OCCASIONS ONLINE

A Collection of Prize-Winning Works Produced by Students in the Program for Writing & Rhetoric

Copy-edited by Dr. Peter Kratzke

© University of Colorado Boulder
TABLE OF CONTENTS

Lower-Division Prize Winners

Raven Emmons, Personal Narrative Category
“The Tick-Tick Engine” ................................................................. 1

Gookjin Jeong, Inquiry Category
“The 1997 Asian Financial Crisis: An Investigation into the Economic Impact on South Korea and its Policy Responses” ................................................................. 3

Tess Lauricella, Analysis Category
“Woolf’s Gender Portrayal” ............................................................ 10

Alexandra Olivo, Argument Category
“99 Problems for Danger Mouse: A Helter Skelter Moment in Music History” ................................................................. 12

Upper-Division Prize Winners

Richard Bohm, Business Writing Prize
“A Responsible Look at Economists in the Finance Industry” ................................................................. 17

Alexandra Evans, PWR Diversity Writing Awards
“Makeshift Patriot” ................................................................. 20

Breanna Hinricks, Upper-Division Arts & Sciences Prize
“Murder, Abuse, and Morality in Trifles” ................................................................. 24

Nicole Look, Mackson Prize
“A Nonlinear Dynamical Analysis of Asymmetries in Runners with Unilateral Transstibial Amputations” ................................................................. 27

Amy MacNair, Upper-Division Creative Nonfiction Prize
“Expose” ............................................................................................ 33

The Tick-Tick Engine
By Raven Emmons

The tick-tick engine would pull in; he’d pull the E-brake before the tires were finished rolling, and the truck would surge forward, then backward, and then come slowly to rest. He never drove a shiny truck. There was always a heap of trash—soda bottles, cigarette boxes, to-go containers, and gummy worm cellophane envelopes—that I would sink my feet into to reach the floorboard. They had the airy resistance and delicate scrunch of a children’s ball pit at a fast food joint.

But I wasn’t climbing in, nor were we driving together in happy paternal silence. I was waiting in the oldest house in the land, at least if you looked to the west from our backyard ash tree. My eyes would climb the mountains at the far end of the desert valley, orangey and hazy with sunset, the last flash of light blindingly soothing; I’d tumble across the valley floor, the flats fall of cacti from mars and sparse patches of browned grasses, cooked and begging. The earth was either sandy or split open from the monsoons that motion of a paw send a wave through their bodies as they’d rise the wrinkles of scruff on their shoulders, ready to see the miniscule wetness, overcome with joy, and business could never carry on day he did not, the serfs would revolt, take him over in a wave of fur executed his mock disinterest nevertheless. Because even if for one time had moved forward or backward, and I knew not how to trace it. Now, it was not my father in that ancient doorway but a cold, foreign, clean man in a uniform designed to push you as far away as possible, the badge so neat, the uncomfortable blue cloth so intentionally worn. No real person could ever live inside of that suit. He was an officer with no heart to hold silence for me, no mind to leave his mall-bought cologne behind for today. Instead, I’d forever associate his synthetic aroma and the sensation that accompanied it with my father’s death.

“We’ve found your father, Jeff Emmons . . .”

I don’t call him my “father.” I focused in on extraneous details and lost myself in anger at this man telling me, breaking me, all without knowing me.

“We’ve found your father. His Toyota was in the arroyo-off of West Alameda, and I’m sorry to say…”

And every time my dad thought it was sweet when I tried to save an animal, every time he showed me what he was doing, when he talked to me as if I’d understand—and so I did—all of these memories surfaced like driftwood and deep-sea divers. I could feel his watery paper airplane eyes making fun of me as I’d hum while I’d eat. “What’re you laminin?” followed by a tiny smile, held back because he already knew.

In the house, the cold man left me alone, and I was feeling my throat make sounds that I hadn’t commanded it to. My tears were lagging, unable to move as I swam out into the memory pool that had built up my life. A manic brightness had entered the earth’s house that dampened the echo of my footsteps, each sound soft and muted. I walked my bare feet past the table my father had made; I rushed past his fingerprints in the paint. Narrow door. Wide bed. Mud walls. Pop-out closet. I ripped the doors open because they were never going to be used again. This violence moved inside of me, alive and in full-form—destructiveness I had always lacked. I piled each piece of his clothing on me, weighed myself down so my roots would not be ripped out from the earth.

“Can’t you hear me? The ID found at the site of the accident. . . . Jeff Emmons: is he your father?”

We used to go to his jobsites, and I’d wander. All the other working men would look at me as if I were a little girl who wore pink and was probably going to trip, fall, hurt herself, get in the way. My dad looked at me as if I were the reason for having pulled his life together, the one who was powerful and knew what she was doing, even though she was young and still had baby-soft bones. My life was no longer grounded in the rock of his existence. I wrapped ten fingers around as many shirts and sweaters as possible and held on as my knees cracked. His smell broke over...
me as the curve of the hangovers snapped. Everything stood still and watched as I pulled at every beautiful piece of his life; I ripped it out of a closet and piled it up high on a stone floor. Two, three-feet tall of chaos. I excavated, dug, scraped, and then deflated. I climbed on top, pulled the clothes over me and hid; I hoped that they might crush me, make me so small, unnoticeable, so that everyone would pass me by. Over time, I could contemplate what had happened, waiting for the morning that I might dig myself out.

When I woke, I was on my island bed set in the saltillo tile sea, free of the weight of his clothes, tears plummeting down my face, the little-girl helplessness surging in my adolescent limbs. My fingers ached from pulling the clothes, my chest felt excavated like a quarry, my relief and bitterness conflating as I realized the storyteller inside of me had gone so far. The vividness of the night past was incomparable; I had constructed a possible avenue of fate, one that I had always feared, that was more real, inviting, and tangible than reality even is. Like the times we experienced turbulence, I’d grown up in that bar—a beer for him and a giant, even sure if he left. He said he was ready to drive to the Cowgirl to carry it through, even while the verisimilitude of my illusion steadily fades. I lifted my head. I could see his shadow shifting on the tiles, working in his shop in the pleasing morning light. I walked steadily fades. I walked through my ancient house, my heart keeping desperate rhythm against my ribs, swearing to myself that I could feel the trauma as though they had really lived them. Yet it seems I get to keep the wisdom and emotional experience, I get to carry it through, even while the verisimilitude of my illusion steadily fades.

Abstract

How do national governments utilize available policy tools in responding to financially troublesome situations? This paper analyzes the economic impacts of the 1997 Asian Financial Crisis on South Korea, Korea’s policy implementation strategies to combat the problem, and lessons to be learned from observations of the way Korea handled the situation. The broad research question was: How was the South Korean economy affected by the 1997 Asian Financial Crisis, and was Korea’s response to the crisis effective in combating the problem? After carefully and thoroughly reviewing a number of relevant aspects of the crisis, the paper concludes that, while the Korean government’s response was generally effective, there were nonetheless various lessons that could be learned from the way Korea chose to handle the crisis.

Introduction

In the late 1990s, a financial disaster struck Asia. Many Southeast and East Asian countries found themselves in a seriously troubled state, witnessing their real GDP growth plummet, their stock markets collapse, and their government deficit become unsustainably high. Among the group of unfortunate countries affected by the 1997 Asian Financial Crisis was South Korea, which had been showing steady and robust growth in the years immediately prior to the crisis. In this paper, I contend that, while there were indubitable weaknesses—and plenty of room for improvement—in Korea’s handling of the crisis, the measures implemented to amendulate the macroeconomic status were, on balance, undoubtedly effective. I first investigate the causes of the Asian crisis on a very general level. I then analyze some specific economic impacts the crisis brought about to the Korean economy and look at the policy measures the Korean government implemented in response. I conclude by listing and discussing lessons that Korea could learn both in its government policy responses that were instituted to alleviate the crisis and in its future attempts to prevent such a large-scale catastrophe.

Background

As currency rates change and state economies grow, the overall financial positions of states relative to each other shift inevitably. After World War II, which left the international community in a state of utter ruin, different regions of the world had their own paths to recovery. The United States emerged as the economic and military superpower in the postwar era; however, its long-term decline after the extraordinary post-1945 U.S. hegemony was perhaps a natural and unavoidable phenomenon, simply because of the speedy growth of many national economies. In terms of economic power and prowess, various Western European and Asian countries quickly caught up with the United States in the decades following the devastation of the Second World War. Japan, by the 1980s, seemed to be emerging as a possible rival to the United States as the world’s leading industrial power. For example, Japanese auto manufacturers gained ground on U.S. rivals when smaller cars became popular after the oil-price shocks of the 1970s. In electronics and other fields, Japanese products became dominant in world markets, and this export-led growth became a powerful economic force in Japan’s nearby economies as well as in the United States, where Japanese creditors financed much of the growing U.S. international debt. These successes, however, concealed some serious problems: the economic growth observed in the 1990s led investors worldwide to resort to speculation in their decision making, driving prices of stocks and real estate to unrealistic levels. When Japanese stock markets and real estate collapsed towards the end of the 1990s, many banks were left with bad loans backed by overly deflated stocks and real estate. These losses were covered up, and the underlying problems, including lax banking regulations and political corruption, persisted throughout the 1990s. Despite the example of Japan’s financial system, these mistakes “were repeated almost exactly in the 1990s by other countries of East and Southeast Asia.” Real estate and stocks became seriously overvalued as rapid economic growth led to speculation and unrealistically high expectations. In turn, banks made bad loans based on the overvalued assets. Even though this continued to happen, banks were able to circumvent actual responsibility because of pervasive political corruption all over Asia. Finally, in 1997, all of these circumstances culminated in a grave financial crisis, which quickly spread throughout the world and reverberated for two years.

In the following sections, this paper examines the causes of the crisis, its impacts on the South Korean economy and politics, and the effectiveness of Korean government’s policy responses.
Underlying Causes of the 1997 Asian Financial Crisis

By the end of the 1990s, countries of East Asia had established themselves as the most successful emerging market economies in the world. The initially prudent government policies, combined with high private savings rates, sped up economic growth and raised standards of living. These countries undoubtedly set an example for others to follow; thus, that this region might become involved in one of the worst financial crises in history was "hardly ever considered a realistic possibility." Why and how, then, did they end up in such a deep financial quagmire? Part of the answer lies in the fact that these countries were the victims of their own rapid economic growth; their success led both domestic and foreign investors to underestimate the countries' weaknesses. Essentially, there were three underlying factors that contributed to the susceptibility of these countries to a large financial crisis: unsustainable deficits, lax regulations, and macroeconomic policy mistakes.

First, current account deficits in many of East and Southeast Asian countries had become unsustainable. As can be seen in Figure 1, most of the Southeast Asian economies had "large current account deficits, [...] in some cases exceeding 5% of their GDP". A country's current account keeps track of exports and imports, current and capital deficits, also commonly referred to as trade deficits, are produced when the country's imports exceed its exports, as a result of "weaknesses [...] in the financial structure of the Korean economy".

Second, the absence of an adequate regulatory framework for businesses, especially in the banking sector—a policy that has been a contributing factor to the crisis in Southeast and East Asia. Lax regulations allowed unsound and possibly corrupt relationships to develop. In Korea, it was not unusual that one division of chaebol (the Korean term for large corporate conglomerates) would be a bank, lending to other divisions of the same chaebol. With easy access to funds, it is indeed no surprise that some of these investments were drowned in dubious deals.

Third, a number of basic errors in macroeconomic policy, including the Asian Tiger governments' decision unofficially to fix the value of their currencies to the dollar, contributed to triggering the financial crisis in the strength of the dollar, therefore, had significant implications for the amount of capital these Asian countries could generate. For instance, when the dollar fell against most currencies in the early 1990s, the governments of the Asian Tigers were able to depreciate their currencies effectively against third-party currencies, thereby remaining competitive in the international market. However, these effects were reversed when the dollar appreciated in 1995, and the Asian economies "suffered substantial losses in competitiveness, with adverse effects on net exports and growth."

Korea was no exception, and, as the dollar became stronger, Korea not only experienced an accelerated increase in its current account deficits but also in the ease at which large amounts of foreign investments undertaken for exports. These three factors combined to produce what turned out to be one of the most severe financial meltdowns in history, and its impacts on many countries across Southeast and East Asia were undoubtedly significant.

Impact of the Crisis on the Korean Economy

The Korean economy suffered on many levels as a result of the crisis, with several indicators of economic health displaying signs of the declining conditions. First, expectations for the equity markets dropped, as presumably, Stock markets, on balance, serve as a barometer of opinion on the health of an economy. Because the level of any stock market is ultimately contingent upon the prospects for continued profits of the companies listed on the market, in periods when economic problems are taking place, or even anticipated, stock markets tend to fall to reflect the lower expected earnings. In the case of Korea, as in other East and Southeast Asian countries, the stock market plummeted drastically during 1997, as shown in Figure 2. Second, a decrease in the money supply was due to capital flight overseas—resulted in an increase in interest rates in financial markets. In addition to this market response, Korean government monetary authorities raised interest rates in efforts to prevent currency overshoots and to shore up the devalued currencies. As can be seen in Figure 2, Korea was among countries with the highest interest rates over a three-month period in 1997, excluding the outlier countries Philippines. Third, the first two factors combined with unanticipated currency devaluations "initiated a severe contraction in real economic activity in [Korea]," marked by such phenomena as increased corporate bankruptcies and rising levels of unemployment.

To make matters worse, during October and November 1997, an unexpectedly successful effort was "mounted to hold the line on the devaluation of the won, by selling foreign exchange." It is indeed a well-known principle among many political scientists and economists that the control of exchange rates in a managed float system becomes largely futile if foreign exchange reserves are depleted. This failed not only to keep the Korean won from "the verge of an uncontrollable exchange rate by using up more than half of Korea's dollar reserves in less than two months. Thus, the initial policy responses by Korea's government to the crisis as it developed were both futile and perverse: they increased the vulnerability of Korea’s financial system even further without succeeding in resolving the chaebol crisis. Additionally, they 'ate up Korea's cushion of foreign exchange reserves at a juncture at which the liberalization of financial and foreign exchange markets had made preservation of foreign exchange reserves critical.' Neat-depletion of foreign exchange reserves inevitably led the Korean government to lose autonomy over its ability to use the money supply to offset the market pressures regarding exchange rate, since the government could no longer use its supply of foreign currency to buy back the domestic currency available in the international market.

Role of the International Monetary Fund

The nature of the crisis in Korea was different from that of a typical financial crisis, which usually involves an excessive external debt leading to a balance of payment deficit. It was truly a liquidity crisis due to serious mismatches in maturity, in currency, and in the capital structure "in the balance sheets of the financial and even non-financial sectors of the economy."

And because it was a liquidity crisis, the Korean economy desperately needed a rapid infusion of foreign exchange. This failed not only to keep the Korean won from "the verge of an uncontrollable exchange rate by using up more than half of Korea's dollar reserves in less than two months. Thus, the initial policy responses by Korea's government to the crisis as it developed were both futile and perverse: they increased the vulnerability of Korea’s financial system even further without succeeding in resolving the chaebol crisis. Additionally, they ‘ate up Korea’s cushion of foreign exchange reserves at a juncture at which the liberalization of financial and foreign exchange markets had made preservation of foreign exchange reserves critical.’ Neat-depletion of foreign exchange reserves inevitably led the Korean government to lose autonomy over its ability to use the money supply to offset the market pressures regarding exchange rate, since the government could no longer use its supply of foreign currency to buy back the domestic currency available in the international market.

There were, however, two problems with this financial inadequacy and incorrect interpretation of the nature of the crisis. The amount of financial assistance the IMF and the Korean government agreed upon on December 3, 1997, was far from sufficient. The total amount of money that the IMF together with other international financial institutions offered to bail out Korea was almost $35 billion, which was also an amazing amount. But it was still a small figure as a second line of defense that would be made available to Korea by G-7 countries only if the initial amount of $35 billion contributed by the IMF and other multilateral institutions proved inadequate for economic reconstruction. The disbursement of the $35 billion was to be spread over more than two years until the year 2006, with the provision of each instalment conditioned upon the progress the Koreans were making toward the objective. The Korean government has taken a "structural reform" direction to
further tightening of its monetary and fiscal policies.38 Foreign banks judged these amounts to be altogether utterly insufficient, even in terms of meeting the nation’s short-term economic and financial problems. To the contrary, the large majority of these short-run obligations, as well as Korea’s precariously low levels of foreign currency reserves, the situation did not seem to improve even with the bailout money. Asrollovers were rebuffed, the limited foreign exchange reserves and the high exchange rate pushed foreign creditors further accelerated the withdrawal of their funds from Korea, pushing the country “to the verge of a sovereign default.”39

Thus, being insufficient is one issue; the IMF’s misguided intentions are another. Critics of the IMF argue that stabilization packages for Korea were poorly constructed and, instead of alleviating the problem, deepened the crisis and lengthened the recovery period.40 These critics argue that not only did the IMF fail to predict the crisis, but it also failed initially to understand its causes, ascribing it to macroeconomic imbalances. As a consequence, the IMF prescribed the “usual package of fiscal and financial institutions of the aforementioned G-7 countries to roll new round of negotiations with the Korean government for future request, the United States not only persuaded the IMF to quickly enter into a

accelerated the withdrawal of their funds from Korea, pushing the foreign currency reserves, the situation did not seem to improve even in terms of meeting the nation’s short-term economic and financial problems.41

A. Strengthening legal and regulatory infrastructure: The first step in comprehensive financial-sector reform was laying foundation for strengthening legal and regulatory systems.42 The government reformulated the financial system in December 1997 with the aim of creating a more transparent and effective system.43 On December 29, 1997, 13 financial bills, including a bill to establish a consolidated financial supervisory authority, were enacted. Thanks to this legislation, the Financial Supervisory Commission (FSC) was established in April 1998 to carry out regulatory and supervisory functions.44 The FSC was given broad powers to make a choice between international capital mobility and domestic monetary policy autonomy.45 This phenomenon is commonly referred to as the “Impossible Triangle” with regards to a state’s economic interactions with other states, in which it must choose two of three things: international capital mobility, fixed exchange rate system (and the subsequent stability of the exchange rate), and domestic monetary policy autonomy. Precisely because of the inevitable trade-off between these three things, a managed float system or fixed system is not very ideal for countries wanting to achieve capital mobility and monetary policy autonomy at the same time.46

The third point relates to prudential supervision. Although Korea rightly strengthened prudential supervision as one of the policy responses to the crisis, it was necessary for it to be carried out at the macroeconomic level, as well as structural level, as well as the rule of law, are important to maintain because, without them, the fourth and last point regards the confidence of foreign investors. The crisis in Korea left its economy scarce in capital. In order to attract foreign capital, several conditions need to be met. Transnational capital’s inflows have been historically conditioned by the rule of law, as well as the rule of law, are important to maintain because, without them, the fourth and last point regards the confidence of foreign investors. The crisis in Korea left its economy scarce in capital. In order to attract foreign capital, several conditions need to be met. Transnational capital’s inflows have been historically conditioned by the rule of law, as well as the rule of law, are important to maintain because, without them, the fourth and last point regards the confidence of foreign investors. The crisis in Korea left its economy scarce in capital. In order to attract foreign capital, several conditions need to be met. Transnational capital’s inflows have been historically conditioned by the rule of law, as well as the rule of law, are important to maintain because, without them, the fourth and last point regards the confidence of foreign investors. The crisis in Korea left its economy scarce in capital. In order to attract foreign capital, several conditions need to be met. Transnational capital’s inflows have been historically conditioned by the rule of law, as well as

The first point relates to the sequencing of capital account liberalization. Although the Korean government needs to be commended for fundamentally increasing their international capital account, the sequencing of capital account liberalization must be guided by the sequence liberalize short-term capital flows ahead of long-term capital flows—was a serious mistake. Korea should have realized that short-term capital flows are more financially volatile than long-term flows, and so the government should preferably liberalize long-term capital flows before short-term capital flows. Korea accumulated far too much short-term liability, which led to uncontrolled mismatches in maturity and currency, at least in the periods immediately following the crisis. The second point has to do with the superiority of a fully floating exchange rate system to a managed float system. Korea, along with most other East Asian countries, considers itself to be a managed float system. This has been historically described as a rather curious mixture of a completely floating system and a fixed exchange rate system. The managed float system initially lets the invisible hand of the free market affect the exchange rate however it wants, but it differs from the floating system in that there are upper and lower limits on the levels that the exchange rate can reach. Once those imaginary bands (or limits) are reached by either rising or dropping exchange rate, government interventions becomes permits the exchange rate is restored such that it is contained within the upper and lower limits. One way the government can intentionally change the exchange rate is through the use of its foreign currency reserves, but this is inherently problematic because, once the country runs out of its limited supply of foreign reserves, it no longer has any practical means to keep the exchange rate contained within the limits. Thus, with a managed float system, a country must make a choice between international capital mobility and domestic monetary policy autonomy. This phenomenon is commonly referred to as the “Impossible Triangle” with regards to a state’s economic interactions with other states, in which it must choose two of three things: international capital mobility, fixed exchange rate system (and the subsequent stability of the exchange rate), and domestic monetary policy autonomy. Precisely because of the inevitable trade-off between these three things, a managed float system or fixed system is not very ideal for countries wanting to achieve capital mobility and monetary policy autonomy at the same time.
capital will not flow into the country in the first place. If foreign investors lose confidence in the transparency of business and government transactions or in the rule of law in a country, they will quickly move their investments elsewhere in order to guarantee more stable returns in other, less politically risky nations. As mentioned previously, in the initial responses section of the paper, Korea suffered from various chaebol’s corrupt financial transactions as well as from a greedy President who put his own needs before the needs of the whole country. These were precisely the factors which contributed to lowering foreign investors’ confidence, and they subsequently withdrew significant portions of their investment from Korea. Thankfully, however, the newly elected President instituted numerous reforms to increase the government oversight and overall transparency of business transactions, and prospects looked optimistic from then on.

Overall, there are two important functions of a financial market: to provide liquidity (convertibility of capital into money) and to allocate credit efficiently. The South Korea environment contributed to lowering foreign investors’ confidence, and the needs of the whole country. These were precisely the factors mentioned previously, in the initial responses section of the paper, more stable returns in other, less politically risky nations. As government transactions or in the rule of law in a country, they will not flow into the country in the first place. If foreign investors lose confidence in the transparency of business and government transactions or in the rule of law in a country, they will quickly move their investments elsewhere in order to guarantee more stable returns in other, less politically risky nations. As mentioned previously, in the initial responses section of the paper, Korea suffered from various chaebol’s corrupt financial transactions as well as from a greedy President who put his own needs before the needs of the whole country. These were precisely the factors which contributed to lowering foreign investors’ confidence, and they subsequently withdrew significant portions of their investment from Korea. Thankfully, however, the newly elected President instituted numerous reforms to increase the government oversight and overall transparency of business transactions, and prospects looked optimistic from then on.

Annotated Bibliography


Much like the paper written by Kihwan Kim, this paper discusses the 1997 Asian Financial Crisis as it relates specifically to the Korean economy and politics. However, it is different from Kim’s paper in that it spends little time discussing the background information and quickly shifts the focus to Korea’s policy responses and their efficacy. This paper was helpful in developing my overall argument in my paper because it helped me analyze clearly whether the economic and political reforms instituted by the Korean government were effective in the long-run in improving the Korean economy.


This journal article was written by my international affairs professor, David Baeve. The subject of the paper was also a main topic for one of his lectures this semester, and I enjoyed learning about what came to be known as the Impossible Triangle, which depicts the trade-off among three different factors regarding a state’s economic relations with other states: international capital mobility, fixed exchange rate system, and domestic monetary policy autonomy. This helped me most in the “Lessons to be learned” section of my paper, where I discussed some mistakes that the Korean government made in devising its policy responses to the crisis.


This rather brief journal article specifically emphasizes two competing explanations for the causes of the South Korean financial crisis and later goes short but insightful analysis of the policy lessons that the Korean government took away from the experience. It also mentions the economic changes that were brought about to various sectors of the Korean economy and discusses some of the ways in which Korea should deal with financial liberalization in an increasingly globalizing world. This was extremely helpful for my research not only because of its brevity but also due to the way in which it encompasses two different potential explanations for the crisis in question.


This book offers a current and comprehensive introduction to international relations theory as well as to various topics in international affairs, including security, military, economic, and political issues around the globe. One of the inherent benefits of using a book like this is that it offers an account of the 1997 Asian financial crisis in light of many other concurrent events at the time and of the particular state the international community was in.


This paper focuses on the Asian Financial Crisis as it relates specifically to the South Korean economy. It analyzes factors regarding the causes of the Korean Financial Crisis, analyzes the policy responses that the Korean government decided to undertake, and offers lessons to be learned not only by South Korea but also by the entire international community. This paper is particularly pertinent to my research because it outlines the effects of the 1997 Asian Financial Crisis on the South Korean government as well as the policies that it chose to adopt in response.


This journal article analyzes the process of economic recovery from the 1997 Asian financial crisis specifically in South Korea and details some lessons that the Korean government learned from it. In particular, the article focuses on some of the reasons that South Korea was able to recover speedily from such a large-scale crisis, including the rate adjustments that the Korean government made to its fiscal and monetary policies, social structure reforms, the safety net of IMF’s massive financial assistance, Korea will have to be known as the “moral hazard” problem. Now that the so-called safety net of IMF’s massive financial assistance, Korea will have to be known as the “moral hazard” problem. Now that the so-called
Woolf’s Gender Portrayal

By Tessi Lauricella

In her novel, The Lighthouse, Virginia Woolf sought to unravel the truth behind male thinking. By unveiling the feelings and emotions of men, Woolf is able to place females in a dominant position. She outwardly portrays men and women adhering to the norm when, in reality, she destabilizes those stereotypes by characterizing men as emotional and women as powerful. Woolf’s contrasting language emphasizes the strong influence of conventional gender stereotypes and at the same time exploits those stereotypes to convey the hidden reality behind gender superiority. Employing contradiction and mockery, Woolf succeeds in destabilizing traditional gender roles and revives disdain towards her society’s values.

Woolf uses masculine and feminine language to overtly display the stereotypes of gender roles during the 1920s. The way certain characters (such as Mrs. Ramsay and her children) converse with each other reveals the extent to which these characters grasp societal gender-values. When Mrs. Ramsay puts Cam and James to sleep, she uses distinctly different language to speak to each of them. After Cam protests the unnaping, he hangs on the wall, Mrs. Ramsay’s emotional, creative, and soothing tone reassures her that “the fairies would love it; it was like a bird’s nest; it was like a beautiful mountain such as she had seen abroad” (117). In contrast, when James opposes the being taken down, Mrs. Ramsay again assures him that it will still be on the wall but this time uses language that is logical and rational rather than imaginative. She simply tells him that “the boar’s skull was still there; they had not touched it; they had done just what he wanted; it was there quite unburnt” (117). Through differing forms of communication, Woolf depicts how strongly influential stereotypes were for boys and girls; this, in turn, affects our way of thinking and processing of schemas.

Woolf’s view of traditional gender roles is also superficially exposed through the relationship between Mr. and Mrs. Ramsay. These roles are not at all the conventional—gendered discourse Woolf uses between the two. By establishing these rigid gender roles, Woolf gives insight to the nature of the husband-and-wife relationship during the 20th Century. During a certain point in time, Woolf’s view of traditional gender roles is also of thinking and processing of schemas.

In contrast to the customary, correctly gendered society imagined at the time, Woolf depicts shifting positions between the husband and the wife by carefully ascribing symbols to these characters that showcase the dominance women obtained over men. When Lily is first introduced to the lighthouse, Woolf’s view of conventional gender stereotypes is at the same time exposed those stereotypes to convey the hidden reality behind gender superiority. By unveiling the feelings and emotions of women that were superficially exposed through the relationship between Mr. and Mrs. Ramsay, Woolf succeeds in destabilizing traditional gender roles and reveals the abilities of women by covertly revealing the powers of women’s corruption of society with his unstable, insecure self-esteem. Woolf is able to invalidate Mr. Tansley’s opinion and uncover the truth behind men’s subpar rationality.

Similarly, Mr. Ramsay’s inner thoughts also mock the notion that women should be sympathizers. Mr. Ramsay acts in a remarkably infantile fashion upon this belief when Lily does not fulfill what is expected of a woman to sympathize. Like a spoiled child, Mr. Ramsay questions her lack of sympathy: “why, thought Mr. Ramsay, should she look at the sea when I am here?” (155). Mr. Ramsay displays a constant need for attention just as his son James demonstrates towards Mrs. Ramsay. When he does not receive the desired sympathy, Mr. Ramsay gets on the ground and ties Lily’s shoes, “showing her his own invention. Once you tied it, it never came undone” (158). Outwardly, it seems as though Mr. Ramsay is capable of tying shoes very well. Inwardly, the message is much different. Here, Lily is able to convey sympathy without even saying anything, instead she allows Mr. Ramsay to tie her shoes. This sequence when Mrs. Ramsay stated earlier, “she was not good enough to tie his shoe strings” (30). In this way, the roles are reversed, and it is no longer the woman longing to tie even a shoestring Mr. Ramsay on the ground, succumbing to his want for sympathy. Woolf depicts characters in such a way to highlight the dominance women obtained over men, before they even realized their potential as women. Through the thought processes of men, their anxieties and attachments are revealed, and their logical, rational, independent ego is weakened.

Woolf ends the novel with a clear reflection on her attitudes of those who adhere to gender normativity. Those who grasped on tightly to the norms were killed off at some point. Mrs. Ramsay, though symbolically transcended gender norms, nonetheless explicitly abided by them with the belief that “an unmarried woman has missed the best of life” (53). Prue and Andrew, children who closely resembled the ideal male and female stereotype, were also killed during “Time Passes.” Minta and Paul, who were once married, died metaphorically through their unhappy relationship. On the other hand, those who were deviants, or underdogs such as Lily, the misunderstood painter, and Carmichael, a rather silent character, succeeded in the end of the novel. Through the deaths and successes of her characters, Woolf symbolically demonstrates that society would actually benefit from the outcasts and their evolving conception of gender.

Outwardly, it is evident that during the 1920 era, men were as logical thinkers while women only displayed emotion. Woolf portrays gender in a way that disturbs the truth of society’s gender roles. She succeeds in presenting the inner thoughts of her characters in such a way where we are able to see the opposite of what is expected to take place. Woolf presents the male thought processes as childlike and insecure, leaving females in a dominant position. Woolf’s subtle mocking tone calls attention to the character’s rigidity in their internalizing of female and male values, thus giving a new perspective on the capacity of females with respect to their male counterparts. By killing off those who adhere to gender norms, Woolf may be trying to construct her own vision for the future: a society where people rise above and leave behind traditional gender roles.

Works Cited


99 Problems for Danger Mouse: A Helter Skelter Moment in Music History

By Alexandre Ciko

Copyright law "provides a vital economic incentive for the creation and distribution of much of the literature, commentary, music, art, and film that makes up our public discourse" (qtd. in Netanel 3). In other words, copyright is an incentive for artists to create because, under copyright law, only they can benefit monetarily from their produced work. Copyright law also maintains that the protected material be both original (of the author’s own creation) and creative (requiring thought to produce) (Lutzker 10). It also protects the material for a specified number of years: "American copyright law regulates (at least potentially) any creative work produced after 1923, for the maximum term of life of the author plus seventy years, or ninety-five years for corporate work or work created before 1978" (qtd in Lessig 97). Beyond these basic implications, the scope of copyright law is incredibly vast and, so, for the sake of brevity, I will focus on the part of the law that directly relates to the musical culture that I am discussing: fair use.

Fair use is a remix artist’s only protection under copyright law; it doesn’t always work. In the case of Danger Mouse, he likely had a strong case for fair use, which I will later explain, and yet he complied with EMI’s demands to avoid a lawsuit. But most artists do not surrender so easily. They, and I, believe that their work should be protected under fair use, as it does not violate any part of the fair use doctrine.

There are three basic principles to fair use, as Suhui Lee refers to in her essay “Fair Use and the Vulnerability of Criticism on the Internet.” She references the case Folsom v. Marsh, in which the Supreme Court determined that copyright law is not absolute and that, in order to create new material (such as music sampling) was allowed.

The judge in this case, Judge Story, “identified three factors for determining the doctrine (Netanel 62). In the following pages, I will defend sampled music against the three factors of the fair use doctrine it may be in danger of violating: failure to acknowledge the original material or attempt to take credit for it (factor 1), using too much of the original to be able to call it their own derivative work (factor 2), and harming the market for the original (factor 3).

The primary demand of the fair use doctrine is that the new art not take credit for the original. Mashups do not attempt to take credit for the original songs used in their music; they simply take credit for the final product of combined songs, with the addition of their own musical beats and samples behind the components. The artists in question, therefore, do not take all the credit for their work. They acknowledge that the sound bytes used are from other artists’ music; most of whom they have great respect for, which plays a role in which music they choose to sample. The artist Girl Talk explained his decision to list every artist whom he took samples from on the inside of his album: “I feel like I did my own work when I took all the music from other artists; because they’re blatantly on the album and I have a lot of respect for all their music.” (“Good Copy, Bad Copy”). In the case of The Grey Album, “As much time as Burton spent at his computer, he doesn’t take all the credit for The Grey Album. He truly believes the two sources albums were a good fit” (Moss). Particularly in instances such as The Grey Album, where Danger Mouse was pursued by EMI until he agreed (quite readily) to stop distribution of his album, the fair use doctrine has the potential to protect sample artists despite their acknowledgement of the original artists, and the fact they profit only minimally from their work. Some may ask why, if they are not trying to take credit, perhaps the fair use doctrine is not a valid argument for not taking legal action. This is a valid point, but if we do not simply seek permission to license samples from the original artists. The answer lies in the fact that not only is it incredibly difficult to secure a license, and in some cases impossible, but also that the cost of a license would be astronomical, a figure most moonlighting, sample artists do not possess. Girl Talk again took the stage in the documentary Good Copy Bad Copy to comment on the issue. “In a theoretical world, if I could clear every sample on there, and I had a million dollars or a billion dollars, or whatever, to do it, then they wouldn’t be able to sue me” (qtd. in Lessig 97). Through, you know, the legal hassle [of] figuring all that out. And that’s just absurd.” In other words, licensing music to use in remixes is not a very realistic solution. The alternative is to simply create derivatives that use the original songs, or license the rights of the original artists their due credit, and pray for no legal repercussions.

The second component of the fair use doctrine requires that the new art produce a “new” and creative product. Although there are some instances where remix music may barely differ from

Copyright law ("the nature of copyright infringement (how was the copyrighted material selected to be used?)

Copyright law ("the quantity and value of the appropriation (how much of it was used and was it the most vital part of the original work?)

Copyright law ("the degree in which the new work may prejudice the value (how much is the copyright holder economically hurt by the infringing work?)"

These factors ultimately become what is now known as the fair use doctrine (Netanel 62). In the following pages, I will defend sampled music against the three factors of the fair use doctrine it may be in danger of violating: failure to acknowledge the original material or attempt to take credit for it (factor 1), using too much of the original to be able to call it their own derivative work (factor 2), and harming the market for the original (factor 3).
its original components, the majority of mashups are incredibly different from their original matter. For example, even Danger Mouse’s remix of just two songs, Jay-Z’s “December 4th” and the Beatles’ “My Sweet Lord,” is different from either of the originals simply because he is mixing two different genres (and two songs with entirely different messages) together. Siva Vaidhyanathan says: “sampling under copyright law is a collaborative effort by those who wish to bring the old in conjunction with the new.”

In order to defend mashups against the third component of the fair use doctrine, harming the market for the original, I will take a few moments to discuss the opposition. Why do we not simply say that fair use is applicable to all forms of derivative creative work? Simply because, in the case of copyright law, it is too difficult to differentiate the harmless mashup from the not-so-harmless ripping off of ideas. Steven Hetcher raises a question that encapsulates this idea: “The question naturally arises whether there is a way to have one’s cake and eat it, too—to have a regulatory environment that promotes and facilitates remix culture yet does not entirely eliminate the ability of fair use doctrine to promote fair uses and deter unfair ones” (1924). Hetcher points to examples of evolving technologies and how each one began to fall into conflict with copyright law such as the Xerox machine, the tape recorder, and, now, the digital technologies. Each, in effect, “copies” the original material, thereby violating copyright law. Regardless of the exceptions to the copyright law, I believe that, in the context of evolving technologies, one may see how copyright law needs no reform to expand with the advancing technologies, but simply becomes more expansive as new technologies are created (103). Therefore, copyright law actually seems to be doing more harm than good in this instance because it is hindering creative growth of artists in our country if they happen to be drawing from other people’s art in order to produce their own. As previously discussed, this hurts our culture in the way of discouraging the art form of sampled music. Despite this seemingly bleak musical future, for sample artists, there may be hope yet. Since the 2004 release of The Grey Album, a few key developments have been made in the world of sample music. The first is the advent of the Remix Artist Treaty of the U.S. ("The Grey Album Treaty") the war waged on. Illegal Art posted it as part of their “Illegal Art Exhibit” which aims to “educate the public on the impact of copyright law” (McLaren) and sent a letter to Sony in response to their DMCA takedown notice. Sony dropped the case, and the album, despite its illegality, was able to stay online ("The Grey Album Battle"). Perhaps a bigger victory of mashup music occurred at a March 2007 House of Representatives hearing on the digital future of the U.S. ("Good Copy Bad Copy"). Congressional Mike Doyle used Girl Talk as an example of a mashup artist to illustrate the issue of music sampling, referencing a Chicago Tribune article about the artist and later stating “I hope that everyone involved will take a step back and ask themselves if mashups and mixtapes are really different if it’s the same as Paul McCartney admitting that he nicked the Chuck Berry bass-line and used it on the Beatles’ hit “I Saw Her Standing There” (qtd. in The 463). The fact that this issue is being debated in Congress and advocated for, as well as the fact that a small-time artist like Girl Talk is the subject of debate, suggests that there may be a future for mashup artists in our copyright law.

I believe that use of copyrighted material in sampled music does not harm the original matter but, rather, brings viral, free publicity for which most artists should be thankful. I will conceder it is plausible to see where some artists would not want their hard-earned work distorted, manipulated, or otherwise butchered into a techno-remix track, but, with the advent of technologies that makes such a task extremely easy, we have no means to stop this from happening. Instead of shoring offthis practice, we must embrace it, thank the remix artists for reminding people that the Jackson 5 used to be as cool as Lil’ Wayne is now (see: DJ Cookin’ Soul, “I Want You Back ft. Lil’ Wayne”), and move on with our day. As remix music continues to pave the way for the ordinary man or woman to become a musical genius, I do not advocate a world in which people blatantly steal each other’s ideas, call them their own, and essentially claim the entire idea as their own. As previously discussed, this hurts our culture in the way of discouraging the art form of sampled music.

For the remainder of this discussion, I will focus on mashup mixes that make use of copyrighted material. In the discussion of how copyright law is harming the advent of remix culture, in the instance that it does actually harm the success of the original, (1924). He gives an example of Cormac McCarthy novels, their permission, often as an alternative version of a song for an artist like Girl Talk is the subject of debate, suggests that there may be a future for mashup artists in our copyright law. There’s primary goal was to promote creativity. Dan Glickman, chairman and CEO of MPAA, explained this by reminding us that our founding fathers determined the success of our country based on the amount of creation that was protected from appropriation to create. To provide an incentive for creation by protecting creators’ rights. The idea that creators’ rights but, in doing so, has grown into a monster of oversimplified proportions. Instead of its original intention of promoting creativity, copyright law is now doing just the opposite. By discouraging teachers from allowing students to include copyrighted material in their collages, discouraging remix artists from making music (or simply showing it to anyone) and by allowing large corporations like EMI to bully artists like Danger Mouse into revoking the art that they put out into the world, the copyright clause has become its own worst enemy. Lawrence Lessig explains that it is not the law itself that has changed but that, as the law is applied to new technologies, it becomes increasingly restrictive. He gives the examples of evolving technologies and how each one began to fall under conflict with copyright law such as the Xerox machine, the tape recorder, and, now, the digital technologies. Each, in effect, “copies” the original material, thereby violating copyright law. Regardless of the exceptions to the copyright law, one may see how copyright law needs no reform to expand with the advancing technologies, but simply becomes more expansive as new technologies are created (103). Therefore, copyright law actually seems to be doing more harm than good in this instance because it is hindering creative growth of artists in our country if they happen to be drawing from other people’s art in order to produce their own. As previously discussed, this hurts our culture in the way of discouraging the art form of sampled music.

Despite this seemingly bleak musical future, for sample artists, there may be hope yet. Since the 2004 release of The Grey Album, a few key developments have been made in the world of sample music. The first is the advent of the Remix Artist Treaty of the U.S. ("The Grey Album Treaty") the war waged on. Illegal Art posted it as part of their “Illegal Art Exhibit” which aims to “educate the public on the impact of copyright law” (McLaren) and sent a letter to Sony in response to their DMCA takedown notice. Sony dropped the case, and the album, despite its illegality, was able to stay online ("The Grey Album Battle").
A Responsible Look at Economists in the Finance Industry

By Richard Bohm

As with any extended period of economic downturn, the financial crisis of 2009 and the subsequent recession within the United States have resulted in criticism and finger-pointing. Once again, economists involved with financial institutions have become scapegoats because of their strong ties to both the financial and private sectors. Many news outlets, including The Economist and The New York Times, have suggested that economists should adopt a “code of ethics” in following the example of most other social sciences. However, this is not a viable solution. A “code of ethics” has inherent problems and does not address issues of incentive and enforcement.

A more realistic solution needs to involve the financial institutions that hire these economists. Corporate/Social Responsibility (CSR) provides a platform for changing the unethical actions of economists within the industry because firms have the most influence on their behavior. Financial institutions need to begin to internalize the positive externalities associated with strong economies and labor markets. By drawing the connection between the unethical behavior of their economic consultants and the negative long-run impact on business, these firms can employ CSR to promote socially beneficial activity that can support a growing and resilient economy.

The Problem

There are two main problems involving economists working for financial institutions — only the first is addressed by a “code of ethics.” The first problem is the conflict of interest that arises when economists work for a private firm while maintaining public obligations to the economy. In 2009, many of the most renowned financial economists were asked to testify in front of Congress. The question they were asked was the following: “What do we do? With the economy in ruins after an unprecedented financial collapse, politicians needed academic testimony best to respond to the crisis. Undoubtedly, these economists gained significant influence on economic policy from their involvement; however, many of these economists were also employed by the financial institutions that were responsible for the collapse. Often, Congressional assemblies were not aware of their affiliations at the time.

Whether or not economists spoke for a public interest or a private one will never be known; what is known is that there are connections between the economists who testified in public and big financial institutions. These connections range from personal relationships between big players to contractual work by academics for government bodies. Some economists, such as Lee Sachs (pictured right), maintained his personal connections with government officials while working in the finance industry. Sachs was the Senior Managing Director of Bear Stearns through 1963 and preserved ties within the firm throughout its collapse. Sachs also holds associations with Larry Summers, the Director of the National Economic Council (and Sachs’ tennis partner), and Tim Geithner (left), who at the time of Bear Stearns’ federally aided sale to JP Morgan was an important figure in the Treasury Department. Another example is Laura Tyson, the Director at Morgan Stanley, who also has associations within government programs on economic recovery. Additionally, there were many lesser-known economists who were employed by financial institutions and testified in Congress. A paper by Epstein and Carrick-Hagenbarth through the Political Economy Research Institute shows many examples of these economists who failed to disclose their associations to Congress.

Some connections between the government and the private sector are certainly necessary. The associations between the financial sector and the public sector allow for business to thrive and remain competitive because they ensure the legal system is aware of the needs of corporations. Unfortunately, there is no golden rule for how much corporations and government should be interconnected. The financial crisis suggests that the connections are too strong as they stand. It is apparent that players in the financial and political game forgot where their loyalties were; the elite became so unified that the dangers to the economy were ignored.

The second problem is of balanced employment. An important book on the financial crisis by Raghubar Rajan, Fault Lines, argues that, in many instances, economists were fired from financial firms for suggesting that brokers take on less risk. The issue was “tail risk.” Tail risk is largely ignored because it is so improbable; during the financial crisis, it took the form of credit default swaps, collateralized debt obligations, and other complex derivatives. Traders assumed that, because the value of each financial instrument was derived from many source (mortgages and insurance plans), there was a very low chance that all of them would fail so long as the underlying capital was diversified. Therefore, if one derivative failed, they all would, and the government would have to step in to protect national interests.

As economists pointed out to these firms, tail risk is dangerous. For example, if one person speeds on the highway, his or her probability of getting in an accident is relatively low—that’s bias or her tail risk. If everybody speeds on the highway, what was tail risk for one car becomes normalized and is very likely. The same process occurred with derivatives; brokers took on risky instruments, and, as a result, regulations were overlooked while risk grew. The economists who make of this, according to Rajan, were fired and replaced by those who agreed with the current business plan. Having employees who agree with you is desirable, but it can also be dangerous. The year 2000 showed the world just how dangerous.
Many magazines, including The Economist and New York Times, as well as academics such as George DeMartino of the University of Denver, have called for a “code of ethics” to which professional economists should be bound. Despite its popularity, there are numerous problems with an oath.

There is, first and foremost, no universal agreement among economists that they need a code of ethics. Surely, universal agreement is rarely if ever the case, but it provides a significant barrier to the successful implementation of a code. The profession has countless journals, organizations and affiliations making it difficult for one body to enact a system of rules. The American Economic Association (AEA) is the largest group of economists, but it is not universal and lacks participation from all universities. Even if the AEA could implement a code, enforcement is impossible, because rules are not legally binding. Economists should be the first to point out that there is no incentive structure that could reasonably compel someone to become a leader in an effort to be correct. Some have suggested that there are some punishments that could be implemented such as banning academics from certain journals. However, even if every journal in existence today agreed to ban those who broke a code of ethics (which is impossible), a market would open up for journals that didn’t have that requirement. Lastly, universal inclusiveness is a barrier to implementation of a code of ethics. How can you include all of the potential ethical issues that an economist could face? How can you even generalize them effectively?

Overall, the code is a weak suggestion that has no future. However, there is a solution to this problem: CSR.

Better Days Ahead

Financial institutions live in a symbiotic relationship with the economy. The economy cannot function properly without a means of allocating funds, and financial firms cannot exist without an economy to finance. Therefore, it is self-evident that there is a shared interest in good economic conditions and conditions that work to promote them. If the financial crisis has taught us anything, it is that greed and bad business can lead to economic chaos; these firms realize this and now work to develop a smart solution to avoid another crisis. Another option towards this smart solution is adjusting employment conditions for economic consultants because they are vital to the firm and have an important impact on business initiatives.

Financial institutions need to focus on the two key problems involving economists: conflict of interests and balanced employment. Unlike a “code of ethics,” corporate social responsibility addresses both.

The first problem does not have a simple solution. In some ways, it would benefit the economy as a whole if economists were to be bound by an oath. Many magazines, including The Economist and New York Times, have called for a “code of ethics” to which professional economists should be bound. Despite its popularity, there are numerous problems with an oath.

Financial institutions are not simple creatures. For most businesses, the primary concern is ensuring that, at the end of the day, revenues are greater than expenditures; the balance sheets for financial institutions are more intricate. In an era of finance before 2009, the efficient market hypothesis convinced financiers that the worth of any instrument as determined by the market was a fair price; yet, in the modern era, this idea holds much less weight. As the financial crisis taught us, the world of derivatives, securities, stocks and debt is not always rational and often misleading. At the end of the day, the worth of a financial instrument is very questionable.

Because of the nature of finance, relatively few competitors dominate the industry. Each firm has a huge impact on the industry and as a result, the economy. CEOs need to realize that they are long-term actions, and they need to begin to behave with those in mind. The economy cannot function well when rich institutions act against the will of the markets by engaging in risky actions and relying on government intervention as they did in the years prior to the financial crisis. As a result, these institutions have suffered along with the economy. We need to learn from these mistakes if we are to avoid the crisis in the future.

Is this real life? Or is this just fantasy?

Surely, the problems that plague our financial system are not limited to the employment of economists, but making progress towards solving this portion of the problem would show signs that the system is ready for the future. It is hard to say whether a call for socially responsible behavior by financial institutions is realistic. The financial system is a mess, and oftentimes what is going on is not observed outside of Wall Street. There are individuals in the field who may not have the economy in mind when they make decisions to some, it is only about power and money. The main challenge is to convince players in the industry that their prerogatives are aligned with a resilient economy. The heads of big firms need to recognize that the long-term success of a firm relies on the economic competitiveness of the country they’re in, and as a result, everyone in that firm relies on the same core principles. Perhaps it is the case that some leaders in the financial industry do not care about anything other than their own happiness and that no proposal can counteract their behavior; however, those who realize the connection between their business and the livelihood of the working for big financial firms couldn’t also be too profitable.

Yes, there is money to be had for exploiting the system by hiring like-minded economists to testify in Congress on your behalf; however, in the long run, we are all at the mercy of the economy. Corruption will push capital abroad, and easy money will dry up. The only way to protect the interests of our economy is to address the issues we face with an ethical and moral approach. CEOs and financiers can make easy gains, but without a unified goal of economic prosperity, even the most successful will see a day when the system fails them.

In his book, Shop Class as Soulcraft, Matthew Crawford suggests that perhaps the reason that the banking and finance sector collapsed was because the leaders of industry were unfamiliar with failure. In a world where only the smartest students go on to work in finance, one can imagine how easy it is to bet other people’s money on your business model when you’ve never failed before. The year 2009 was a wakeup call: markets fail, smart people make mistakes, and people will suffer from it. Ethical engagement with economists is not the answer; but it is one that represents a step towards fixing an overarching problem. The economy is in our hands, and in the long run, we all stand to suffer.

Works Cited


Economist’s Oath

Financial institutions are not simple creatures. For most businesses, the primary concern is ensuring that, at the end of the day, revenues are greater than expenditures; the balance sheets for financial institutions are more intricate. In an era of finance before 2009, the efficient market hypothesis convinced financiers that the worth of any instrument as determined by the market was a fair price; yet, in the modern era, this idea holds much less weight. As the financial crisis taught us, the world of derivatives, securities, stocks and debt is not always rational and often misleading. At the end of the day, the worth of a financial instrument is very questionable.

Because of the nature of finance, relatively few competitors dominate the industry. Each firm has a huge impact on the industry and as a result, the economy. CEOs need to realize that they are long-term actions, and they need to begin to behave with those in mind. The economy cannot function well when rich institutions act against the will of the markets by engaging in risky actions and relying on government intervention as they did in the years prior to the financial crisis. As a result, these institutions have suffered along with the economy. We need to learn from these mistakes if we are to avoid the crisis in the future.

Works Cited


It was going to be impossible. There were three buildings in Research Complex I. Two of the buildings had twelve floors each. The third building had nine floors. This amounted to thirty-three floors, which meant there were roughly two stairs for me to scale to find the missing person, who, I might add, had just arrived in the United States for the first time. From Saudi Arabia.

This was a dangerous proposition in itself: an unaccompanied Saudi in an American research complex, where the U.S. (Homeland Security would not like the sound of this.) So, This was a dangerous proposition in itself: an unaccompanied Saudi

Out of the six hours I spent at work on a typical day, two after they met, got down on one knee, and told my mom he wanted to resume for med school. I had had previous experience as a laboratory research assistant. Before I started, I had to Wikipedia for "endocrinology" to make sure it was the study of glands and not the visual play computer games, looking up med school requirements, and, rarely-to-never, protein precipitation of urine samples, 2-D gel electro-phoresis, data analysis, and grant writing.

According to Mike, our boss, we were working on an "important project" for King Saud University in Saudi Arabia. The university funded our projects and paid for data they either never got or were falsified under their immense pressure for "results." They paid for a number of their students to earn their PhDs at our university while working in Mike's lab (among them was Husam, whom we lost on the first day). I didn't know what we were doing half the time; I just knew it was important.

Among the Saudis chosen to "assist with research" was Abdullah. What I knew about him before I knew anything else was that he was the son of a sheikh—the same sheikh I had bought with money my granny had given me for my birthday. I skidded over to Eddie:

"What the hell is going on here?"

"Eddie! That's my bike! What are you doing? You can't sell it!"

"Honey, it's okkayyy."

I ran over to my mom. She shrugged her shoulders. "Sorry, Lex, but already sold it. We can't just take it back." So I watched my childhood roll away with a stranger's hands gripping the handle bars.

For the first few months Abdullah worked in the lab, he refused to eat lunch with Linda and me because we were women. Eventually, we persuaded him to have lunch with us on East Colfax and only lose it entirely several feet before reaching my desk. Abdullah's eyes were glued to a soccer ball flying across my computer screen. He didn't break contact with the monitor even as his hands struggled to find their way into one of the three bags of "Flamin’ Hot" Cheetos, Lays, and Fritos that were strewn across my desk. I pulled Linda out in the hall.

"What the hell is going on here?"

Linda just shrugged her shoulders. "The speakers on his computer don't work, and he wants to watch the soccer games."

"So, you are more likely to become alcoholic if you drink Ya know: beer, wine, hard liquor."

"What is the difference?"
Some months after the biochemistry catastrophe, Abdullah asked Linda and me to accompany him to the lounge. A miniature, white teacloth covered one of the tables. On the teacloth rested a ceramic teapot enwrapped with elegant Arabic script, surrounded by three tiny teacups. Candid dates and baklava were arranged beautifully on saucers. He poured the tea in our cups with such care and precision and eagerly watched our faces as we brought the steaming liquid to our lips. He smiled with his eyes.

It was the end of Ramadan, and Abdullah wanted to share the celebration with us. Abdullah explained that Ramadan was the Islamic month of fasting, when Muslims refrain from drinking, eating, having sex, and smoking during daylight. He told us that this practice was important because it was about resisting temptation, finding humility, exercising patience, and being submissive to God. He told us that, by cleansing his soul, he found freedom. So, Abdullah sat and shared his tea with two American women on the holiest of Muslim holidays.

I remember when Eddie would celebrate Ramadan: in the early fall dawn, he would grab a freshly prepared pumpkin pie from the fridge (a product of my mother's insomnia), snatch a fork from the silverware drawer, slam it down on the table with the pie, and proceed to savagely shove forkfuls of pie into his mouth until the whole turned to half. I never saw him pray, and I never even heard him explain what Ramadan was, so, when it rolled around every year, all it meant to me was half-eaten pumpkin pies punctured with metal prongs and deserted on the bottom shelf of the refrigerator.

During the month of Ramadan one year, Eddie had a peculiar guest over for dinner. He was a man of few words, saying little to nothing during the three-course meal, save for a few phrases exchanged in harsh Arabic with Eddie. Eddie sat with his arms crossed over his chest, his downturned lips displaying his obvious dissatisfaction with the world or my mother's pumpkin pie—I couldn't decide which. He would let a chunk of beef or lamb roll over his tongue and then would begin working his jaw against the meat, viciously tearing it into little pieces while he let out small grunts. He chewed and grunted, chewed and grunted. He had black, piercing eyes and a grim silence that clouded his entire face. A few times when the chatter was buzzing and the forks were scraping desperately against plates, this man's piercing eyes found his way to mine, his eyes turning a peculiarly yellow color as he stared at me. I forced a smile, trying to please him, to make him feel welcome in our home.

Eddie was a nationalist blind with pride and rage founded in revenge. And so was I. But Eddie would live and die in his hatred. He had murdered his own soul, and I thought he had permanently tainted mine. But mine had been salvaged because I could still find something holy to condone his prejudices, and for that, I could never forgive him.

Eddie was a nationalist blind with pride and rage founded in revenge. And so was I. But Eddie would live and die in his hatred. He had murdered his own soul, and I thought he had permanently tainted mine. But mine had been salvaged because I could still find something holy to condone his prejudices, and for that, I could never forgive him.

Eddie was a nationalist blind with pride and rage founded in revenge. And so was I. But Eddie would live and die in his hatred. He had murdered his own soul, and I thought he had permanently tainted mine. But mine had been salvaged because I could still find something holy to condone his prejudices, and for that, I could never forgive him.

Eddie was a nationalist blind with pride and rage founded in revenge. And so was I. But Eddie would live and die in his hatred. He had murdered his own soul, and I thought he had permanently tainted mine. But mine had been salvaged because I could still find something holy to condone his prejudices, and for that, I could never forgive him.

We ended up finding Husam the day we lost him. After searching for an hour, I was called back to the lab. Husam had never even left. We couldn't see him because he was a few lab benches away, kneeling on a delicate rug, his bottom resting on his heels with his arms locked out in front of him, his head slung low between his shoulders. His palms were pressed into the tiles and his lips were barely brushing the rug. He was facing East. Praying.

After sharing his post-Ramadan feast, Abdullah inexplicably sent me an email with pictures of war in the Middle East. There was no text in the body of the email, no captions—just the truth of a plain picture. I couldn't respond; I didn't know how.

I never heard Abdullah speak badly of another race or faith. Abdullah's Qur'an was sacred, and Islam was part of an intrinsic force that stitched together the fabric of his existence. It helped him make sense of the world when everything else seemed lost.

Eddie poured Islam on his smoldering contempt like gasoline. The Qur'an was his scapegoat for hatred—the same hatred that had burned thousands of Americans to the ground. He used something holy to condone his prejudices, and for that, I could never forgive him.

Eddie was a nationalist blind with pride and rage founded in revenge. And so was I. But Eddie would live and die in his hatred. He had murdered his own soul, and I thought he had permanently tainted mine. But mine had been salvaged because I could still find something holy to condone his prejudices, and for that, I could never forgive him.
In her one-act play Trifles, Susan Glaspell gives a disturbing account of the dynamics between men and women at the turn of the 20th century. Her play focuses on a murder trial she investigated while working for a reporter in Iowa from 1899-1901, and it gives one a glimpse into the struggles that women faced during this time period. Even though Minnie Wright has murdered her husband, one cannot help but feel sympathy for the woman because the women did not actually know the people have made a strong argument against the two women's destroying her. Even if Minnie proved the grounds for divorce, which would include issues such as adultery and assault (Kay). As shown by the history of the laws the husband's side, it is very unlikely that Minnie would have been able to obtain a divorce based on assault. So, despite Dershowitz's argument that there is always a way out of an abusive situation, this was not clearly the case for Minnie. Despite the arguments against the morality of the women's actions, Mrs. Peters and Mrs. Hale were justified in concealing the evidence of Minnie's crime has been the source of much debate. In fact, some people have made a strong argument against the two women's decisions. Their argument asserts that Minnie has committed murder, and murder is a heinous crime that should not go unpunished. Furthermore, they argue that even if Minnie murdered her husband because he was abusive, there is always a "way out" of an abusive situation and she was not doing it to protect her own life. As mentioned above, it is a widely accepted view that killing in self-defense is morally permissible, especially when it is the only solution in a particular situation. This view is reflected in the law, which "expressly authorizes a person to use deadly force, if necessary, to prevent his imminent death or serious injury" (Dershowitz 7). The question, then, is whether Minnie acted in self-defense, which would justify her actions as well as Mrs. Peters and Mrs. Hale's decision to hide the evidence. The opponents' argument about the wrongness of murder is refuted by the overwhelming evidence that Minnie killed her husband in self-defense. The women indicate that they know that John is a cruel man, and Mrs. Hale says that he is "hard and cruel...like a raw wind that gets to the bone" (16). Mrs. Hale also points out that John was "close" (13), or cheap, which indicates that he did not provide properly for his wife and was not concerned with her well-being. Mr. Hale says that his wife's wish did not make "much of a difference to John" (10). Thus, it seems that John did not treat his wife well, and the women's comments indicate that he was likely abusive towards her. However, the most compelling evidence of John's brutality is the fact that he strangled Minnie's bird. Killing a small animal highlights a certain morbidity in John's personality, and points to the fact that he has violent tendencies that could easily translate into violence against his wife. A study by Arakle et al. finds that although cruelty towards animals does not always inevitably lead to violence toward humans in a chronological way, their findings point to an "association between animal abuse and a host of antisocial behaviors, including violence" (196). It could be argued that Minnie's crime is not comprehensible, but rather, that the women were acting ethically when they concealed the evidence. The opponents' second argument responds to this self-defense argument. They argue that even if John was abusive towards his wife, and even if Minnie was justified in believing that her life was in danger, there is never an "excuse" for murder based on abuse. This argument is laid out by Alan M. Dershowitz in his book The Abuse Excuse: And Other Canards, So Stories, and Evasion of Responsibility. Dershowitz defines the "abuse excuse" as the "legal tactic by which criminal defendants claim a history of abuse as an excuse for violent retaliation" (3), and he argues that it is becoming a license to kill under the current legal system. He argues that this kind of attitude towards murder legitimizes vigilantism and is a dangerous argument that should never allow murderers to escape responsibility. However, they fail to recognize that Minnie acted in self-defense, which would justify her actions as well as Mrs. Peters and Mrs. Hale would argue that even when abuse has occurred, criminals are still adult, moral agents with functioning moral faculties who deserve to be held accountable for their actions (Arenella 1). The mere fact that a person is abused does not negate his or her moral obligation not to use violence against the abuser. Those who agree with this view say that there is always a "way out" of an abusive situation, and there are no grounds for a self-defense argument in cases that do not involve imminent death or serious injury. However, this is not in this case, for the fact that she murdered her husband in his sleep, so they would argue that she should be fully punished for her crime. They would therefore conclude that Mrs. Hale and Mrs. Peters were unjustified in concealing the evidence of Minnie's crime. Despite the straightforwardness of this argument, abuse (or rather, the abusive situation) is an "excuse" for Minnie's actions, as well as Mrs. Hale and Mrs. Peters' decision to hide the evidence of her crime. Despite Dershowitz's claim that there is always a "way out," Minnie did not have any other way to escape her situation and preserve her life. The divorce and marriage laws during the early twentieth century and her psychological condition had denied Minnie the ability to remedy her abusive relationship. During this time period, the law found it acceptable for a husband to be abusive towards his wife due to the fact that he was legally liable for her actions, and thus had the power to "correct" her behavior (McVey). The United States Supreme Court ruled in favor of the right of husbands to physically abuse their wives in State v. Phelps (1915), State v. W. H. Tate (1914), and they have denied that the law consider her husband's violence as a "reasonable" belief (Dershowitz 14). Thus, Minnie's actions would not be considered as an "excuse" for her actions, and this makes her the only person who is able to escape her husband's violence. Women who are abused by their husbands feel fearful of retaliation if they attempt to leave, and if their attempt fails they are likely to suffer further abuse. Thus, Minnie would naturally be afraid to attempt to leave her husband. Mrs. Hale notes that she and Minnie had grown apart, and she feels guilty for not being able to help Minnie with her situation. She says, "I stayed away because it weren't cheerful...and that's what you ought to have come...I wish I had come over to see Minnie Foster sometimes. I can see now - " (16). She realizes that it would have been easier for Minnie to deal with her abusive husband if she had supported her and offered her a way to escape. Because Minnie had lost her connections with Mrs. Hale, and since she was not involved with her community because she was embarrassed by her husband's actions, she was left to feel helpless in her situation. The battered woman syndrome means that options for escape that other women would normally consider are seen out of the question for Minnie, and the "unreasonable—some killing to her" arguments. She could have been sympathetic to her situation, Minnie would have been murderers her husband as the only way to escape his abuse. Women who are abused suffer from depression, and their self-confidence is eroded. They often come to blame themselves for the abuse, and they are manipulated into thinking that they deserve to be treated violently. Due to these psychological factors and the legal limitations of the time, Minnie's rationality was damaged, and she should not be held responsible for her actions. The third argument put forward by those who believe that the women acted unethically asserts that despite all of the evidence that Minnie was acting in self-defense and had a reasonable way to escape her husband's cruelty, the law and the courts should determine the morality of her actions and the punishment that she should face. This view points out the fact that Mrs. Hale and Mrs. Peters' inaction contributed to Minnie's murder, and they should be held responsible for the way to know the circumstances of the murder. Thus, the women had no authority to judge whether the evidence of Minnie's motive should be concealed or not, regardless of whether she was justified. They should have revealed the evidence and allowed justice to be

---

**Murder, Abuse, and Morality in Trifles**

By Breanna Hyrcka

---

*(OCCASIONS 2012)*
A Nonlinear Dynamical Analysis of Asymmetries in Runners with Unilateral Transtibial Amputations

By Nicole Lock

Abstract

The dynamical nature of human locomotion permits the application of nonlinear dynamic analysis to time-series gait data. Conventional methods in biomechanics are sufficient for calculating averages but do not capture subtle features of how the gait pattern changes over time. Recent exploration of applying nonlinear dynamic tools to gait has been focused primarily on the stability of walking. Little research has assessed stability of running in terms of nonlinear dynamics. Furthermore, if nonlinear dynamics can help explain the likelihood of falling while walking, then the nonlinear dynamical analysis of running can help evaluate how asymmetries of runners with transfemoral amputations who use prostheses affect stability.

To quantify stability, this study measured the maximum Lyapunov exponent (\(\lambda\)) of time-series data from runners with biologically intact legs and runners with unilateral transfemoral amputations.

The results demonstrate that lower-limb mechanics are less stable for the affected leg of runners with unilateral transfemoral amputations than the unaffected leg or the combined bilateral legs. Furthermore, these results also show that the center of mass for runners with intact biological legs is slightly less stable than runners with unilateral transfemoral amputations. This suggests that asymmetries might lead to instability in the legs but are compensated by increased control of the core.

Works Cited


biomechanical studies traditionally measure stability based on kinematics but ignore the dynamical nature of locomotion and how it changes over time. For a more meaningful quantification of stability, nonlinear dynamical analysis determines how human locomotion resists change after perturbations. Previous research has shown promising results for estimating maximum finite-time Lyapunov exponents (\(\lambda\)) from human walking kinematics (Dingwell, 1999), but few have applied the technique to human running. In this study, we investigated the stability of running across a range of speeds and how it relates to asymmetry, using \(\lambda\) analysis, by comparing runners with unilateral transfemoral amputations (AMP) against runners with intact biological legs (NA). We evaluated the stability of AMP runners because, in general, many report a fear of falling during running and experience more falls than NA runners (Miller, 2001). Rehabilitation techniques attempt to increase stability in AMP subjects, specifically by addressing asymmetries between the affected and unaffected leg (Vancejk, 2008). Therefore, quantifying dynamic stability promises to be an important tool for identifying people who might be at a greater risk of falling or for evaluating efficacy of rehabilitation programs from an assessment of asymmetry. We used nonlinear time-series analysis on motion-capture data from subjects running on a treadmill and found that the dynamics of the affected leg of AMP runnerslargeduring the transition phase – for women (18). This expressions sums up the fact that the men will be the ones who evaluate the reasonableness of John Wright’s abuse against Minnie, which clearly does not seem morally right. Even Mrs. Peters, who is “married to the law” (40), feels sympathetic for Minnie’s decision, and this should be fairly reflected in her punishment. The law is not always morally correct, and thus leaving it up to the authorities to decide what is just is not always the most ethical choice. Because of these factors, the women could not be sure that the court would fairly take Minnie’s abuse into account.

A second argument against letting the law decide Minnie’s punishment is the fact that the legal system is completely dominated by men and their point of view, and thus would not allow Minnie to be fairly judged. Orit Kamir illuminates this point, noting that “the existing legal system ‘in the play’ manifests male domination of women. It is almost completely a male dominated enterprise” (561). Thus, the legal system would not find anything out of the ordinary in the fact that John Wright was brutal and controlling in relation to his wife. The men will be the ones who will decide how much of Minnie’s crime, and the structure of the legal system stacks the odds distinctly in her husband’s favor. They will be the ones who frame the evidence in the courtroom, and Kamir correctly points out that “[i]t must be remembered women’s perspective, John Wright was a good man” (362). He also says that Mrs. Hale says that “he didn’t drink, and kept his word as well as most . . . and paid his debts” (16). From the men’s point of view, this means that John Wright is as good a man as any. On the other hand, the men are on the side of Mrs. Peters who love Minnie’s character and her kindness; Mrs. Hale says that she “loved her. The men and their point of view, and would thus not allow Minnie to be used to reduce a sentence, the system, the women chose the morally right path and concealed the evidence of Minnie’s crime. The works cited

The dynamical nature of human locomotion permits the application of nonlinear dynamic analysis to time-series gait data. Conventional methods in biomechanics are sufficient for calculating averages but do not capture subtle features of how the gait pattern changes over time. Recent exploration of applying nonlinear dynamic tools to gait has been focused primarily on the stability of walking. Little research has assessed stability of running in terms of nonlinear dynamics. Furthermore, if nonlinear dynamics can help explain the likelihood of falling while walking, then the nonlinear dynamical analysis of running can help evaluate how asymmetries of runners with transfemoral amputations who use prostheses affect stability.

To quantify stability, this study measured the maximum Lyapunov exponent (\(\lambda\)) of time-series data from runners with biologically intact legs and runners with unilateral transfemoral amputations. The results demonstrate that lower-limb mechanics are less stable for the affected leg of runners with unilateral transfemoral amputations than the unaffected leg or the combined bilateral legs. Furthermore, these results also show that the center of mass for runners with intact biological legs is slightly less stable than runners with unilateral transfemoral amputations. This suggests that asymmetries might lead to instability in the legs but are compensated by increased control of the core.

I. Introduction

Conventional gait studies collect kinematic data over a short period of time, usually to 10 to individual strides (Dimino & Cusumano, 2000), time-normalize the data for each stride and average the data across strides. The determined nature of the gait pattern for a healthy stride can then be compared against individual strides of people with pathological gait patterns. The most comprehensive clinical gait analyses today include an assessment of clinical measures, electromyography (EMG) activity, 3D joint kinematics, force data, and balance assessments. Although an evaluative method contains valuable information, a comprehensive examination requires more than one due to limitations for each (Rose et al., 1991). In addition, these evaluative techniques disregard the inherent dynamical nature of locomotion (Dimino & Cusumano, 2000). Time-normalizing and averaging of strides can distort the original data such that these methods ignore the temporal variations in the gait patterns (Hau et al., 2000).

Nonlinear time-series analysis, in contrast, elucidates the dynamics of the gait pattern and its sensitivity to perturbations. This novel approach has great potential but can accurately calculate the necessary parameters only when large sets of continuous data are available. The advantage of motion capture technology allows for 3D spatiotemporal data for many gait cycles to be collected via cameras and reflective markers placed on the body. The data then need to be embedded for further processing (Brujin, 2010). “Embedding” refers to the methods necessary to define the state space of a variable, in which a minimum set of variables fully describes the system and its response. The embedding method is necessary for determining the number of nonlinear techniques are available to quantify the stability of the gait pattern.

Previous studies have calculated the maximum Lyapunov exponent (\(\lambda\)) of walking because it captures the stability of the system and describes the predictability of the gait pattern over time. A \(\lambda\) greater than zero suggests a more chaotic gait pattern; as \(\lambda\) increases, so does the sensitivity of the system to perturbations. Dingwell et al. (1999) found that \(\lambda\) is a promising calculation for characterizing the local dynamic stability of human walking. Yet, prior research has not applied this method to human running, a fundamentally different locomotor pattern than walking.
We propose that nonlinear analysis and the $\lambda$ can also precisely measure stability of human running.

Our results indicate that larger hip angles contribute to overall gait stability, such as bilateral symmetrical kinematics. Seeley et al. (2008) demonstrated that healthy gait is bilaterally symmetrical, even though slight asymmetries might develop to accommodate haematological differences (Gialelli et al., 1998). In contrast, Skinner & Effeny (1985) found significant asymmetries in the lower-limb kinematics of people with leg amputations when they walk. A recent study found that running with bilateral lower-limb symmetry produces better running performance in runners with intact legs (Weyand et al., 2009). In a subsequent study, the same group demonstrated that runners with unilateral amputations could not apply as large a force from the prosthetic leg as biological musculature and structure. Therefore, the difference in forces and elastic energy return result in asymmetry for runners with unilateral amputations (Grabowski et al. 2009).

Although an observer can easily notice ‘limping’ asymmetry, a nonlinear dynamical analysis comparing runners with intact biological legs against runners with unilateral transtibial amputations might reveal the subtle effects of lower-limb asymmetries on stability. We first hypothesize that stability decreases at faster speeds in non-amputee runners. We tested both hypotheses with nonlinear time-series analysis of motion-capture data from runners with unilateral transtibial amputations because symmetry in the lower limbs might decrease at faster speeds in non-amputee runners. England & Park City, UT). Each running trial consisted of at least ten strides.

Subjects started the series of running trials at 3 m/s; each subsequent speed was increased by 1 m/s. After warming up and accommodating to the treadmill, the individual stood with a wooden block under the unaffected leg to unload the affected leg. Distance from the greater trochanter of the femur to the floor was measured. Leg length was defined as the vertical distance between the anterior superior iliac spine and posterior superior iliac spine, left and right knee, left and right 3rd metatarsal, left and right thigh, and bony landmark of the sacrum. Motion-capture cameras (Vicon Motion Systems, Oxford, UK) collected spatial data at 300 frames/sec, which were then used to calculate joint angles. We specifically used knee and hip joint angles to assess lower-limb dynamics as well as $x$-coordinates and $z$-coordinates of the sacrum marker to examine the center of mass.

III. Nonlinear Analysis

Dynamical systems, such as human locomotion, can be expressed as an initial value problem that consists of an abstract state space. While coordinates describe the dynamical state at an instant in time, the future trends of all state variables can be found from the present coordinate values. If there is a unique correspondence between each speed, the system is defined as ‘deterministic’, but if there is more than one outcome chosen from some probability distribution, then the system is deemed ‘stochastic’. The variable of temporal delay and embedding dimension parameters. The Lyapunov exponent $\lambda$ corresponds to the system’s rate of divergence for neighboring trajectories with differing initial conditions and is defined as:

$$\lambda = \lim_{\tau \to 0} \frac{1}{\tau} \ln \left| \frac{f(x)}{f(0)} \right|$$

(3)

where $s_i(t)$ are the eigenvalues of the linear differential equation governing the effects of a small variation in the initial conditions (Braddock, 2008). There exist roughly $d$ axes as dimensions in the state space. Therefore, each $\lambda$ measures the expansion rate in every ‘direction’ for two neighboring trajectories. A positive $\lambda$ signifies exponential growth in which a perturbation on the system might result in trajectories that are exponentially divergent. It can be used to determine the minimum possible dimension to describe the system is continuous. Given a point, $p_i$, in the embedding space, the correct embedding parameters must first be established to embed discrete time-series data of a single variable $x$. A variety of algorithms estimate the dimension $d_i$ and delay $\tau$ parameters. In this study, we employed the TISEAN software package (http://www.mpips-dresden.mpg.de/~tisean/Tisean_3.0.1/index.html) that uses the time-delayed mutual information method to determine embedding delay $\tau$ and a filter, mutual information considers nonlinear correlations between successive points. The variable $\tau$ must be large enough that the successive points are significantly different and small enough that the system does not lose memory of its past state. We also calculated the $\lambda$ values in the i-th interval and the joint probability, $p_{ij}(\tau)$, that an observation falls to the i-th interval and the observation time $\tau$ later falls into the j-th interval:

$$\lambda = \lim_{\tau \to 0} \frac{\sum_{i,j} p_{ij}(\tau) \ln \frac{p_{ij}(\tau)}{p_i(\tau) p_j(\tau)}}{\tau}$$

(4)

A reasonable time delay can be chosen as the first minimum at a certain value of $\tau$ from the mutual information, when the nearby trajectory point dynamics are somewhat uncorrelated.

The average is then obtained for several different reference points. If $\lambda$ exceeds a given threshold, the point has a false nearest neighbor.

We can determine the maximal Lyapunov exponent, a quantitative measurement of predictability, from the embedding delay and embedding dimension parameters. The Lyapunov exponent $\lambda$ corresponds to a state space with the same properties as the space described by the system’s original variables recorded from human gait (Perc 2003). While a single scalar measurement seems insufficient to determine the entire state space, it can be accomplished because all the system’s variables inherently depend on one another.

The correct embedding parameters must first be established to embed discrete time-series data of a single variable $x$. A variety of algorithms estimate the dimension $d_i$ and delay $\tau$ parameters. In this study, we employed the TISEAN software package (http://www.mpips-dresden.mpg.de/~tisean/Tisean_3.0.1/index.html) that uses the time-delayed mutual information method to determine embedding delay $\tau$ and a filter, mutual information considers nonlinear correlations between successive points. The variable $\tau$ must be large enough that the successive points are significantly different and small enough that the system does not lose memory of its past state. We also calculated the $\lambda$ values in the i-th interval and the joint probability, $p_{ij}(\tau)$, that an observation falls to the i-th interval and the observation time $\tau$ later falls into the j-th interval:

$$\lambda = \lim_{\tau \to 0} \frac{\sum_{i,j} p_{ij}(\tau) \ln \frac{p_{ij}(\tau)}{p_i(\tau) p_j(\tau)}}{\tau}$$

(4)

A reasonable time delay can be chosen as the first minimum at a certain value of $\tau$ from the mutual information, when the nearby trajectory point dynamics are somewhat uncorrelated.

We then input the determined delay parameter and the time-series data to find the false nearest algorithm to find the dimension. Finally, we calculated the $\lambda$ for each data set using the respective delay parameter and dimension with the lyap $\lambda$ algorithm. We used this method to determine the average $\lambda$ and standard deviation for the $x$-, $y$- and $z$-coordinates of the sacrum and for both knee and hip angles. The average $\lambda$ for the knee and hip angle of the AMP runners were calculated at speeds ranging from 3 m/s to 9 m/s at 1 m/s increments. The x-coordinates corresponded to the forward motion, the y-coordinates corresponded to the medio-lateral motion, and the z-coordinates corresponded to the vertical motion.

While the primary data processing consisted of nonlinear dynamical techniques, we employed statistics to illustrate the differences and similarities between each group. We performed Welch two sample t-tests between (1) the NA joint angles and AMP unaffected leg joint angles, (2) the NA joint angles and the AMP affected leg joint angles, and (3) the AMP unaffected leg joint angles and the AMP affected leg joint angles. In addition, we fit linear models between (1) speed and NA joint angles, (2) speed and AMP affected leg joint angles, and (3) speed and AMP unaffected leg joint angles to clarify the relationship between speed and stability. Additionally, we performed Welch two sample t-tests between the average $\lambda$ results of NA runners and AMP runners in each group. We also performed a correlation analysis of NA runners in all directions and AMP runners in all directions at each speed.

IV. Results

A. Hip Joint Angle

The results of the hip joint angle data support our first hypothesis such that running at faster speeds correlated to less stability in relation to increased $\lambda$ (Figure 1A). The average $\lambda$ for the hip angle was $0.0727 \pm 0.00238$, $R^2 = 0.4703$, $p = 0.00544$. For the AMP affected leg, the average $\lambda$ was $0.1125 \pm 0.0037$, $R^2 = 0.4843$, $p = 0.0041$.

$$\lambda = 0.0621 + 0.00544, R^2 = 0.4791, p = 0.00544$$

(5)

For the AMP affected leg nearly doubled from $0.0752$ at 3 m/s to $0.1221$ at 9 m/s, with a significant correlation between speed and $\lambda$ ($\lambda = 0.1027 \pm 0.00238$, $R^2 = 0.4751$, $p = 0.00514$). Furthermore, the average $\lambda$ of the AMP affected leg nearly doubled from 0.0752 at 3 m/s to 0.1221 at 9 m/s, with a significant correlation between speed and $\lambda$ ($\lambda = 0.0621 \pm 0.0032$, $R^2 = 0.8630$, $p = 0.00350$).

Technically, the above mathematical technique applies only when the system’s equation has been determined. Because we have only time-series data in this study, we approximate the analytical math with numerical algorithms within the TISEAN software package. The TISEAN software outputs the logarithmic stretching factor at each iteration for the prescribed dimension. Because the embedded dimension serves as the minimum possible dimension to describe the system, it should converge as the dimensions increase to what is appropriate. We processed all time-series data using MATLAB functions that link to the TISEAN software package. We first used the mutual algorithms to find the delay parameter for each individual data set. We then input the determined delay parameter and the time-series data in to the false nearest algorithm to find the dimension. Finally, we calculated the $\lambda$ for each data set using the respective delay parameter and dimension with the lyap $\lambda$ algorithm. We used this method to determine the average $\lambda$ and standard deviation for the $x$-, $y$- and $z$-coordinates of the sacrum and for both knee and hip angles. The average $\lambda$ for the knee and hip angle of the AMP runners were calculated at speeds ranging from 3 m/s to 9 m/s at 1 m/s increments. The x-coordinates corresponded to the forward motion, the y-coordinates corresponded to the medio-lateral motion, and the z-coordinates corresponded to the vertical motion.
average $\lambda$ of AMP affected leg ($p = 0.0073$). The results additionally supported our second hypothesis such that the average $\lambda$ of NA was smaller than that of AMP affected leg at all speeds (Table 1). Moreover, the average $2\alpha$ of AMP affected leg were significantly larger than that of AMP unaffected leg ($p = 0.023$).

**B. Knee Joint Angle**

Similar to the results of the hip joint angles, the results of the knee joint angles supported our first hypothesis. At faster speeds, stability decreased as shown by increased average $\lambda$ (Figure 1B). The average $\lambda$ of the NA runners increased from 0.0586 at 3 m/s to 0.1894 at 9 m/s, with a strong positive linear fit between speed and average $\lambda$ ($\lambda = 0.0793 + 0.0106v$, $R^2 = 0.88$, $p = 0.00103$). For the AMP unaffected leg, the average $\lambda$ increased from 0.1026 at 3 m/s to 0.1381 at 9 m/s, resulting in a strong positive relationship between speed and average $\lambda$ ($\lambda = 0.0852 + 0.00627v$, $R^2 = 0.88$, $p = 0.00105$).

Our second hypothesis, that the AMP runners are less stable than the NA runners, was not supported by the results of the knee joint angles data. We found no significant differences between the $\lambda$ of the NA and the $\lambda$ of the AMP unaffected leg ($p = 0.976$) or the $\lambda$ of the AMP affected leg ($p = 0.14$). But the results calculated from the $\lambda$ of the AMP affected leg revealed a $p$-value of 0.068. At all tested speeds, the AMP affected leg data resulted in larger $\lambda$ values than the other two groups (Figure 1B).

**C. Sacrum Cartesian Coordinates**

The results from the $x$-coordinates and $y$-coordinates of the marker placed on the sacrum of the NA and AMP runners further supported our first hypothesis such that as speed increased, the average $\lambda$ increased (Figure 2A and 2B). But a stronger positive correlation between average $\lambda$ and speed occurred for the $x$-coordinates of the NA runners ($\lambda = 0.0017 + 0.0011v$, $R^2 = 0.65$, $p = 0.00197$) than that of the $y$-coordinates for the NA runners ($\lambda = 0.0004 + 0.0003v$, $R^2 = 0.47$, $p = 0.00197$) and for the AMP runners ($\lambda = 0.0010 + 0.0009v$, $R^2 = 0.48$, $p = 0.00235$). On the other hand, the average $\lambda$ calculated from the $z$-coordinates of the sacrum marker for NA and AMP runners did not positively correlate to speed. These log-log linear models suggest a positive correlation between average $\lambda$ and speed for NA runners ($\lambda = 0.135 - 0.00159v$, $R^2 = 0.09$, $p = 0.5153$) and for AMP runners ($\lambda = 0.150 - 0.00078v$, $R^2 = 0.52$, $p = 0.0467$). Thus, results calculated from the $x$-coordinates and $y$-coordinates supported the first hypothesis but the results calculated from the $z$-coordinates did not support the first hypothesis.

By comparing the $\lambda$ of NA runners and AMP runners across speeds in all directions, we did not find significant differences for the $x$-coordinates ($p = 0.953$) or the $y$-coordinates ($p = 0.225$) but we found a significant difference for the $z$-coordinates ($p = 0.0209$).

We determined the average $\lambda$ of the $x$-coordinates to be larger for AMP runners than NA runners at the slower speeds, between 3 m/s and 6 m/s (Figure 2A). At the faster speeds, between 7 m/s and 9 m/s, the average $\lambda$ of NA runners was greater than the average $\lambda$ of AMP runners. At all speeds, we calculated the average $\lambda$ of NA runners to be larger than the average $\lambda$ of AMP runners from the $y$-coordinates (Figure 2B). Furthermore, the average $\lambda$ of NA runners was larger than the average $\lambda$ of AMP runners for the $z$-coordinates at all speeds except 4 m/s (Figure 2C).

Table 2 - Average $\lambda$ of CARTESIAN coordinates of the sacrum for the x-, y- and z-coordinates at speeds ranging from 3 m/s to 9 m/s.

<table>
<thead>
<tr>
<th>Speed (m/s)</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\lambda_{\text{NA}}$</td>
<td>0.094</td>
<td>0.073</td>
<td>0.069</td>
<td>0.065</td>
<td>0.064</td>
<td>0.063</td>
<td>0.063</td>
</tr>
<tr>
<td>$\lambda_{\text{AMP}}$</td>
<td>0.101</td>
<td>0.080</td>
<td>0.076</td>
<td>0.072</td>
<td>0.071</td>
<td>0.070</td>
<td>0.069</td>
</tr>
</tbody>
</table>

**Discussion**

In this study, we explored the utility of applying nonlinear dynamics to running mechanics. We calculated the Lyapunov exponent ($\lambda$) as a measure of stability, from time-series data of hip angles, knee angles, and Cartesian coordinates of the sacrum at various running speeds ranging from 3 m/s to 9 m/s. Using these measures we compared the gait dynamics of runners without amputations (NA) against runners with unilateral transtibial amputations (AMP). We expected the Lyapunov exponent to increase as running speed increased because runners become less stable at higher speeds. We predicted the Lyapunov exponent would be greater for AMP runners than NA runners because runners with unilateral transtibial amputations usually experience less stability than runners with amputations.

Our results indicate that stability decreases as running speeds increase. For both NA runners and AMP runners, the $\lambda$ increased for the hip angles, knee angles and x- and y-coordinates of the sacrum. Although the $\lambda$ decreased for the $z$-coordinates of the sacrum as running speed increased, Seliktar & Mizrahi (1996) suggested that vertical forces do not meaningfully represent instability while walking for people with transtibial amputations. In this case, when the $z$-coordinates are not considered, the results support our first hypothesis such that stability decreases as speeds increase. This relationship may be attributed to the shortened time between strides to react to perturbations or the changing environment.

In regards to our second hypothesis, the results suggest that lower-limb mechanics are less stable for the affected leg of runners with unilateral transtibial amputations. Furthermore, the significant differences between the affected and unaffected leg imply an asymmetrical gait pattern for runners with unilateral transtibial amputations. The asymmetry in AMP runners might have required them to maintain better control of their center of mass during running such that the $\lambda$ of the AMP runners were slightly less than that of the NA runners. Overall, the results support the hypothesis that asymmetry results in instability. Additionally, the nonlinear dynamic techniques allowed us to reveal certain features of stability (running at faster speeds and running with a unilateral prosthesis) that might not have been found from traditional analysis techniques.

To support the usage of nonlinear dynamic analysis as an accurate representation of stability, future studies should relate nonlinear dynamic measurements to other measurements of instability, like self-perceived stability and number of falls. A more in-depth analysis could compare the Lyapunov exponent of externally stabilized running (Arellano & Kram, 2011) against the Lyapunov exponent of destabilized running. In these cases, the $\lambda$ would need to decrease when a runner is stabilized and increase when the runner is destabilized to show the meaningfulness of nonlinear dynamic analysis and the Lyapunov exponent. The most prevalent limitations to nonlinear dynamic analysis of time-series data occur due to the set-up of the motion-capture systems. If the cameras do not consistently recognize the reflective markers throughout the recording process, the incomplete data require substantial post-processing that could destroy the inherent dynamics of the gait pattern. Overall, if the proposed study demonstrates reliable results, nonlinear dynamic analysis might become a useful application for designing rehabilitation programs for instable walkers and runners.


“Balance the cost of the soul you lost, with the dreams you likely sought. Are you under the power of gold?” – Dan Fogelberg

It’s been sixteen years and I’m still going strong. They always said I’d make a brilliant salesperson. Hell, they all said I’m brilliant. But, is it just a relative term? Brilliant, compared to what? Was it a lame attempt at flattery that would get them nowhere? I’ll give them credit. I think they were actually being genuine in their estimation of who I presented myself to be. I could work it as well as the best of them. I always chose to take the path less traveled, in my pursuits, my education and within the confines of my job. You could call it a sort of rage against the machine. It became a pride thing for me. Of them. I always chose to take the path less traveled, in my pursuits, my education and within the confines of my job. You could call it a sort of rage against the machine. It became a pride thing for me. Sometimes fabricated, sometimes innate.

My grandfather always said three things counted in life. Travel. Education. Relationships. The travel would offer you perspective. The education would give you wheels. Relationships would give you both networking and an increased understanding of others and as a result, an increased awareness of yourself. I’m sure he never expected me to level with his wisdom in the ways I’ve chosen. People are people, and everyone has something to offer. I would be enlightened to this truth over the years in a surprising manner during my extended stay in this rather non-conventional career. Although the money would prove to be my largest gain, it was the conversations with the customers that I found to be the most satisfactory part of the job.

“How are you doing?” I said, almost as if I was looking into the eyes of a customer.

“Pretty good,” he answered. “And you?”

“I’m doing well.”

“Good.”

“I’ve been here for a while now,” he said, as if he was trying to make a sale.

“I’ve been here for a while now,” I replied, as if I was trying to make a sale. “And you?”

“I’ve been here for a while now,” he said, as if he was trying to make a sale.

“I’ve been here for a while now,” I replied, as if I was trying to make a sale. “And you?”

“I’ve been here for a while now,” he said, as if he was trying to make a sale.

“I’ve been here for a while now,” I replied, as if I was trying to make a sale. “And you?”

“I’ve been here for a while now,” he said, as if he was trying to make a sale.

“I’ve been here for a while now,” I replied, as if I was trying to make a sale. “And you?”

“I’ve been here for a while now,” he said, as if he was trying to make a sale.

“I’ve been here for a while now,” I replied, as if I was trying to make a sale. “And you?”

“I’ve been here for a while now,” he said, as if he was trying to make a sale.

“I’ve been here for a while now,” I replied, as if I was trying to make a sale. “And you?”

“I’ve been here for a while now,” he said, as if he was trying to make a sale.

“I’ve been here for a while now,” I replied, as if I was trying to make a sale. “And you?”

“I’ve been here for a while now,” he said, as if he was trying to make a sale.

“I’ve been here for a while now,” I replied, as if I was trying to make a sale. “And you?”

“I’ve been here for a while now,” he said, as if he was trying to make a sale.

“I’ve been here for a while now,” I replied, as if I was trying to make a sale. “And you?”

“I’ve been here for a while now,” he said, as if he was trying to make a sale.

“I’ve been here for a while now,” I replied, as if I was trying to make a sale. “And you?”

“I’ve been here for a while now,” he said, as if he was trying to make a sale.

“I’ve been here for a while now,” I replied, as if I was trying to make a sale. “And you?”

“I’ve been here for a while now,” he said, as if he was trying to make a sale.

“I’ve been here for a while now,” I replied, as if I was trying to make a sale. “And you?”

“I’ve been here for a while now,” he said, as if he was trying to make a sale.

“I’ve been here for a while now,” I replied, as if I was trying to make a sale. “And you?”

“I’ve been here for a while now,” he said, as if he was trying to make a sale.

“I’ve been here for a while now,” I replied, as if I was trying to make a sale. “And you?”

“I’ve been here for a while now,” he said, as if he was trying to make a sale.

“I’ve been here for a while now,” I replied, as if I was trying to make a sale. “And you?”

“I’ve been here for a while now,” he said, as if he was trying to make a sale.

“I’ve been here for a while now,” I replied, as if I was trying to make a sale. “And you?”

“I’ve been here for a while now,” he said, as if he was trying to make a sale.

“I’ve been here for a while now,” I replied, as if I was trying to make a sale. “And you?”

“I’ve been here for a while now,” he said, as if he was trying to make a sale.

“I’ve been here for a while now,” I replied, as if I was trying to make a sale. “And you?”

“I’ve been here for a while now,” he said, as if he was trying to make a sale.

“I’ve been here for a while now,” I replied, as if I was trying to make a sale. “And you?”

“I’ve been here for a while now,” he said, as if he was trying to make a sale.

“I’ve been here for a while now,” I replied, as if I was trying to make a sale. “And you?”

“I’ve been here for a while now,” he said, as if he was trying to make a sale.

“I’ve been here for a while now,” I replied, as if I was trying to make a sale. “And you?”

“I’ve been here for a while now,” he said, as if he was trying to make a sale.

“I’ve been here for a while now,” I replied, as if I was trying to make a sale. “And you?”

“I’ve been here for a while now,” he said, as if he was trying to make a sale.

“I’ve been here for a while now,” I replied, as if I was trying to make a sale. “And you?”

“I’ve been here for a while now,” he said, as if he was trying to make a sale.

“I’ve been here for a while now,” I replied, as if I was trying to make a sale. “And you?”

“I’ve been here for a while now,” he said, as if he was trying to make a sale.

“I’ve been here for a while now,” I replied, as if I was trying to make a sale. “And you?”

“I’ve been here for a while now,” he said, as if he was trying to make a sale.

“I’ve been here for a while now,” I replied, as if I was trying to make a sale. “And you?”

“I’ve been here for a while now,” he said, as if he was trying to make a sale.

“I’ve been here for a while now,” I replied, as if I was trying to make a sale. “And you?”

“I’ve been here for a while now,” he said, as if he was trying to make a sale.

“I’ve been here for a while now,” I replied, as if I was trying to make a sale. “And you?”

“I’ve been here for a while now,” he said, as if he was trying to make a sale.

“I’ve been here for a while now,” I replied, as if I was trying to make a sale. “And you?”

“I’ve been here for a while now,” he said, as if he was trying to make a sale.

“I’ve been here for a while now,” I replied, as if I was trying to make a sale. “And you?”

“I’ve been here for a while now,” he said, as if he was trying to make a sale.
Coke, all night long. We would sit out on the deck and talk past dark as if he were my mistress in the glass slowly seduced him into oblivion. Ten cows and a bunch of calves had escaped into the backs of our roustabouts over the weight of his torso rounded over from the chair. Years later it would become three-quarters gin and one-quarter tonic drowning his extremely fragile liver in a toxic bath. Despite years of unsavory, non-stop drinking, there was a strategy to his life. He was a West Virginia coal miner who went to barber school and never left his trade. A humble man who helped build the world of stage dancing, Sturgis on his Harley every August. His wrinkled face expressed both wisdom and hardship. He taught me how to play cribbage on the slow nights and introduced me to the wonderful world of Glenlivet. He taught me to屏住呼吸，如果可能的话，让自己的笔触温柔地流过页面，让自己的语言像流水一样自然地流淌。
Now, twenty five years later I was becoming a mirror image of this disparity and I could care less. It took a strip club to invite me back in. I felt as if I were an old friend, a warm drink I had LOVED the numbing effect it had on my emotions. It was my armor. Each sip taken between the flip of mascaras, brush of blush, and consecutive set on stage lent me a growing fortress of seeming protection. That was the seduction as it was sure to drown out the nasty crowd of perverts.

I approached the two front doors of the club carefully reaching only as far as my handle. Still wearing only a state of sobriety, I heard the music and the DJ announcements as I walked through the bar in my everyday wardrobe. I made a point not to look into the eyes of any of the customers sitting in the shadows.

I still remember the moment when he tol told me stories of his past and present. Tennis sneakers spoke of limited income and education. A nice pair of Italian leather loafers and Ascots from the old lent a much better appeal. Most of the time, the quality shoes and apparel meant he was educated and well-heeled. Chances were good that he was most likely in for a little fun to be had with his residual play money from an income adding over six figures. And if his posture spoke of desire for company, this was my guy. While most of the girls walked around and planted their butts in an empty chair with no thought as to how to cater the conversation but only whether he would like a table dance or not, I was much more of a wolf in sheep's clothing. It would be a challenge of my intelligence against his to determine who would be the smarter, more stealthy predator. I had to appear extremely intuitive for him to think he could catch me off balance. So until he fell for the formal, hello I needed to dive into a more captivating conversation.

"So, where are you from and what is it that you do?"

"I'm here on business from Chicago."

"Oh! Great, why did you choose this Five Points, Wrigley, in the southern suburb of Lemont. And I'm sure you've heard of Lake Geneva?"

"Oh, absolutely! We have a vacation home up there."

"Well, wouldn't you know it, my grandmother lives on Lake Geneva!"

"Then you must have heard of Lake Geneva, Wisconsin."

"She'll be ninety-seven in January. She and I ate at Popeye's several times down by the lake last time I was out. What a blast. But, what? What humidity?"

"I love going to Popeye's. I'm usually there at least once a month."

"This was my wise attempt at forcing common ground. My words would fly out at a much more forceful tempo than normal, as if I'd known him for years while my eyes scanned his for a glimmer of interest, or better yet a feeling of comfort and connection. My goal was to keep tugging at who he was until I got him to feel important and to be a worthwhile individual to me, intoxicated by my appearance of hanging on his every word. Enter two more glasses of wine and thirty minutes of intense conversation and I was hopefully on my way to five private dances. It was another one hundred dollars in my purse for the effort. If I could repeat this performance four times a night, in between sets. I would leave the club with a feeling of success. Nights like these abound. I could draw money based on smarts alone. I didn't have to feel as if I'd sold my first for an underbid price. My dignity was still intact.

The night always started out on my level. I set the rules. I was everyone's friend, secretly appraising their individual value and doing my Sunday best to humor them all with my natural grace and appeal. I was smarter than them. I was the silent predator of predators. I'd steal them easily on the run for the risk of losing money. My over-inflated ego sustained my pseudo-strength and removed my sensitivities that would normally render me vulnerable. I bravely entertained NBA stars, Hollywood actors and corporate millionaires. I was the main attraction and I worked hard to keep it that way. My glinting, golden glory flowed from my comedic sense along with my 'peace and love' attitude. I was an unmistakable genius…up until about my fifth glass of wine. Then it would all fall apart.

My intoxication would eventually come spilling out the other side, catching the stern attention of my boss, Matt, many times over. It was clearly evidenced by my outrageous gestures, as well as my slovenly appearance. No, it was more so my capacity to curb my own thoughts. When he would not hold me at reproof, he would write him stories of his past and present. Tennis sneakers spoke of limited income and education. A nice pair of Italian leather loafers and Ascots from the old lent a much better appeal. Most of the time, the quality shoes and apparel meant he was educated and well-heeled. Chances were good that he was most likely in for a little fun to be had with his residual play money from an income adding over six figures. And if his posture spoke of desire for company, this was my guy. While most of the girls walked around and planted their butts in an empty chair with no thought as to how to cater the conversation but only whether he would like a table dance or not, I was much more of a wolf in sheep's clothing. It would be a challenge of my intelligence against his to determine who would be the smarter, more stealthy predator. I had to appear extremely intuitive for him to think he could catch me off balance. So until he fell for the formal, hello I needed to dive into a more captivating conversation.

Leaving the office following Matt's familiar lecture and not knowing if I still had a job, I collected myself and my clothes and walked through the crowded bar with head hanging low. I had this. I went from the star of the show, to drunken loser. The depression on the risky drive home to Boulder washed over me like a cold flood, diluting out the warmness of the alcoholic bath from earlier. It would be another sleepless night.

Uncertainty, Denver, November, 2011.

I couldn't have done so many things, but if I could only stop my mind from wondering what I've left behind and for worrying about this wasted time…maybe someday we will find that it wasn't really wasted time!" – Don Henley, Glen Fry
desperate attempt to stock up for what could be a very long winter season in my life. I am reminded of a recent discussion I had with my best friend who has been an ‘alumni’ of this job for five years now, following her own fifteen-year career in the business.

“Don’t let this job fool you. It has a dark side of its own. The hands of opportunity it presented in the beginning is the ticket we both bought. I can tell you with certainty that those same hands will eventually strangle you and suck the life out of you. I had a home on the coast of Florida, a home on Lake Michigan, drove Ferrari’s and had a quarter million in the bank at age thirty. Now look at me. I am 40 years old, living in a small apartment in Boulder, attending CU on loans I cannot repay and living on a prayer.”

We both sat on the edge of her second-hand futon couch that doubled as her bed. We drank coffee from mugs she got for ninety-seven cents each at the dollar store. A gentle breeze blew in from the mountains just outside her four-hundred square foot apartment, gently tossing sleeves back and forth on her hanging shirts and jackets she got at the thrift store. I believed her words as I’d witnessed this disintegration as well, but I did not want to digest them. I didn’t want to be the next victim.

“What do you think it is? Why is there always a disappointing end to this story, not just for us, but for so many others we’ve known?”

“It’s the energy”, she said. “We spent so much time gaining possessions and money, but all the while falling further and further into spiritual bankruptcy. We sold our flesh for shallow gains. It’s Karma. There comes a time when you are forced to repay that debt whether you like it or not. And there is no aging gracefully in that joint. The customers will remind you of that with brutal honesty” she said with intensity in her eyes, backed up with resurrected anger.

She stepped out of the discomfort of the conversation by temporarily changing the subject. “Do you want another cup of coffee?”

“Definitely. Thanks, girl. I know you are just looking out for me and trying to give me your most honest advice. Guess I’m just not quite ready to surrender yet.”

Her countenance slowly changed as she refilled our mugs. She turned to the window and collected her thoughts.

“It really is better now. I have lost all of my material gains, but I have re-established a peace I’d forgotten about. I wouldn’t trade it for the world” she said with a relieving sigh and convincing nod. “Trust me. I think your time is coming. You will know it, just as I did and so many others before us, as well. You will look around the club one night and finally decide you are done. It won’t occur with anger, but with peaceful acceptance. Then you will collect your things and simply walk out without ever looking back. Just be grateful that it will be a voluntary decision. The most success you will achieve in that job is the ability to tell it goodbye, not the other way around. Remember all those girls who fell into the cracks of addictions, demise and occasionally death at the hands of an abusive partner, drugs or the end of a rope? They were the real victims.”

“…and the beautiful Kaylee will be joining us on stage five” sounded over the loudspeaker in a voice only an overly-enthusiastic DJ could expel.

As I arose from my trance of recollection and my bar stool, my eyes were drawn back to the girl in the corner of the bar. She was sixteen years behind me in experience. Her cliff was still far off in the distance. I couldn’t judge her, though. I was her, and she would eventually be me, looking back. My reality was coming full circle.