

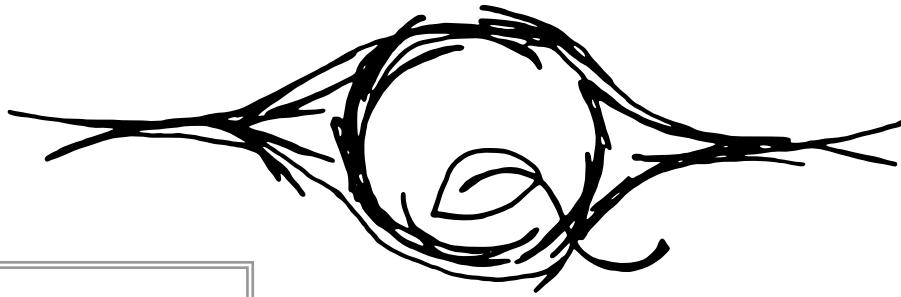
# THE QUAD

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Winter 2009

of Grove City College





## THE QUAD

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### Editors' Note

It is a strange thing to discover one's past, especially in our postmodern age. For we are prone to believe that we live in a historical anomaly, that we're progressing so rapidly, thanks to technology and science, that we are living in an altogether (brave) new world. To discover one's past is to break out of the solipsistic tyranny of the present. Nanotechnology and telecommunications notwithstanding, our world today is much like the world of years past—of 1957 and 1958, for example, when all eyes were on the Middle East, even on Iraq, and all minds were fretting about the homegrown terrorism of the '50s called communism.

We have discovered that our "new" magazine actually has a past. In 1957 and 1958, Grove City College had an annual publication by our very name. Though a predecessor of the college's literary magazine *The Echo*, *The Quad* of 1957 and 1958 more resembles the quarterly magazine before you, containing creative non-fiction and essays in addition to the short stories and poems now prominent in *The Echo*. And while the laptop has replaced the typewriter, the same perennial concerns persist—military conflicts, culture wars, debates over the good life and what makes for a quality education. We are pleased to reprint here a short story by Mr. Ralph Hartman of the class of 1958 that appeared in the 1957 issue of *The Quad*. Mr. Andrew Brinkerhoff of the class of 2009 brings us full circle with his essay on Thomas Kuhn's *Structure of Scientific Revolutions* (1962), demonstrating that we're still grappling with the problems of yesteryear.

Then as now, we are indebted to the college for their generous support. Although student-run, this magazine promises to continue building on our past with the staid assistance and assurance of administrators, professors, and alumni. We thank Mr. Jeff Prokovich for making this fiscally possible, President Jewell and the administration for incorporating us into their vision for the college, Dr. Vince DiStasi and the TLC staff for helping produce the magazine, SGA for their good partnership, and Dr. Collin Messer and our editorial board for their guidance. Additionally, we thank Mr. Dale McCarthy, the editor of *The Echo*, for uncovering our common roots and for pursuing amicably our common cause. May we never grow too far apart.

Truly,

Joel David Musser  
Senior Editor

Hännah Schlaudt  
Junior Editor

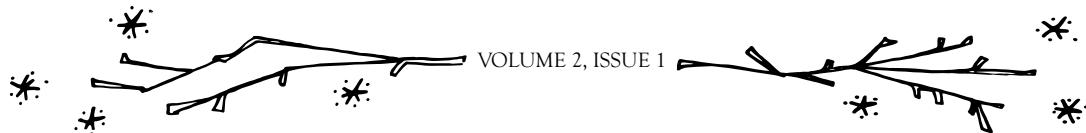
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# THE QUAD | WINTER 2009

VOLUME 2, ISSUE 1



## LETTERS TO THE EDITOR

4

## MOMENTS

Wisdom at Sixteen	5	<i>Jayni J. Juedes</i>
Quiet Interlude	7	<i>Ralph Hartman '58</i>
Aren't You Excited?!?	10	<i>Justin Olson</i>
Lost Time	13	<i>Hännah Schlaudt</i>

## REVIEWS

Technology as Magic	15	<i>William A. Ross</i>
Distraction is Bad for your Brain	17	<i>Taylor Knight</i>
Come in for Some Grace	18	<i>Mallory Wilhelm '08</i>

## POETRY

Vanitas	12	<i>Anonymous</i>
Slaughterhouse Blues	19	<i>Barton Willis</i>
The Fullness of Time	14	<i>Erin N. Thompson</i>
16 January 2009	6	<i>Phil Gruber</i>

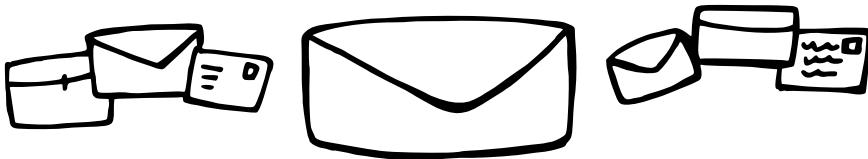
## ESSAY

Science Humbled	20	<i>Andrew Brinkerhoff</i>
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## CONUNDRUMS

27





# LETTERS TO THE EDITOR

## Blind Ladders

Dear Editor,

I quite enjoyed all of the selections for the Fall 2008 issue; *The Quad* becomes more diverse and entertaining with every issue. Josh Mayo's free prose story "Ladders," for example, was a fascinating read—his style certainly commands attention. I don't think I would have liked it as much had it been written in a more formal style. Samuelson's imaginary letter to Harold Bloom, however, was the piece that left a longer-lasting impression on me, if only for the non-imaginary fact that Bloom indeed casts a very long shadow over literary students such as myself. And, as always, I adore the authors blurbs at the end of each section, whether they're strictly biographical or just plain droll. Though a very small part of *The Quad*, I hope that it is a feature the magazine intends to keep; and I hope that the magazine overall continues its outstanding selection in the issues to come.

Natalie Gregory

## Blind Artists

Dear Editor,

It's undeniably cold; the ground's covered with snow; branches hang low bearing their icy load. And though some still obstinately wear their shorts, everyone knows it's winter here in Grove City, PA. And we don't like it.

But what many may not know is that all around us artists are dying. Andrew Wyeth went to sleep January 16th and never awoke, and now John Updike—he too is dead. I feel within me a certain sense of loss.

'Cause see, I thought we had something going here. They both grew up where I grew up. And Updike wrote about white Protestant middle-class Americans like me,

and Andrew Wyeth—well, this summer, I got to know his granddaughter. (We both gave tours across the street from each other. She may not remember me. I'm rather shy. But I remember she said, "My grandfather is not dead. I'm sure, because I just saw him.") But now I know I'll never see him. Nor will I ever get to talk *tête-à-tête* with John. All they've left me is their art.

And I was just saying the other day, "Nothing great has ever come from Pennsylvania. I want to move." I wonder now if I'll ever learn to love a thing before I lose it.

A Dying Artist (oo! how dramatic!),

Paul Coleman

## Baducation

Dear Editor,

In his article "Thoughts on Technology and Education" [Autumn], Professor Gordon argues that current technologies in the classroom weaken critical thought, especially pertaining to the student's mind and language. I agree with his conclusions, yet note that a third area requires consideration—relationships in education.

Student-centered learning is the predominant pedagogy in American schools today. Here are a few examples. Remember the Three Rs? They are now Rigor, Relevance, and Relationship; these are the cornerstones of student achievement. Educators reach their highest calling when their focus is the Impact on students' lives, not just Mastery of the content (Kevin Ryan, *The Induction of New Teachers*). At my first job, the department chair observed that an okay teacher is actually great if he is 'good with the kids.' These nebulous qualities and stifling acronyms exemplify current American pedagogy at the ground level.

continued on page 9

# WISDOM AT SIXTEEN

JAYNI J. JUEDES

**A**s the weeks flew by and the semester's end neared, time became precious. My friends and I had started a pro-life group at our high school earlier that year, and now we had driven an hour and a half to attend an educational conference about pro-life issues. None of us wanted to spend a precious weekend passing around pictures of aborted babies, and our selfish pre-dispositions had an immediate effect. Chaos erupted the moment we arrived in the form of typical teen-aged girl catfights between the four of us. Jessica quickly disappeared with other friends, leaving her sister Eileen, our friend Brittany, and me stranded in the hotel lobby. Instantly we decided that she was being a "jerk" and battle lines were drawn. The fights themselves were so petty that the details are long forgotten although I vaguely recall skipping conference sessions to hide by the hotel's pool and play our own inventive version of Dutch Blitz, behavior that later earned a scolding from Jessica for "not behaving."

The situation continued to deteriorate later that evening. During an all-hotel scavenger hunt, each team was supposed to obtain a strand of the conference leader's bright red hair by singing a song. Instead, Brittany simply walked up to the lady and yanked a strand from her head! During dinner the division between "us" and "them" was visible. They were eating their pizza at *that* table, the snobs! Obviously, the only counter action was to form our own table—on the other side of the room. We whispered mean things about them and laughed loudly to give the illusion that we were cooler than they were. The maddening part was that Jessica and her friends didn't even notice. It's impossible to win when the other side doesn't realize they are supposed to be competing. The three of us finished eating quickly and walked around the hotel in an angry haze, eventually ending up outside in the parking lot, reasoning that the fresh air would help our headaches. The hotel ran parallel to a double-lane highway, and I walked along a ridge of raised concrete to the edge of the

parking lot and stared out of the traffic, wrapped up in despondent thoughts. Such a gross amount of teenaged drama had hitherto entered my life only through Hollywood. My reverie was interrupted by Brittany: "Look, homeless people! I'm going to go talk to them," and with a traffic-avoiding dash, she was off and running. Eileen and I stared after her in shock. Everyone knows that you don't talk to homeless people. It's like talking to strangers: a dangerous second only to eating meat from the school cafeteria. A panicked dash quickly propelled my own legs across several lanes of traffic to the median in the road where two women were sitting cross-legged, holding up cardboard signs asking for money. I couldn't just stand and watch my friend get mugged!

As I approached, I overheard them explaining that they were trying to get back to their families in St. Louis and had run out of money. I watched open-mouthed as Brittany dug into her back pocket, pulled out all the money she had and handed it to them. Ashamed of my automatic negative reaction, I looked around. Desperation and the realization of complete helplessness shone from their eyes. One of the women clutched the leash of a small, tan dog. It crouched near her pathetically, its ribs sticking out from under taut skin. I, too, pulled out my wallet. We didn't have much to give, but the women started crying when our money became theirs. "God bless you," one whispered, the tears leaving marks on her unwashed face.

We ran back across the road to where Eileen was anxiously waiting and Brittany quietly explained what had happened. "That poor dog, did you see its ribs?" she asked as we walked back inside the lavish hotel. "Yes," I mused. "They're going to have to spend half that money on food." As the three of us entered the hallway, I looked up and saw several steel dining carts loaded with the remained of the conference's buffet. I stopped and looked at Brittany and Eileen. "Hey! We could ..." but I didn't need to finish.

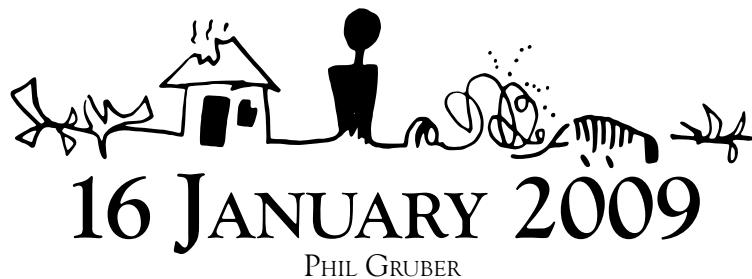


The women cried even more when we covered the grass surrounding them with plates full of pizza and veggies. We almost defied gravity with the copious amount of food we managed to stack on those flimsy paper plates. The little dog grabbed a pizza crust and started chewing on it between growls of possessiveness.

This time we walked across the road. A truck could hit us for all we cared; we would still be happy. As we once again neared the parking lot of the hotel, one of the conference leaders walked towards us. While retrieving a forgotten item from his car he had observed the whole exchange. "That was awesome," he said, looking carefully at each of us in turn. "Do you know what you guys just did? You just fed Jesus out there."

The conference ended, and we all returned home with something important tucked inside of us. The point of the matter is not that we should treat everyone with a cardboard sign as a convenient opportunity for redemption or as salve to cover the guilt of selfishness. Instead, the message is to never get so wrapped up inside yourself and your own mundane problems that you fail to look around and reach out to others. A few plates of pizza probably didn't save those two ladies, but in a way, they did save us. **Q**

*Jayni Juedes is a recent transfer to Grove City College. Her favorite quote is John Russell's, "Sanity calms, but madness is more interesting." At 20, she still can't whistle but at least she finally learned how to run a dishwasher.*



How bad I am broken? How wrecked is my ruin?  
 Like to music writ on burnt staff, ash with no tune.  
 A field's-worth broken glass? A fire-gutted house?  
 The long-shed exoskeleton of a long-dead louse?  
 I'm Hezekiah's Asherah, chaff trampled less than dust.  
 I'm sand swept out to ocean, slopped on continental shelf.  
 Rice paper-soluble, gasoline-inflammable,  
 Bauxite-inedible, castrato-non-nubile.  
 I'm a blood smear on a 'scarpment, three years old,  
 Rot- and wash-lost, a stain that will not hold.  
 I am an isolate remora, a dislodged barnacle,  
 A gypsum pebble rived by flashing blades of nickel.  
 You ask me my self-concept, accord me self-esteem,  
 But for the gracious Spirit, I'm nothing if a dream.

*Philip Gruber is a sophomore English and Communication Studies major. He wrote the poem after a confession of sin on the title date.*

# QUIET INTERLUDE

RALPH HARTMAN

The place really had been getting on my nerves. Three months I had been stationed at Yokohama before my first pay came through. Three months of sitting in the barracks listening to hours of 'bull'; or walking the streets and exchanging smiles with the local populace. So I was really raring to go!—with that pocketful of dough!—ready to tear the town apart! When Will Stinson came over and asked me to go with him to a discussion group that evening at the neighborhood school, I almost laughed in his face. What I wanted to do was to get so roaring drunk that somebody would have to carry me back to camp. I'd waited a long time for that fling!

But, since regular payday was a week away, nobody else had any money right then—and it wasn't too much fun for me to get drunk a 11 by myself. So, I decided to go over to the discussion with Will—and if I couldn't stand it, I'd just cut out and get drunk anyhow. Everybody said that these meetings were full of Communists, and I wasn't in the mood for any argument; I'd waited too long for that night!

I found the crowd much older than I had expected. They seemed to be mainly businessmen—with a few students—both men and women. I sat through as many of the unintelligible, and poorly translated, speeches as I could stand; and was about to scram when Will told me that the individual discussions were about to begin, and that I would be needed to even out the pairings. He made quite a fuss about this, and since the evening was well on its way to going to pot anyway, I gave in. Soon the chairman of the group took me by the arm and led me to a small booth containing a low tea table and two cushions.

The other cushion was already occupied.

Upon it sat a thin wisp of a Japanese girl who smiled at me shyly and began to pour the tea. She introduced herself as Teriko and began the discussion. She didn't look as big as my kid sister; but there was no kid sister in those eyes. They were old, much older than the rest of her. She used

very good English during the talk, and evidently knew much about the evening's question—"The Rearming of Japan." Having lost her family and husband in the war, she felt very strongly on this matter; and I found myself drawn into the discussion.

In fact, I soon found I was relaxed completely, and doing most of the talking. There I was, debating a matter of great importance to this girl—as if I had known her for some time. Why, I never talked this way with my wife! Of course, Carole wouldn't be interested in the rearming of Japan, but I had never been able to draw her into any conversation on subjects of this type. She usually was pretty busy with her clubs and her Sunday School class. Funny how people change after marriage. While we were in college, everything I suggested doing was interesting to her—we enjoyed the same music, plays, movies. But I suppose everybody comes down to earth after the honeymoon.

If only we had some children to bind us together, to give us a common interest—a future to plan for as a family. I couldn't believe that I was the responsible one. The doctor said we were both very capable of having children—it seemed, though, that we had for some reason never found real satisfaction in the physical side of our marriage. Maybe it was my fault at that. I really didn't know.

The deep tone of a gong being stroked in the distance signaled the end of the talk, and at once she was gone. Later, as I made my way to the Beer Hall, I couldn't forget those tired eyes in that young face.

I returned regularly to the discussions—talking with Teriko at every opportunity. Slowly, I extracted from her the story of her rigorous life of the past decade—her sorrow at the deaths of her closest ones—the feeling of despair at her country's surrender, and she only sixteen at the time—her struggle to raise her son throughout occupation. I found myself beginning to sorry for this lonely little girl—as I to know her better, this pity changed to very deep respect.



Many nights I walked to her home with her—as I wanted to find out more about this sad, but enchanting, person. And each evening as we walked through the narrow streets, colored as rainbows by the lanterns of the tiny shops, she became a little more relaxed and gay. I was entranced by her soft, doll-like voice and the manner in which she would bashfully cover her face when she laughed.

I was beginning to hate to say goodbye to her each night, and dreaded the moment when Mr. Kishi would come to the front of his china shop to close the panels. Mr. Kishi was Teriko's best friend now that her family was gone, and she lived right across the street from his shop. He insisted that no self-respecting woman should be in the streets after the shops closed, and always scurried Teriko home like a father.

Our friendship grew stronger with each meeting—and one evening I found myself climbing the steps to her home—watching her being greeted by a chubby, six-year old, whirlwind—squatting through a meal of sukiyaki—and observing the universal struggle to get a small one into bed. If only Carole and I had somebody to care for like that! Maybe—someday. I hope so.

Teriko and I sat beside each other as dusk fell, and silently watched the fishing fleet returning through the breakwater into their watery haven. I saw the last light die out in Mr. Kishi's shop—then I raised my eyes and looked far across the bay, towards my distant home.

Why didn't I feel comfortable like this when sitting with Carole, just sitting quietly here, neither uttering a word. Seemed as if I was always trying to find a way to entertain Carole—to start a conversation. Maybe that was it—maybe that was the difference I was the one who always gave love—who initiated our activities—who tried to make our life together attractive. She always did the receiving—never the giving.

Is this what attracted me to the one I sat beside? Was it the realization that she made me feel confident of

myself—that she could give me the feeling that everything I said, or did, was important to her? In the short time that I had known her, she had given the peace of mind that I had always sought.

Surely, this was a wonderful woman. As I turned to try to tell her how I felt, I found those strong dark eyes gazing into mine, deeply. We sat that way quite a while, each lost in one's own thoughts. Then the distance between our eyes began to lessen—she drew closer, I saw that her eyes were not tired now, but seemed to shine like two tiny entrances to a hidden blaze.

I returned to Teriko every night now; and we would sit and talk of many things, and joke, and laugh—how I loved to hear her laugh. Like a little melody played on a set of toy chimes. And we would frolic with the child—this always brought back thoughts of Carole. I couldn't bring myself to tell Teriko about her—yet. It would be too cruel. This girl hadn't laughed or enjoyed herself like this for years. It wasn't in me to hurt her in any way.

On my days off duty, we packed lunches and sat in the park, and let her boy run wild, or went to a theatre. I remember most the trip we took to Tokyo and the Imperial Palace—it was the Emperor's birthday and a national holiday. My strongest impression came, not from seeing a monarch in the flesh, but from the spectacle of 100,000 people standing in the rain, waving and singing their praises in unison—to the living symbol of their faith!

Yet it was the evenings at home that I enjoyed most, the feeling of being completely segregated from my worldly troubles. Our love grew stronger with each meeting; and for the first time I had the feeling of sharing love—sharing it with a woman the like of which I had never dreamed existed. Through my associations with Carole, it had never occurred to me that a woman could be the aggressor in physical love. That any woman would rather give love, than receive it. I had dreamed of happiness like this, of completely sharing another's life—when everything seemed right and natural.



I don't want to recall our farewell—it was unbearable. I can only remember my promise to return, soon, to her.

I talked for hours with the Chaplain on the boat ride home; his advice was sensible—upon returning home, I should try to forget Teriko and do everything I could to build a happy home life with Carole. But the situation remained cloudy and confused between us. Then the letters began arriving. For months she wrote, asking when I would come, recalling our happy moments together. With each letter, I wavered a little—torn between my love for Teriko and my moral responsibilities at home. If I went back, what would become of Carole? Or my family and its reputation?

As her letters became more and more pleading, and as I remembered the wonderful feeling I always had when near her, I slowly decided that I must return. I wanted to spend the rest of my life trying to make up for those years she had lost—the security and happiness she had never known. And most of all, I needed her—I was nobody without her. She understood me, she wanted me.

I wrote Teriko of my decision to come back—again and again I wrote, but received no answer. Why didn't she write back—was she getting my letters—had she moved? Maybe I had lost her. Finally I wrote to Mr. Kishi—perhaps he would know.....

His telegram I now hold crumpled in my fingers. Again, I smooth it in my palm; and unbelievably re-read the short message:

JOHHNY

TEN DAYS AGO, MRS. TERIKO DIE IN CHILD-BIRTH. VERY SORRY.

HIRASHI KISHI

Slowly, I climb the stairs to the sanctity of my room; I have a bit of praying to do . . .

*Ralph Hartman '58 resides in Bethel Park, Pennsylvania. He served with the 27<sup>th</sup> Regiment of the 25<sup>th</sup> Division in Korea. His first book, Trial by Choice, was released in 2007.*

*continued from page 4*

Student-centered learning should bemuse a Christian educator; shouldn't we be Christ-centered? Shouldn't we ask *how* an relational/educational practice impacts a student's life? Such moral judgments are essential to the 'positive' theory of education that Gordon mentions, the "understanding [of] others and self." There is a Christian truth behind student-centered learning. Christ condescended to relate with humans in our own form, because He loves us. Which of these educational practices was more important: when Paul Kemeny honed my critical thinking skills in Speculative Mind through debates and research, or when he comforted me by wrapping a fatherly arm around my shoulders as we walked through the Inner Quad? Could he do either on the Internet?

Philip Gross '07

# AREN'T YOU EXCITED?!?

JUSTIN OLSON

“A ren’t you excited?!!”

I had just boarded a train in Munich headed for Paris and I was sharing my cabin with a French student my age. After about five minutes of silence, I asked him if he had been in Munich for *Oktoberfest*. He quickly whipped out the two glass beer steins that he had bought and showed me some pictures on his iPhone of his experience amidst the Germans, decked out in *Lederhosen*. We talked for a couple more minutes about what we had both done in Germany. I had just come from visiting my great aunt and uncle who have a summer home in Munich, and he had spent the week with his mother and brother during his school’s break. I eventually found out that he’s a political science major and at that moment he asked the question, “Aren’t you excited about Obama?”

I was finishing up a coffee at a Starbucks in Geneva last October and I started talking with an old woman who was scribbling something on a piece of paper. At the time my friend Jonathan and I were the only people sitting outside, and the fact that an elderly woman with matted hair and an unkempt appearance had sat next to us when the place was completely empty made us both wonder if she needed any help. After acting indignant that I had thought that she might have needed something, she quickly explained that she had chosen the seat because she didn’t want to mess up the areas of the restaurant that had already been cleaned (typical Swiss). After she realized I was American (my accent gave me away) she popped the question, “Are you excited about Obama?” She then proceeded to tell us how thrilled she was that Obama was ahead in the polls. After we said goodbye, I told Jonathan something along the lines of “Even the homeless love Obama!”

You can imagine what it’s like having that question presented to you for the *nth* time in the past five months. I think it’s happened at least a couple dozen times since I ran into the Swiss lady at Starbucks. The first three times

you feel like you’re describing what it’s like to have a summer barbecue in your backyard or how to play American football. But after the tenth time you start to think a little more, especially when your host family smacks a poster of the new President square in the middle of the living room. The intrigue mixed with tickled enthusiasm that accompanies their inquiry reveals something unprecedentedly significant about the 2008 election that has implications not just for how the world sees the United States, but how we see ourselves as Americans.

Everyone’s got something to say as soon as I give them a “real authentic American response” to their “rhetorical” question. Although their comments vary, everyone I’ve talked to is in no way hesitant to express their opinion of the import of the election. Perhaps the most frequent response is “You’re finally going to get out of Iraq!” Some have recently congratulated me on the commitment to close the detention center of Guantanamo Bay, while others are glad that our country is “finally” going to do something about our health care problem. Most of these would-be White House staff members can’t help but reveal their latent cynicism: it comes with the territory, what can you say?

One of my friends told me that in the past, French media only talked about the United States when war, global warming, and movie actors were on the scrolling marquees of their public television stations. But now that the United States has elected a black president, the world, and especially the French, are really paying attention. The French have yet to reach their 50<sup>th</sup> anniversary as a post-colonial country. Their civil rights movement, so to speak, ended with all-out war, where both sides shared the blame for merciless acts of killing and torture. It is not a stretch to say that the Algerian War for Independence was a civil war. The effort to keep the North African colony as an actual part of France resulted in an eight year conflict that eventually saw Algerian Independence in 1962. As the wounds



continue to heal, the assimilation of the steady stream of North African immigrants remains one of the top areas of concern for French domestic policy. Trying to find a way to retain French values while attempting to accommodate the *Maghrebins* has, in many cases, proven futile as cultural bifurcation persists. Dozens of my friends have told me that France is simply just not ready to have a *Maghrebin* president. For the first time in many years, the French admit that the United States has taken a step in which they have yet to follow.

**A**s I watched Obama's November 4<sup>th</sup> acceptance speech on YouTube from my bedroom in France, his own description of America made plain, "It's the answer spoken by young and old, rich and poor, Democrat and Republican, black, white, Latino, Asian, Native American, gay, straight, disabled and not disabled - Americans who sent a message to the world that we have never been a collection of Red States and Blue States: we are, and always will be, the United States of America...This is your victory!" Equality and integration really aren't problems anymore.

The night I watched that speech, after staying up way too late the previous night trying to see the election results in spite of the time difference, I probably wasn't myself. I had just listened to a bunch of good ol' American folk songs with the other American living with my host family. That music put me in a state of nostalgia: sitting beside a campfire roasting marshmallows on a cool summer evening, out in the sticks of Indiana. I could see myself at home in America. But it wasn't just nostalgia. When you're trying to live in another country, your cultural quirks as a foreigner are magnified times ten. Experience that for about three or four months and you start to wonder if the human psyche is capable of cultural adaptation. So, yes, I put myself in a vulnerable position with *Foggy Mountain Breakdown*. As the final words of "and God bless the United States of America" were drowned out by the roar of the cheering Chicago crowd, I felt proud to be the foreigner in France.

In Europe, public opinion of the US changed overnight. I could now point to my country and say, "Look at who we are. Look at what we can do," without having to feel like I needed to apologize for some of my country's actions. In America anything, is now possible and we are finally one nation! After that night, each time someone asks me "aren't you excited that your country elected Obama?" my response isn't just me telling them about my country. As I respond, that same swelling pride returns and drowns out my attempt to give them a more "objective" answer . . . or, at least that's how I feel.

As we see America relishing the fact that it is the melting pot and that hope can truly conquer all, I can only tell you that the sight of this is intensified when you see it from overseas. For conservatives, perhaps it is discouraging, if not in some cases unnerving. Yet, Democrat or Republican, the average American firmly adheres to the values that were celebrated in Obama's acceptance speech. Who can argue that America's ideals are not "democracy, liberty, opportunity, and unyielding hope?" These are not partisan values, but rather are distinctly American values that have only intensified as we see the office of the presidency occupied by a man whose race was subjected to shameful intolerance and degradation several decades earlier. When you see a black man become President this side of the pond, especially during times of financial crisis, you start to believe that America really is the only place where you can live the "American Dream."

As those sentiments of approbation returned when I watched the inauguration in January, it was no longer just a moment of reverie. The massive crowd, two million strong, that had braved the wind and cold to welcome the call of a new era of hope and restoration provided another illustration of what America has become. We are indeed one people, and as one we have placed our hope in the very ideal that has been the secret to our greatness. As individuals who have always called it gospel to say that anyone can brave the road from rags to riches and reap the fruit of their



labor, we have placed our trust in the idea that one man can take a nation that is broken and dissuaded and craft a new beacon of resolve and prosperity for all the world to see. For America, Obama's election is just the beginning. If a black man in the Oval Office is now a reality, don't we as a nation have the right "to choose our better history"?

The blessings of democracy and liberty are real, and yet, the audacity of hope in the human ability to forge its own destiny in the face of a fallen world remains a curse. I will not hesitate to affirm the blessing it is to see hatred laid aside and to see the real effects of the racial healing that has occurred in our nation. Yet, our blessings will only be fully recognized when we "set aside childish things," and realize that the source of our blessings is not our resolve, our work ethic, our responsibility, our sacrifice, or our hope. As we face a world ruined and ravaged by the effects of sin, we must bless the Lord for his gracious gift of peace and tolerance to our country, one of the ways in which he is preserving the world for the sake of Christ and His people. The Obama era marks an era of true blessing as we are able to witness the tangible evidence of what happens when tolerance replaces hatred. But the next time someone learns of my nationality for the first time, I pray that I won't lose sight of the fact that I am first and foremost a creature dependent upon his Maker for the hope of a real restoration and peace. That should make me a little excited. Q

*Justin Olson is a junior History and French major currently studying abroad for a year in Grenoble, France. Hiking and skiing in the Alps are among his many favorite pastimes during his stay in France.*



## VANITAS

ANONYMOUS

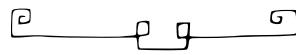
Empty cars in  
An empty parking lot  
a journey made, but  
now over.

The emptiness of the world

Fills my heart,  
Yet biting air

freezes  
the very thought in me.

Silence  
echoes through the air, filling  
the emptiness of the world. To  
begin  
again.



# LOST TIME

HÄNNAH SCHLAUDT

**R**ight-brained people tend to lose track of time. I got the worst of it. Once, I lost track of a whole school year.

It was the autumn after Nate and Eric—identical twins—were born. They were the sixth and seventh in our lineup. I'm the eldest. And, yes, I was homeschooled.

Homeschoolers like to joke about that stereotype we find ourselves slipping into—the big family, conservative Christian worldview, the binge reading and underdeveloped social skills. We're odd, for sure. Maybe it's that we're often old-fashioned and have a zest for learning. After all, the year is 2003, I'm wearing a calico circle skirt my sister made, knitting a sock while reading Dickens, and am convinced that babysitting five kids is easy work.

That autumn I was fourteen. Many were the mornings when I would glance at my daily allotment of schoolwork on mom's calendar, grab my books, plop down on my bunk bed, and . . . not study. Biology tumbled to the floor to make way for my sketchbook. Reading a page or two in the history text would remind me that I hadn't finished that biography of Knox tucked under my pillow, and soon I would be lost in Scotland. The dull roar of big family life fades when you're lost in another world, and I devoured book after book, scribbling on page after page in my sketchbooks.

There was an old maple tree outside my window, and I would muse on the light dancing in the leaves, grasping at glimmerings of ideas and trying to shake some sense out of them. The woods, the meandering creek, and the clear-eyed rain outside my window enchanted me. There's a great deal of Anne of Green Gables' "scope for the imagination" in the Virginia woods, and my dreaming swept me into strange new worlds as life outside my bedroom—or "the black hole," as my sister called it—proceeded on as usual.

My life had two parts, the dream world of my books and my room, and the perpetual cycle of responsibility and busy-ness that comes with being part of a big family. I would retreat to my book world, and then dive into the midst of family life when crisis came. With infant twins in

the house, Mom was weary and sleep-deprived, and I was her right hand helper. Home economics class is to public school students what this year was to me. Mom and I would switch off responsibilities—I would study while she taught the younger children, and then I would play mom and fix supper and supervise my siblings so she could nap or run errands.

Between my laziness and my family's demands on my time, the necessary evils of my high school curricula—arithmetic, science, grammar, et cetera—slipped quietly through the cracks in my schedule.

"How much schoolwork did you get done today?" the principal of the Schlaudt Family Academy would ask before shooing me to bed so he could visit with Mom.

"Not enough," was my evasive answer. Yet I couldn't escape accountability. The descending doom of restrictions on my freedom would inevitably become reality until I had caught up on my assignments. Outside activities—youth group, time with friends, phone—would all be removed until the math was done. But my heart wasn't in my algebra, so I often chose to be a homebody rather than to finish the schoolwork. I was absorbed in myself and my own little world of dreams and books.

As the fallen leaves piled up under the trees and as frost and bitter wind replaced the November rains, I changed as well. The words that crowded my brain grew more and more densely packed, as I read book after book after book on my lofty bunk bed perch. I would tumble down from there around 4:30pm each day and pitch in with the fixing of supper, chattering all the while at Mom about the ideas whirling in my mind. Mom would smile and nod, give the babies some cheerios to munch on, and I'd chatter on until supper was made.

So the year passed. I read and was inspired. I thought. No longer was I a child consumed with the inner workings of home life and mere desires, but fresh thoughts—old ideas now new to me—filled my waking hours. I kept my hands



busy sketching and helping with the housework, but my mind was far off from the mountain of laundry and the simmering potatoes.

I have found lessons are best learned outside of the classroom. I squandered that school year, and in my senior year, I had to double up on subjects to make up for the lost time. But what I learned in the “wasted” hours was more valuable.

That was the year I learned to love my family best, and to value my mother’s friendship and my father’s counsel. That was the year I became a second mother to my twin brothers. Now, they send me notes in the mail, written in backward, crooked letters in fat, orange crayon. They’re six years old.

All the reading I did in my stolen time has paid off. The Great Conversation is more familiar to me than it would be otherwise, because I immersed myself in so many classics of great literature that year. Ideas still delight me—and new ones fit with the bigger context in my mind better than they would have if I had only done the assigned textbook reading.

I lost that year—technically. But ideas and real life found me and set my perspective on priorities off-kilter from the mainstream. My life is more than my transcript. Q

*Hannah Schlaudt sometimes consorts with fairies. Labeled as a sophomore English/Christian Thought major, she's really an ordinary girl who knits a lot and likes small children. In her spare time she chases hats, climbs trees, slides down banisters, and tries to stand on her head.*



## THE FULLNESS OF TIME

ERIN N. THOMPSON

Over the kingdom of man

(In those days)

Ruled Caesar Augustus,

Who spoke upheaval

With one audacious decree—

“Let the whole world be registered”—

But knew not what he did,

Nor the great price,

Above the value of the whole world’s taxes

For which he rearranged men

And history,

Of one small pearl overlooked

Amid the counted masses summoned

By unheard decree to where

(In those days) dawned the incalculable

Kingdom of God.

*Erin Thompson is a senior English major who typically exceeds all writing assignment word limits and is not sure how she came to write a single sentence poem. She hopes that someday the way God’s design utterly confounds human wisdom will leave her not simply less verbose, but speechless.*

# TECHNOLOGY AS MAGIC

WILLIAM A. ROSS

*Technology as Magic:  
The Triumph of the Irrational*  
Richard Stivers  
Continuum, 1999. 240 pp.

Stivers' book examines the concept of magic, a seemingly superstitious, quasi-religious rite, and technology, the rational, effective scientific process or product. The main idea of the book is that as humans we have a natural inclination to desire miracles or magic of some kind. There is certainly an aspect of significance to this potentially abstract concept. Stivers suggests that when society loses sight of the transcendent and mysterious aspects of its own humanity, which inevitably occurs in a technological society, and sacrifices itself to the gods of technological practices, formative parts of meaningful life are lost. Losing a sense of awe and fear of the transcendent alters religion entirely, as self-help and quick-fix techniques replace methodical, steadfast faith in a God who is beyond our understanding and worthy of our fear. Stivers cites as an example an advertisement for an airbag that claims, "At 60 miles per hour a prayer is too slow." Clearly, society's faith in the power of technology has triumphed over faith in God.

Stivers more closely defines magic as man's attempt throughout history to somehow influence all-powerful nature to his benefit. With this in mind, Stivers proposes that over the ages, as rational technology has developed it has come to take the form of magic, and so our use of technology has become increasingly irrational in its application to incompatible aspects of life. Stivers convincingly argues this largely theoretical idea, however, and relates it to a number of practical implications for society, manifested in three chronological milieus of history, as developed by Jacques Ellul. The milieus of nature, society, and technology form the environments in which "humans face their most formidable problems and from which they derive the means of survival and the meaning of life." In each, the power of a certain milieu is "harnessed for human ends," and the

practices of so doing influence and carry over to the next milieu. For example, in the second milieu of society, nature is anthropomorphized, or read through human terms, carrying over from the first milieu. Likewise, in the technological milieu, humanity is reified into a technological version of itself, reflecting the former values of the milieu of society .

Moreover, in the milieu of technology, society perceives technology as more powerful than nature, and therefore in some way, more sacred. Intrinsically, what is most sacred to a culture becomes the recipient of "tacit veneration," so now nature becomes less valued. In this attitude, all of life comes under the domain of technology, yet the author maintains that "not all of human existence is so readily subject to [it]." At a certain point, technology is employed in enough areas of human existence so as to "destroy the sense of mystery that historically seems essential to human existence."

Society perceives technology as a self-fulfilling prophecy, or a placebo. We have increasingly stronger faith in technology and technological practices to the point that society has created many "imitation technologies" that function as magic. This tendency Stivers has derived from Ellul's concept that in a technological society "everything becomes an imitation of technology," and technological utopianism becomes the end of society, a vision which Stivers accuses television and advertising of promulgating.

Stivers points out several ways that this utopianism manifests itself in contemporary society. Among them are psychological and administrative or managerial practices, which aim to bring humans into line with technical progress. These psychological practices are a manifestation of technique morphed into magic, and employ "dramatized information" to be effective. These practices are "New Age



and . . . concerned with self-transformation," represented by self-help groups, Eastern religion, meditation techniques, sales, human relations, management, therapy, how-to books, and consumerism, to name a few. These groups mostly regard the universe as continuously changing, thus objective knowledge and morality are personal, situational, and subjective.

The technological approach of managerial practice takes the form of scientific and humanistic management, which primarily use statistics as a means of coordinating people. Techniques go by the name of strategic planning, cost-benefit analysis, and systems analysis. These measure performance, measure employee work interactions, and predict the future by reducing much, if not all, to statistical information, which becomes the "indicator of organizational success." Stivers emphasizes again the self-fulfilling prophecy effect here, where any organization's success is attributed to its statistically informed processes.

Stivers argues methodically and convincingly in *Technology as Magic*. At times his use of "magic" became slightly nebulous, yet for the most part he conveys his meaning clearly. Stivers digs deeper than Maggie Jackson, for

example, journalist and recent author of *Distracted*, into the tendencies of technological society, using a more sociological approach of examining what is fundamentally changed in our human selves individually and collectively by technology. Both Stivers and Jackson argue that technology (and technique) tend to replace either the ability or inclination towards deeper, more meaningful existence. For Jackson, our distractedness prevents us from focusing deeply on the more weighty matters of life, while for Stivers, technology assumes the form of magic and displaces the mysterious side of life by attempting to reduce all to information.

Stivers potently warns that if society is transfixed on the magical properties of technology as a cure-all for its ailments, if the promise of technological utopianism continues to be broadcast, then the concept of a sacred aspect of humanity, the recognition and treasuring of the *imago dei*, will be lost. **Q**

W. A. Ross is a senior International Business major who loves the puzzled looks he gets for not bringing his laptop to class (how could he ever do his work correctly?). In addition to writing, he also enjoys coffee, surfing, Brahms, and technology bashing. He plans to attend seminary, with an eye towards teaching.

# DISTRACTION IS BAD FOR YOUR BRAIN

TAYLOR KNIGHT

*Distracted: The Erosion of Attention and the Coming Dark Age*  
Maggie Jackson  
Prometheus Books, 2008. 327 pp.

**I**t is no small irony that Maggie Jackson's own writing style illustrates the negative effects of the electronic communication technologies she decries in her latest book, *Distracted: The Erosion of Attention and the Coming Dark Age*. Because she is a journalist and writes for a popular audience, she uses a narrative structure built around anecdotal digressions. Though her style only illustrates our culture's inability to give attention to sustained argument, her points are all pertinent and her message is one we had best not ignore.

Jackson does not deny that technology has the potential to make us smarter, but she suggests that this potential has only proven actual by giving us a narrow sort of intelligence. Addressing communication and entertainment technologies specifically, she argues that because these technologies distract us from real life and cause our brains to function in an ever frenzied state, they actually hamper us from attaining a more broad type of intelligence that leads to wisdom. This intelligence is found through intimacy with our fellow man and through sustained thought. In destroying our ability for prolonged attention, our relentless, multitasking, virtual lifestyle destroys any hope for wisdom and intimacy.

Of course, we all know that jingling cell phones, omnipresent iPods, and the "You've got mail" icon distract us from our present tasks or conversation. This is part of the world we live in and indeed our brains have adapted so that we can multitask with greater efficiency. But if our brains have become multitaskers, have they in turn given up some more worthy talent? Is distraction bad for us? The importance of Jackson's book lies here.

Using recent neurological studies, Jackson suggests that distraction has led to a real loss in the brain's ability to focus for a sustained period of time. Our modern lifestyle shatters our capacity for what neurologists call "Executive" attention—the power to see the big picture and to make decisions by considering long term happiness over immediate gratification. When multitasking consists of two or more things that require the active attention of the brain (instant messaging while talking on the phone, for instance), studies have shown that it incapacitates the brain's Executive attentional abilities in the future. The brain can be trained to multitask, but often at the expense of deep thought. The brain is ever malleable. It is always ready to be altered for the better, or for the worse.

Through a distracted lifestyle, real interaction with others and with nature becomes revolting. We lose not only our ability, but also our desire to give attention to real things. The real remains trapped in the filth of physicality and ever evades our controlling hand. Confronting each other face to face, we expose our own filth and awkwardness and must deal with the alien stench and spontaneous, unwelcomed judgments of another. When we have the opportunity to feel all the psychological benefits of relationships without dealing with their physicality, we take it. Such is the utopia that technology sets before us.

This is Jackson's most important insight—not only that we cannot sustain our attention, but that we have no desire to sustain it. We can strive against inability, but striving takes volition, and Jackson has rightly noted that we as a culture do not even have the will to develop our attentional capabilities.



The virtual and mediated relationships that the internet provides on Facebook, MySpace, internet dating sites, etc. give us a utopian experience in which we don't have to deal with the problems that real relationships entail. We are distracted from that which is present by that which is mediated because of this virtual utopia. The web provides endless possibilities and therefore endless escapes from relational difficulties. Essentially, Jackson argues that people choose to electronically mediate their relationships because it is safer and they don't risk being hurt or being forced to live with the consequences of their actions. Virtuality therefore feels better, and people begin to wonder why they would have a few actual relationships which are always painful, when they can have hundreds of virtual relationships which always feel pleasant.

The problem, it seems, exacerbates itself. As we distract ourselves we lose the desire and ability to give attention to a friend who is physically present. As we lose the desire to give attention to the real, we seek more distraction, furthering our inability to give attention to real things even if we felt the sudden urge to do so. *Distracted* may be the kind of book that will give us that sudden motivation that can knock us out of that vicious circle. If our brains are as willing to adapt as neuroscience suggests, regaining our attentional abilities is far from a hopeless cause. Q

*Taylor Knight is a senior at Grove City College distracted by the endless possibilities set before him, including what he should include in this bio.*

## COME IN FOR SOME GRACE

MALLORY WILHELM

*Home*  
Marilynne Robinson  
Farrar, Straus and Giroux, 2008. 325 pp.

I took it as a given that contemporary novels must be mainly about sex—until I read *Home*. In this quiet story of middle and old age in a tiny Iowa town, Marilynne Robinson probes the less sensational, but just as profound, themes of family, forgiveness, prayer, grace human and divine, and (of course) home. There are practically no scene changes, and only three principal characters: thirty-eight-year-old Glory Boughton, her dying father, Robert, and her prodigal brother, Jack. Glory and Jack, though both disillusioned by life in the harsh outside world, return to the house of their childhood for different reasons: she to care for their father, a retired Presbyterian minister, and he to take refuge from his own troubles. As the three of them live together for the first time in twenty years, they deal with every matter of the soul, from predestination to judgment to the love that keeps no record of wrongs. This is a story not of *eros* but of *agape*.

Robinson (who won the Pulitzer Prize for *Gilead* in 2004) breaks from the trends of contemporary fiction not only in subject matter but also in style. While many of today's novelists manage to distract us with sentences too obviously witty or beautiful, Robinson writes with an unpretentious grace, a subtle eloquence unspoiled by self-consciousness. In no other recent novel will you meet such a happy marriage of tone and content—the words on the page seem to spring from the characters' very souls. The language is at the same time unremarkable and utterly, wondrously singular, as is every human soul. *Home* is realism rescued from despair by a permeating awareness of the goodness, sometimes gentle and sometimes terrible, of the Lord. Q

*Mallory Wilhelm '08 is pursuing an MA in English at Penn State. Her besetting temptation is to devour novels, no matter what she's actually supposed to be reading.*

# SLAUGHTERHOUSE BLUES

BARTON WILLIS

*Friend, wherefore art thou come? (Matthew 26.50 KJV)*



...Richard Farraday is dead.

Past Main Street the procession slowly broke apart and dissolved into the solvent city.

Alas, poor Richard, I knew him, apparently.  
Weak coffee in a corner café.

A woman a table away whispered, "They rub the rims with cyanide.

Take with a straw," and sucked at her tea.  
The waiter brought transparent liquid  
I chew a cigarette instead.

The sky clots. The last stragglers depart.

Richard, he knew the weather.

Evening light falls on the hearse  
As it skirts the corner. When the streetlights come up, no-one notices. They meander along the city-aisles to wherever.

Carefully lit boys venture into the air  
trawling for attention. Under umbrellas  
businessmen go about watching their shoes.  
Lovers belay along the sidewalk.  
The mourners make a point living noise.  
Nobody's looking.

In a window above the theatre I see  
a flickering screen,  
spotlight bright in a dark room. It goes:  
Our billy-goat bearded euloger arrives home,

kisses his wife once on the cheek,  
throws his pocket change along,  
and slumps before the news shows.  
Richard's half-way in the loam.

As the hours file into night the thunder clamps down  
and the storm settles in for good.

Poets give the thunder speech,  
Soldiers tell it sounds like shells,  
Richard, you'd say the thunder thumps  
like dirt on wood.

I can scarcely tell...

A man goes past the café window,  
heavy-brained, heart bent into shapes  
he cannot describe, looks to the glowing  
sky in disbelief.

The rain tears the banners, the floats, drowns the ticker-tape.  
Toward the river—hounded, gun-shy, running—he.

*I went to bed last night, a-feelin' mighty strange.  
People, I went to bed last night. You know I was feelin' mighty strange.  
When the morning light woke me,  
knew the whole world had changed.*

Barton Willis is a super-senior English major, who, in the words of P.G. Wodehouse, occasionally sits down at a typewriter and curses a bit. Case in point above.

# SCIENCE HUMBLED

ANDREW BRINKERHOFF

For most of us, the essential character of science was laid out in grade school and has been little altered since. The foundation of science is, as we all know, the scientific method. A scientist notes some interesting phenomena, proposes an explanation, and then tests his hypothesis. If the experiment disproves his hypothesis, it is rejected or revised. If the hypothesis is confirmed by experiment, it becomes a theory, and with enough testing may even be elevated to the status of a law of nature. As scientists experiment and theorize over time, their theories and laws combine and are refined to form what we now know as science—how the physical, measurable world operates.

Not all those who measure and theorize, however, produce real science. Many have speculated on the nature of things without sufficient evidence, producing theories that range from the spurious to the ludicrous: the bodily humors, geocentrism, Aristotle's mystical "tendency to fall," and the four classical elements, for example. Thorough scientific investigation eventually disproved these primitive beliefs, which is why we now know that there are dozens of elements and that the earth revolves around the sun. The history of science, then, involves the objective investigation of natural phenomena, producing scientific theories which displace ignorance and add to our body of knowledge. Galileo leads to Newton leads to Maxwell leads to Einstein leads to Dr. Wolinski at Fermilab. The process appears simple and inarguable.

This was the view of Thomas Kuhn as he studied physics at Harvard in the 1940s. While reproducing old scientific experiments in class, however, he began to question the dominant view of how the physical sciences progress. An intensive three-year study of the historical development of science convinced him that the standard view of science history was critically flawed. In particular, he found it impossible to distinguish the "scientific" part of old beliefs about nature from those beliefs which historians labeled "superstitious." Most discarded scientific theories were "neither less scientific nor more the product

of human idiosyncrasy than those current today."<sup>1</sup> These disproven beliefs were at one time widely accepted by the same scientists *and by the same criterion* as other theories which we continue to acknowledge. Thus, we call the bodily humors "superstitious" but the circulation of blood "scientific" simply because the latter comports with our current understanding of nature. If scientific communities have acceded to completely "false" theories of nature based on physical observation, how did they come to change their beliefs? This question prompted Kuhn to investigate the history of how science progresses. In *The Structure of Scientific Revolutions*, he proposes a radically new approach to understanding how scientific knowledge is obtained, and how it changes over time.

First, a field of science will make little or no progress until its practitioners agree on some basic tenets. In describing the state of optics before Newton, Kuhn notes: "being able to take no common body of belief for granted, each writer on physical optics felt forced to build his field anew from its foundations . . . though the field's practitioners were scientists, the net result of their activity was something less than science."<sup>2</sup> What Newton provided was a "paradigm," which "defines the legitimate problems and methods of a research field,"<sup>3</sup> thus directing scientists to problems they have good reason to believe they can solve. This is a vast improvement over the methods of Francis Bacon and others who, having no overarching theory, could not distinguish between phenomena which are simply explained, such as heat produced by friction, and those which are more complicated, such as the warmth of dung heaps.

Scientists who commit to a paradigm are engaged in what Kuhn calls "normal science." What this implies for scientific practice, however, diverges from our preconceived notions of what scientists do. If there is a single accepted theory that applies to a limited set of natural occurrences, the purpose of experimentation is not to discover new things,

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1 Thomas Kuhn, *The Structure of Scientific Revolutions* (Chicago: University of Chicago Press, 1970), 2.

2 Ibid., 13.

3 Ibid., 10.



explain strange phenomena, or even to test some theory of the researcher's own devising. Rather, the scientist aims to find those things in nature which most precisely correlate to the paradigm. Kuhn calls this "paradigm articulation." It involves cataloging phenomena which seem to belong to the field of study, testing them against predictions derived from the paradigm, and determining physical constants and quantitative laws. The purpose of all this experimentation is to give the governing theory a more defined scope and more precise application.

Interestingly, the testing of paradigmatic theory against nature is almost never aimed at demonstrating the theory as true or false. Indeed, Kuhn notes that research inevitably produces some results that contradict the theory. Often these anomalies induce no major change in the paradigm, even if they are persistent over a long period of time. Scientists accepted Newton's laws for sixty years before their apparent incompatibility with the orbit of the moon was resolved, and a measurable discrepancy in the motion of Mercury would not be understood until the introduction of general relativity by Einstein. Most of the time, scientists are better off ignoring contradictions between nature and theory, for "the scientist who pauses to examine every anomaly he notes will seldom get significant work done."<sup>4</sup> An anomaly only receives extended attention if it obviously contradicts a central tenet of the paradigmatic theory. But no matter how glaring the discrepancy, it will never result in the rejection of a theory unless an alternative theory is proposed. This is the beginning of a scientific revolution.

The displacement of a paradigm can only come when the awareness of critical anomalies has cast the field of science into "a state of growing crisis." As data on the motion of the planets forced Ptolemaic astronomers to add epicycle upon epicycle, it elicited dissatisfaction such that "by the thirteenth century Alfonso X could proclaim that if God had consulted him when creating the universe, He would have received good advice."<sup>5</sup> Yet it was not until two centuries later that the cumbersome system was discarded. What could induce astronomers to retain such a poor theory?

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<sup>4</sup> Ibid., 82.

<sup>5</sup> Ibid., 69.

Quite simply, there was no alternative, and "to reject one paradigm without simultaneously substituting another is to reject science itself."<sup>6</sup> Any theory is developed and accepted because it has some demonstrable predictive power. Thus, to discard a paradigm without replacing it is to necessarily lose predictive power. Ptolemaic astronomy had obvious problems, but no one could even consider rejecting it before Copernicus proposed an alternative theory.

Some might be tempted to view the displacement of one paradigm with another as a natural step in the progress of science. Either the new paradigm is replacing an entirely inferior one, or it is simply expanding on the previous one, incorporating the previous theory into its own. As it turns out, both of these plausible theories are incorrect, and for related reasons. First, it seems natural that a theory would be displaced by a more accurate or expansive theory that would retain many of its essential theorems. After all, the world hasn't changed; all that has occurred is a minor articulation of theory. A textbook example of this would be the transition from Newtonian to relativistic mechanics. For most objects, which move slowly compared to light, the predictions of the two theories are equivalent, so that "Newtonian theory seems to be derivable from Einsteinian, of which it is therefore a special case."<sup>7</sup> Indeed, all the data which supported Newtonian mechanics still does; only by extrapolating beyond the realm of experimentation did the theory prove inaccurate. But Kuhn points out that such extrapolation is the essence of any scientific paradigm: to deny it "prohibits the scientist from claiming to speak 'scientifically' about any phenomena not already observed."<sup>8</sup> The goal of a scientific theory is not simply to match current observations, but to make predictions, governed by physical laws, for situations we have not tested experimentally. It is in these laws, postulates about the fundamental nature of the universe, that successive paradigms cannot be reconciled; for Newton, space and time are immutable and linear, while Einstein's universe is populated with space-curving mass and time-altering speeds. This incompatibility

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<sup>6</sup> Ibid., 79.

<sup>7</sup> Ibid., 99.

<sup>8</sup> Ibid., 100.



is demonstrated more clearly in the shift in experimental focus that results from a scientific revolution. Since experiments pursue precision and detail, it is the limiting cases and tiny discrepancies between successive theories that will be probed most closely, phenomena which are accurately described by the new theory alone. New paradigms, then, displace old ones *completely*, both in terms of formal laws and in scientific practice.

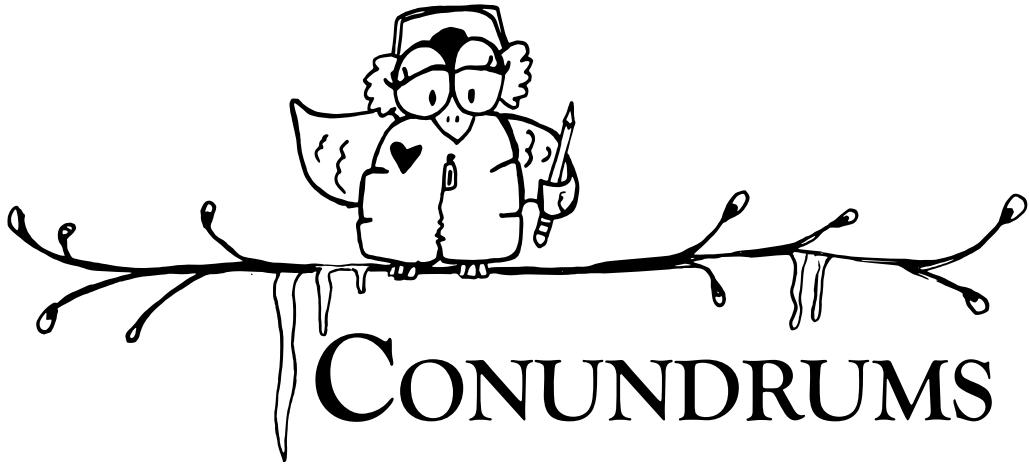
Surely, then, this complete displacement indicates the necessary superiority of the new paradigm in describing nature. In reality, we must be a bit more circumspect in trumpeting a new paradigm. In the area of crisis that plagued the previous theory, the new one must indeed show itself superior, and it must retain some generality in explaining various natural phenomena. But the sets of physical problems addressed are far from identical; as mentioned before, the focus of research under the two paradigms will diverge greatly: "Some old problems may be relegated to another science or declared entirely 'unscientific.' Others that were previously non-existent or trivial may, with a new paradigm, become the very archetypes of significant scientific achievement."<sup>9</sup> Note that this shift in focus is dictated by the theory itself, not by some characteristic of nature. Thus, an old theory may contain scientific observations which, despite their predictive power, are discarded by the new theory and not replaced. Using phlogiston theory (an extension of the four classical elements), chemists had been able to explain why certain substances were metallic, acidic, and combustible. When Lavoisier's theory of oxygen-driven combustion displaced phlogiston theory, it failed to make any predictions about other phenomena, such as acidity. In this area, predictive power was lost. Likewise, Newton's theory of innate gravity halted efforts to explain the force mechanically, only to have the discussion reopened with Einstein's theory of general relativity and the current search for the graviton. Thus, the displacement of one theory by another does not prove that it fits nature better as a whole. Rather, a new paradigm is superior in explaining the set of natural phenomena it defines for itself, a set which will differ from that of the paradigm it replaces.

If we accept Kuhn's interpretation of the history of science, one question remains outstanding: why, in 16 years of schooling, is one likely to never come across it? Why do textbooks present an image of cumulative science progressively pushing back the frontiers of ignorance and unscientific speculation? The answer lies in the definition of normal science: it operates based on the assumption that its own theory is the distillation of the laws of nature. A theory cannot be articulated further unless it is presumed to be correct. Textbooks exist to train scientists who exist to articulate the current theories. Thus, insofar as previous theories disagree with the current paradigm, they are useless; insofar as they appear to agree with the paradigm, or have provided some of its terminology, they will be regarded as its predecessors. Thus we hear Democritus was the first to propose the atom, even though his reasoning and methodology bear no resemblance to that of Dalton or of Schrödinger. It is a useful lie, based on the even more useful lie that our current scientific position is secure and permanent, and thus good research will demonstrate its correctness with ever greater precision.

Kuhn's thesis was revolutionary when it appeared, and continues to be highly relevant to a proper understanding of science. His system is beautiful and paradoxical: only through total commitment to a theory and tireless efforts to demonstrate it precisely can the minute details of physical reality emerge and, in the end, blow the whole theory to bits. But out of seemingly disastrous crisis emerges a new theory, simple and elegant where the other was impossibly convoluted. This new theory draws our eyes to new phenomena; we glimpse from a new vantage a part of the ultimate, unified order of God's infinite creation. Finally, Kuhn suggests a more humble attitude towards the claims of science, and demands that we respect those who came before us. We do not hold the keys to all knowledge, and the natural philosophers of times past were not ignorant rubes. In any age, we can see only a part of the master plan, and that only through the eyes we were given. Q

*Andrew Brinkerhoff is a senior Physics major. What is good in his writing is seldom original, and what original is seldom good.*

<sup>9</sup> Ibid., 103.



### Picky Pet Picker

Imagine you are looking for a pet. You are picky. You want a pet with brown hair, but it must be at least two years old. You want a dog, but if no dog matches your criteria then you are willing to buy a cat.

Fortunately, last week you picked up a flier from the neighborhood pet store. It contains the following information about animals in the store:

The store had two hundred pets in stock (at the time you picked up the flier)  
50% of the pets are dogs  
35% of the pets are less than a year old  
30% of the pets have white hair  
10% of the pets are birds  
10% of the dogs have black hair  
The same number of dogs and cats have white hair

Finally, the flier warns that 10% of the pets in the store are sold each week, so you can only expect 90% of the animals described above to be available still.

*Based on this information, what is the largest number of pets in the store that could possibly fit your criteria?*

There will be a \$20 prize for the first person to demonstrate a correct solution to Bill Robinson (robinsonwm1@gcc.edu).

### Last issue's Math Palindromes Solution:

Congratulations to Reba Collipp for being the first to solve the Conundrum. Her solution for the final sequence was:

$$\begin{aligned} & \{(1-2)+(3-4)\}/[(5-6)+(7-8)] \times (9-10) = -1 \\ & \{(10-9)+(8-7)\}/[(6-5)+(4-3)] \times (2-1) = 1 \end{aligned}$$

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