult problems of spiral growth touch on fundamental laws that regulate the world and the tendencies that instinctively influence the art of humans.[61] I don't think that notion is too abstract – the notion of the spiral instructing humans through nature. The spiral is a primary structural dynamic. According to Cook, "It is, in fact, almost possible to catalogue the forms of the spiral utilized by man, in rifles, in staircases, in tunnels, in corkscrews, or a hundred other ways, and to parallel nearly every one in natural formations."[62]

We humans have a long built relationship with recursive forms. They are evident in grammar and language, art and music, in the geometry of physical living and non-living entities from micro-organisms to stellar bodies, and psychology. Just as the universal structure found in Campbell's "hero myth" seems to surface from deep within the mind, from generation upon generation of collective human experience, so do other principles of recursion, such as the timeless spiral and the ancient literary form of the palindrome. I believe that these essential

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forms and ideas are the fabric of Jungian archetype, ingrained in our being through nature. According to Huntley:

> The mental processes evoked in all men for a million years past by their physical environment have deposited a soil in which the roots of the psyche are deeply and securely implanted. Experiences of al the generations of a man's ancestors, repeated millions of times and recorded as memory structures in the brain, are scored ever more deeply as they are transmitted from generation to generation through the centuries, often showing a brief vitality in unaccountable dreams."[63]

All that I can do, really, as is the case with every individual concerning any imaginable topic, is draw my own conclusions. Palindromes have affected the way I look at reality – they have affected my art and my personality; I never knew when I co-wrote my first palindrome – Bob has inept penis. Ah, Bob – that I would be nurtured toward recursion. I believe intuition led me down this path. At first, my enthusiasm for palindroming rested in the ludicrous, random contexts that could be squeezed out of the sequence's letters. After all, to quote contemporary palindromist William Irvine, "… at least half the fun of the palindrome is its random celebration of the absurd…."[64] Still, something inside of me nags that the palindrome represents more, and this past summer brought to light a palindrome within the Y (male) chromosome that is more than two million genetic characters long, a sequence that scientists attribute to the male chromosome's resistance to mutation – because the gene has a means of checking itself.[65] And Nature has shown that the joints of most mammals are spread across their limbs in accordance with the Divine Proportion, a ratio that the equiangular spiral can be derived from. Of course, this alludes to something that I will write toward for the rest of my life – the palindrome as a primal principle of physical grammar, a signature of some type. For now, I must not lose touch

with the celebration. That celebration started for me five years ago, but now, through my exploration of the palindrome and related recursive structures, it is gradually maturing into something resembling prayer, and every time I read or write palindromes, something deep and undefinable within my mind and my heart suggests to me that I'm dealing with an expression of infinity. At the very least, I believe that that deep and undefinable something stems from wonder; I hope that that my own sense of wonder remains a riddle that I will never come close to solving.

PALINDROMES

Michael Constantine McConnell

Signing is not, new pet son. Pass awe? Not so! No green I plan. I dog … Miss, I hog; I say, "no

best-fill lasts"; I'm red now … still, I hate new. Now go, fat asleep user-god. Irate, we do not

gnash, sag, nor we nab. Run as muskcats poll a gym-barge (gasp). I help made-wart stew stiff. Is

a name surer … eh, sir … eh, Toro? Do fist lame Rome; yes, sell war-cotton's nog at cola. I rob

rasta-prod of less. Red dunes I rot. No, do not spill, Lord; puff its rosecap's red nub. Milk-

lawyer, pot nine men in stunt news. A doctor sits – I'm fine! Desire Warren's lip to help miss. A

warning (Is it? Is not?) noses a rest, sir. Whore, work curt as a sin-net set! I knob mud eras, nag!

Rode cane melts. I, penis, yawn. I sub betrayal. Prose werewolf, I did not send a fag, nor we rip

mud as a side wang. Dew as pun, we stub. Diaper, fill a bastion. Stun-saw tips a rat sewn idle.

Homemade porn? Ah, ten odes re[v]ersed on: Ethan roped a memo held in west. A rasp – it was

nuts? No, it's a ball if repaid but, sewn up, sawed, gnawed, is a sad umpire. Wrong a fad nest on.

Did I flower ewes or play art? Ebb us in ways, in epistle men – aced organs are dumb on kites.

Tennis as a truck rower, oh wrists, erases on tons. It, I sign-in raw; as simple, hot pilsner, rawer,

is Eden if mist is rot, codas went nuts. Nine men, into prey, walk, limb under spaces or stiff-up –

droll lips to nod onto risen udders. Self-odor pats arborial octagons not to crawl less, eye more

malts if odor-other is here, ruse-man – as if fits; wet strawed, ample hips age. "Grab my gallop-

stack," sums an urbane wrong. Ash sang to node-wet, arid ogres, up eels, at a fog won. We net a

hill. Its wonder mists all, lifts ebony as I go hiss. I'm god in alpine – ergo: no stone was sap. No

step went on – signing is.

366/1273

Tide-red rodent, fold a basin; rope grass yarn. Oh, to Bev, love, did I put sleep. Is a maiden

madder free? Bev, Ian pissed a hot Diana Ross; I'd eye no help. Puss is a button-era's. God-damn,

a loneliness is senile, Nolan. Mad dogs are not tubas. Is supple honey? Ed is … so ran aid to

Hades. Sip naïve beer, Fred. Damn Ed! Aim as I peel, stupid. I'd evolve both on rays. Sarge, porn

is a bad loft. Ned ordered it.

86/299

Dog-bard, a wall arose. Soon, a red, nude man-era stole Gail of deli, and, lo, my tit-net carts

bade, "trap millions' parts," but a snag rose many fits, and I'd reward no cabs. Eve[n] Eve's bacon

drawer did nastify names, organs, a tub, straps. No ill-imparted, abstract-entity mold nailed

foliage. Lots are named under a noose's oral law - a drab god.

66/259

Poopy? No - benign. It's a pea; glad I am not. A sign is "Eros eras" red. Dustin, run; on an eve

sits ultra paste. Neo boob-milk cats or gentle [f]elt negros tack limbo-oboe nets apart. Lust is

even a non-urn; its udders are sore. Sing, "I sat on maid algae pasting in ebony poop."

57/203

Evil Al, last, I fist it not. Until lap-pasta, retarded dew-bards ate jism. Regret fades so big I plate

fog. We flare talons [a]s no lateral few. Go fetal pig! I bossed after germs. I jet as drab, wedded

rate-rats appall it. Nut on tits if it's all alive.

52/189

No, Mel's poop nods as Don and Edna's gel traps tar-brawn amore, yet no disk-cuff fits. Parcel a

[p]ale crap; stiff fucks I don't eye. Roman war brats part legs and Edna nods as Don poops

lemon.

39/145

Anal pastel lamb-mud ate big genitalia. His piss-tide start sets palsy trap at an igloo. [F]ool, gin

at a party slaps test-rats, edits sips. I hail a tin egg. I bet a dumb mallet sap, Lana.

39/141

We sew fire. Wolf-den rubs Dan until sad; lab gulf-fits spit a fig on Eva's rep. Puss[y]'s supper.

Save nog if a tip's stiff. Lug - bold as lit nun ads - burned flower if we sew.

37/127

"No, Keep Rod on," a brute lisps. "I'll rig a Tulsa siren, rut an item. Albinos, Mister [B]ret

Simson, I blame. "Tina Turner is a slut," a girl lisps. "I let urban odor peek on."

35/123

Murder refereed dew or robot lash? Tap Ned or that cud. Bad is evil, Eva? Help a [m]aple have

lives I'd abduct. Ah, trodden paths, alto borrowed, Dee referred rum.

30/119

"Relapse," he pondered. "No plasma, yet a straw, Latin egret-sewer [g]rew Ester genital warts,

ate yams," Al pondered. "Nope, he's paler."

22/99

Deb, but still - I'm late? Mel, oh pal, evade vagina, [m]an; I gave Dave lap-hole, met Al Mill. It

stubbed.

20/93

Sun, assess: I'm *all* able-falafel. Banana, Myra? No is simple; [h]elp missionary man, an able-

falafel, ball a misses's anus.

21/91

Raft new, tided dew; fire fast on Eva. His pilsner is no pis[s]. Sip on sirens' lips - I have not.

Safer if wedded, it went far.

26/89

Last, I so pederast it; warm regrets or fed as I, semen a[s] a nemesis, a defroster germ, raw tits

are deposits, Al.

23/85

Tia, winepots rub sun as risen. Infinity's s[a]ssy tin if nine sirs' anus burst open. I wait.

17/69

Part Adam, I, Maria, help pins repel a lio[n], oil a leper's nipple hair. Am I mad? A trap?

19/63

No, I tan. I'm regret. Fade? No, Melissa'[s] ass I lemoned after germination.

13/55

Sun as Tim or felt tips laminate [w]et animal spittle from its anus.

13/53

O, gas, emit. Did I say, "a dot?" Marissa'[s] ass I ram today as I did times ago.

18/53

Oh God! Sla[p] Al's dog, ho!

6/17

[1] Eckler, Ross. <u>Making the Alphabet Dance: Recreational Wordplay</u>, p. 36

[2] Donner, Michael. <u>I Love Me Vol. I</u>, p. 215.

[3] Donner, p. 190.

[4] Ibid., p. 302.

[5] Ibid., 180.

[6] Campbell, Joseph. <u>Myths to Live By</u>. p. 209.

[7] Campbell, p. 208.

[8] Hofstadter, Douglas R. <u>Godel, Escher, Bach: An Eternal Golden Braid</u>, p47.

[9] Campbell, p. 209.

[10] Ibid, p. 216.

[11] Ibid.

[12] Ibid., p. 210.

[13] Ibid, p. 214.

[14] Ibid, p. 214.

[15] Ibid, p. 213.

[16] Ibid.

[17] Dooling, D. M. "The Wisdom of the Contrary: A Conversation with Joseph Eppes Brown" <u>Parabola</u> v. 4.1, p. 22.

[18] Ibid.

[19] Ibid., p. 56.

[20] Ibid., p. 56-57.

[21] Donner, p. 345.

[22] Campell, p. 217.

[23] Ibid.

[24] Pinker, Steven. <u>The Language InstincT</u>,p. 481

[25] Pinker, p. 347.

[26] Ibid., p. 367-68.

[27] Ibid., p. 100.

[28] Ibid., p. 129

[29] Hofstadter, p. 8.

[30] Ibid.

[31] Ibid., p. 9.

[32] Ibid., p. 10.

[33] Ibid., p. 10-11.

[34] Ibib., p. 10.

[35] Ibid., p. 27.

[36] Ibid., p. 128.

[37] Ibid

[38] Ibid., p. 37

[39] Ibid., p. 129.

[40] Pinker., p. 207.

[41] Hofstadter, p. 152.

[42] Ibid., p. 15.

[43] Cook, Theodore Andrea. <u>The Curves of Life</u>. Dover, 1979. p. 4

[44] Huntley, H. E. <u>The Divine Proportion: A Study in Mathematical Beauty</u>. p. 87.

[45] Oxford English Dictionary Online.

[46] Huntley, p. 79.

[47] Oxford English Dictionary Online

[48] Huntley, p. 168

[49] Ibid., p. 100.

[50] Ibid., p. 39.

[51] Cook, p. 81.

[52] Ibid., p. 230.

[53] Ibid., p. 231.

[54] Ibid., p. 235.

[55] Ibid., p. 234-5.

[56] Ibid., p. 8.
[57] Ibid., p. 407.
[58] Ibid., p. 408-9.
[59] Ibid., p. 17.
[60] Ibid., p. 34.
[61] Ibid., p. 6-7.
[62] Ibid., p. 16.
[63] Huntley, p. 79.
[64] Irvine, William. Madam I'm Adam: and other Palindromes, p. 2
[65] http://www.cbc.ca/stories/2003/06/18/y_xsome030618

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