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### **Dedication**

The Proceedings of the 5th Annual TRU Undergraduate Conference are dedicated to Drs. Kelly-Anne Maddox and Nancy Van Wagoner, for their dedication to and support of our celebration of Undergraduate research and innovation at Thompson Rivers University.

Thank you both!

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Dr. Mairi MacKay, Dr. Mohammad Mahbobi, Ms. Ginny Ratsoy

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### Introduction

The conference from which these proceedings issued has become a tradition – a rite of spring, in fact – on the Thompson Rivers University campus. Although the TRU Undergraduate Conference itself is only five years old, it is built on the solid foundations of its predecessors (undergraduate Science poster and Arts conferences) and the collective mind of the campus community already associates it with the end of the academic year. A multidisciplinary, ever-expanding event, it is an increasingly fitting culmination to winter semester activity on our bustling, comprehensive campus.

Of course, a conference is a type of performance, and while it can be filmed and otherwise recorded, it, like a play, cannot be fully recaptured; however, it is, we believe, imperative that at least some of the traces be acknowledged. Like a more conventional performance, it can be divided into three components. First, there is the pre-production stage, which begins even before the completion of the previous event: such aspects as budgeting, publicising, recruiting, and scheduling are integral parts of a complex process involving the cooperation and collaboration of students, faculty, administrators, and staff. Next are rehearsals: students hone existing work or create new work with assistance from their faculty supervisors as they prepare for their individual or group performances. Finally, the performance weekend arrives, "starring" the individual and group presenters, and including the exhibition of posters and visual entries, the adjudications, the rich discussions ensuing from the presentations, and the all-important socializing and networking. These components are all the more memorable for their ephemeral character. A conference is only fully realized when it is performed, responded to, and set in the memories of those who participated in it.

The 2010 production was a particularly impressive spectacle. The committee members, Mairi MacKay (Biological Sciences), Kelly-Anne Maddox (English and Modern Languages), Mohammad Mahbobi (Economics), Heidi Verwey (Performing Arts), Elizabeth Rennie (TRU Library), and Robert Hood and Havovie Suraliwalla (Tourism), reflect TRU's comprehensiveness, as they represent disciplines from across campus collaborating toward the common goal of an enriching experience for our Undergraduates. The multigenre performance itself can perhaps be likened to a particularly rich and engaging variety show: as well as showcasing Science posters and Visual Art students' work, it featured "acts" as diverse as enlightening sessions by TRU Culinary Arts students on the science of food and food in a local context, and an intriguing performance by TRU Actors Workshop students of scenes from the Governor-General's award-winning play Unity 1918, by Kevin Kerr, a former student of this institution. Other highlights included four awardwinning oral presentations by Hazel Cameron Inglis (an Honours Biology student supervised by Lyn Baldwin) and Brittany Dever (an Honours Chemical Biology student supervised by Kingsley Donkor) as well as Maria Bezymyannaya (an Economics student supervised by Mohammad Mahbobi) and John McGregor (an English major supervised by Rachel Nash and Will Garrett-Petts). Clearly, TRU students take advantage of the experiential learning opportunities the conference affords them to create an array of memorable work.

We are fortunate to have written records of the work of Bezymyannaya and McGregor herein. The two represent apparently disparate illustrations of university research; their respective works, in fact, serve as emblems of comprehensive concepts of research at our university. Bezymyannaya, after reviewing existing literature on the importance of the automotive industry to Canada's economy, analyzes models of automotive sales forecasting, and then proposes and applies a combination of two existing approaches, as well as advocating future research that combines quantitative and qualitative forecasting. She casts her net widely while providing material that is both accessible to an informed broad audience and relevant to her discipline, analyzing facts to arrive at a truth she is aware is part of a larger process of knowledge building. McGregor's piece illustrates the power of personal exploration as research. The term "creative non-fiction" indicates the erasure of artificial boundaries, and his work, while firmly embedded in personal experience and place, transcends both as it shifts narrative perspective in its exploration of various more abstract truths. These young scholars hunt, investigate, inquire, and synthesize in very different, but equally significant, ways.

Like Bezymyannaya, Alexander Dirksen, John Kennedy, Ellen Ramsay, and Tara Chambers tackle issues whose large scale implications are immediately patent. Dirksen identifies a research void: much attention has previously been paid to the U.S. militaryindustrial complex and climate change as separate entities; he makes a strong case for the urgency of investigation into the nexus of the two. Dirksen argues convincingly that our planet's environmental future depends upon the actions or inactions of "the world's current hegemon." Kennedy, with the supervision of Mark Paetkau of the Physical Sciences Department, produced a microbial fuel cell from mud - a renewable energy source they optimized to power a small LED; by detailing the process, he lays the groundwork for future environmentally sound experimentation in this area. Ramsay's engrossing reading of Mark Twain's The Adventures of Huckleberry Finn, which argues the American classic is too often employed in school curricula for dubious doctrinaire purposes - as a vehicle to endorse social conformity - provides a salient reminder of the ongoing power of a work of art to shape a society. Similarly, Tara Chambers' work illustrates the immediacy and vitality of Humanities research as she applies the arguments of philosophers throughout history to fundamental questions around the existence of a higher spiritual power in the context of the recent and devastating earthquake in Haiti. Although their subject matter and disciplinary perspectives are varied, these researchers share a passion for deep investigation of the specific to the end of contributing to existing knowledge on general issues of considerable substance and, in different ways, urgency.

Sarah Impey, Nick Beauchesne, and Darryl Strange - like John McGregor - provide powerful models of the generative power of reflection and creativity. Like Kennedy, Impey details an experimental process - in her case a combination of digital and analog photography – that both depends on existing artistic research and invention and adds to that body of knowledge. However, Impey's exploration takes an inward turn as well as an outward one: she is both investigator and subject, and by the end of the experiment emerges not only wiser about combining photographic processes but also more personally integrated and holistically self aware. Impey's essay is a fascinating fusion of the technical, the artistic, and the personal. Beauchesne also integrates the analytical and the personal, in his case through creative nonfiction: his analysis of the cultural implications of the popular festival of self expression and self reliance, Burning Man, becomes a fitting springboard to generate reflection on his own life-changing experience. As he explores and merges the two, Beauchesne, like Impey, emerges stronger. Strange's piece, the third work in the proceedings to employ "Mystory," a type of academic composition coined in Gregory Ulmer's book Teletheory, is creative non-fiction consisting of a series of moments recalled as footprints, or pressions, that hearken to such literary antecedents as John Steinbeck and Daniel Defoe. Reflective, it notes, "There is distance between me and my own printed voice [that] seems to be caused by a difference in location and some real conditions there and then, or here and now." As they search for truths, these writers are filled with recognition of the role of individual consciousness, as well as awareness of audience, in the research process.

As the Thompson Rivers University Strategic Plan states, TRU is "the most comprehensive university in Canada." Readers will note that these conference proceedings reflect both TRU's comprehensive programs and the university's recognition of the tide toward more encompassing definitions of research itself. Those of us who were fortunate enough to have been there then, will recall the 5<sup>th</sup> Annual Thompson Rivers University Undergraduate Conference in many and varied ways. Those who read the proceedings that follow this essay have the opportunity to experience scenes from that conference that these dedicated, talented students have re-visioned for the printed page. All involved in either or both processes are the richer for their experiences of this spring performance tradition.

Ginny Ratsoy Associate Professor of English Thompson Rivers University.

January, 2011

## Forecasting of New Car Sales in Canada

MARIA BEZYMYANNAYA

#### Introduction

World news headlines such as A Car-Sales Indicator Suggests a Recession is Near or New Car Sales Continue to Dip attract the attention of economists, government officials, consumers, and people employed in the auto industry. The performance of the automotive industry is closely watched by people involved in the industry, government officials, etc., because new car sales are sensitive to fluctuations in the overall state of an economy, and such fluctuations reflect consumer response and, more importantly, consumer confidence.

In 2009, the Canadian Automobile Dealers Association reported that there are 3,000 new car dealerships across Canada employing 140,000 people (Hatch, 2010). According to Blair Qualey, president and CEO of the New Car Dealers Association of B.C., in B.C. one in seven jobs is tied to the auto industry (Gorman, 2009). Moreover, in 2009 new car dealerships generated over 43 million dollars in annual sales, which is 20.3 percent of total retail sales in Canada (Hatch, 2010). In addition, 12 percent of the total Canadian payroll is collected from new car dealerships (Williams, 2009). According to the Canadian Vehicle Manufacturers' Association, the automotive industry accounts for roughly 12% of manufacturing GDP and over 2% of total industrial GDP. Therefore, the Canadian automotive industry contributes to development of a highly skilled workforce, government revenue, and an improvement to the overall welfare of Canadians. Accurate forecasts of new car sales will provide an improved outlook on the state of Canadian economy.

This paper focuses on building a model that produces accurate and reliable forecasts of new car sales in Canada. The organization of the paper is as follows. First, the research examines the application of three forecasting techniques. These include multiple-regression, time-series decomposition, and a combined model. The multiple regression analysis evaluates how changes in economic variables, such as GDP growth, interest rate, gasoline price, and occurrence of financial crisis, affect sales of new cars in Canada. Unlike multiple regression, time series decomposition is based on available

observations and forecasts future values by breaking the series into possible cyclical, trend, seasonal, and irregular components. Second, multiple regression is combined with the time-series decomposition to test any possible improvement in the overall forecast accuracy. Third, the most accurate and reliable model is chosen to forecast new car sales in Canada for the twelve months of 2010. The resulting model can be considered as an alternative method for timely and cost-effective forecasting of new car sales in Canada.

#### Data Set

This research utilizes New Motor Vehicle Sales Survey monthly data from January 1993 to April 2009. The data are collected directly from Canadian automobile manufacturers and importers of vehicles produced overseas through completed surveys mailed out by the head office of Statistics Canada. The survey includes monthly data on retail sales (in units) of new motor vehicles in Canada. The response rate to the survey was 100% because responding to the survey was mandatory. The data are not adjusted for seasonality, and include the sales of both trucks and passenger cars in Canada.

#### Multiple Regression Model

A multiple regression is used to examine how a number of independent variables interact to determine the value of a dependent variable. The regression model estimates the degree to which each of the independent variables influences the behaviour of the dependent variable.

The number of new vehicles sold in Canada is considered to be the dependent variable. New car sales account for a significant part of all retail sales and reflect the spending decisions of households and businesses. In order to understand what causes fluctuations in the automotive market, it is necessary to determine what factors affect consumer purchases of new cars. When making a "buy" decision, a typical consumer looks not only at the price of a car, but also at the costs of operating it. The consumer estimates associated car financing costs and average car expenses. In addition, sales of new

cars are substantially influenced by the consumer's confidence in the future state of the economy. Finally, new car sales by month can vary because of the seasonal nature of the industry.

The multiple regression model estimates how fluctuations in new car sales in Canada are predicted by a number of exogenous variables. The first independent variable is the state of the economy measured by the real GDP growth rate. The second variable is the price of money measured by the interest rate. The third variable is gasoline price, which is an unavoidable car expense. The fourth variable is seasonality; new car sales depend on the month in which they occur. Finally, to incorporate the impact of financial crises on the car industry, occurrence of such unexpected events is estimated by adding financial crises proxy variables to the model. Therefore, the regression model used in this study is as follows:

SALES=*f*(GDP, GAS, IR, WORLD, ASIA, MONTHS DUMMY) Where:

IR - represents the overnight rate charged by the Bank of Canada

GDP - is the change in Real Gross Domestic Product

- GAS is the one-year lagged price in cents per liter of gasoline at the pump (adjusted for inflation)
- WORLD is the world financial crisis of 2008, a dummy variable equal to 1 if the crisis occurs and zero otherwise
- ASIA is the Asian financial crisis of 1997, a dummy variable equal to 1 if the crisis occurs and zero otherwise
- MONTHS DUMMY is a measure of seasonality where a dummy variable equal to 1 is assigned to each month except December.

Table 1 provides a summary of results of the regression model for new car demand. The results are obtained using ForecastX<sup>°</sup> software (Keating and Wilson, 2009). The data used in the model cover the period of January 1993 to April 2009.

Using a t-table, we are able to conclude that the coefficients are statistically significant except for October and November, which are seasonal coefficients. It can be seen from Table 1 that the explanatory power of the adjusted  $R^2$  explains 91.72% of the variation in the sales of new cars in Canada.

| Dependent Variable SALES |                         |        |          |
|--------------------------|-------------------------|--------|----------|
|                          | Coefficient             | t-test | p-value  |
| (Constant)               | 197,809                 | 33.26  | 0        |
| IR                       | -1,778                  | -3.4   | 0        |
| GAS                      | -1,277                  | -3.62  | 0        |
| GDP                      | 5,378                   | 2.58   | 0.01     |
| ASIA                     | -10,995                 | -2.52  | 0.01     |
| WORLD                    | -2,47                   | -2.03  | 0.01     |
| JAN                      | -17,531                 | -5.5   | 0        |
| FEB                      | -16,978                 | -5.79  | 0        |
| MAR                      | 30,746                  | 10.5   | 0        |
| APR                      | 37,258                  | 12.74  | 0        |
| MAY                      | 50,928                  | 17.19  | 0        |
| JUN                      | 37,908                  | 12.78  | 0        |
| JUL                      | 17,756                  | 5.96   | 0        |
| AUG                      | 17,413                  | 5.84   | 0        |
| SEP                      | 12,445                  | 4.19   | 0        |
| OCT                      | 3,749                   | 1.26   | 0.21     |
| NOV                      | -311                    | -0.11  | 0.92     |
| R <sup>2</sup>           | Adjusted R <sup>2</sup> | MAPE   | RMSE     |
| 91.72%                   | 90.87%                  | 5.63%  | 7,923.16 |

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The economic interpretation of all significant estimated coefficients out of the muliple regression model can be explored. Gross Domestic Product growth is an economic indicator that reflects the state of the economy. Positive GDP growth is associated with an expanding economy where more people are employed, higher income is generated, and more business transactions occur. When GDP growth goes down, both employment and investment decrease as people expect a turndown in the economy. If consumers are not confident in future income, employment opportunities, and the general economic situation of a country, they are not likely to purchase a new car. The regression model predicts that a 1% increase in real GDP boosts monthly new car sales by 5,378 units, holding all other variables constant.

Table 1: Summary of Regression Results for New Car Sales, Jan. 1993-Dec. 2009

The sales of new cars are sensitive to interest rates. A new motor vehicle is a large-scale purchase which is typically acquired by taking a loan. An increase in interest rate depresses demand for new motor vehicles by raising the cost of borrowing money. Moreover, high interest rates increase the opportunity cost of holding inventory by dealerships. Conversely, lower interest rates make credit more available for consumers in all income brackets. Lower interest rates also contribute to inventory accumulation by new car dealerships. Therefore, it is expected that a decrease in interest rate would stimulate the sales of new cars. In a model that predicts the sales of new cars in Canada, we might like to have a measure of the prime interest rate. However, a more readily available series, the overnight interest rate, may be a reasonable proxy for what we want to measure, since all interest rates tend to be closely related to each other. Figure 1 illustrates the interest rates for the period January 1993 to April 2009.



Figure 1. Bank Rate in Canada, Jan. 1993–Dec. 2009 (Source: Statistics Canada)

The overnight rate since 1993 tends to decrease. Such a pattern suggests that consumers are more likely to make large scale purchases such as cars because loans are more easily available. Higher interest rates have a negative effect on consumer confidence; lower rates have the reverse effect. In fact, the estimated model predicts a 1% increase in interest rate causes a reduction of 1,778 car sales in each month.

The price of gasoline is assumed to be another determinant of demand for new cars because gasoline is a complement to a car. A complement is a commodity which is regularly used in conjunction with some other commodity. The decision to purchase a new motor vehicle involves a long-run decision-making process. Rational consumers do not rush through this process; they estimate the future costs of operating a car. The past trend in gasoline prices influences consumers' expectations about future prices. The consumers' decision whether or not to buy a vehicle is based on their expectations about future costs they will have to budget. In his 2008 research on the link between gasoline prices and vehicle sales, Walter McManus concludes that consumers are not responsive to changes in the price of gasoline in the short run, but that a sustained increase of 10 percent in price eventually would reduce new car sales by about 4 percent (McManus, 2008). In order to estimate the influence of past gasoline prices on current demand for new car sales, a one year lagged gasoline variable is used in the model. The estimated coefficient for a gasoline price variable shows that, on average, a 1% increase in the price of gasoline reduces next year's monthly sales by 1.277 units of cars.

Sales of many commodities are subject to seasonality. Sales of new motor vehicles start to rise during spring and summer months. The sales throughout the year are typically lower in winter. This pattern is reasonably consistent, although there is variability in the degree of seasonality and some deviation from the overall pattern. To account for and measure seasonality in a regression model, we will use 11 dummy variables. In order to prevent the so-called dummy trap, the month of December is considered as the reference month for the regression model. The seasonal dummy variables are expected to have signs representing their relationships to the omitted month (i.e. December). The coefficients of dummy variables show how much the sales of new cars decrease or increase because of the effect of the season, given that all other factors are constant.

The estimated seasonal coefficients are statistically significant except for October and November. Figure 2 shows by how many units



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Figure 2. Seasonal Changes in Demand for New Cars in Canada (Source: ForecastX)

of cars sales decrease/increase due to the effect of a month.

If an unexpected event influences the overall state of an economy, either in a positive or negative way, it will immediately be reflected in the sales of new motor vehicles. The Asian Financial Crisis was a crisis that gripped much of Asia beginning in July 1997, and raised fears of a worldwide economic meltdown due to financial contagion (Battelle, 2001). The World Financial Crisis of 2008 is also one of the worst financial crises since the Great Depression in the 1930s. It caused a strong decline in economic activities, wealth of consumers, and serious financial losses by businesses and governments. As indicated in the article The 2007-08 Financial Crisis in Review. "with the onset of the global credit crunch and the fall of Northern Rock, August 2007 turned out to be just the starting point for big financial landslides" (Singh, 2009). To incorporate the effect of the two major financial crises into the model, two qualitative variables are defined, one for the Asian crisis, and one for the World crisis of 2008. The model estimates that during the occurrence of the Asian Crisis, monthly sales decreased by 10,995 units of cars. Similarly, the effect of the Financial Crisis of 2008 is responsible for an estimated decrease of 2.470 units in each month of its occurrence.

#### **Time-Series Decomposition Model**

Utilizing alternative forecasting techniques is a common practice in real world examples. Time-series decomposition is applied to forecast the sales of new motor vehicles in Canada. The technique assumes that some aspects of the past pattern of the data will remain in the future. The model is based on available observations from a time series and forecasts future values by breaking the series into cyclical, trend, and seasonal components, assuming there is no irregularity pattern in the data. Although the model acts like a black box because it tells us only 'what' will happen but not 'why' it happens, it has been widely used in reality. This model is expected to provide additional information about the patterns in the underlying data. The plot of new car sales depicted in Figure 3 shows the volatility in the data.



Figure 3: New Car Sales Measured in Units of Cars

There is also a successive pattern in the movement of the sales of new cars in Canada, with sharp increases and decreases following each other. This pattern suggests that there is seasonality in the data. In addition, the data appear to have some long-term wavelike movement and probably a slight positive trend. To better understand these underlying patterns, it is necessary to isolate and examine them individually.

| Month     | Seasonal Index |
|-----------|----------------|
| January   | 0.70           |
| February  | 0.73           |
| March     | 1.13           |
| April     | 1.15           |
| May       | 1.28           |
| June      | 1.21           |
| July      | 1.02           |
| August    | 1.01           |
| September | 1.01           |
| October   | 0.93           |
| November  | 0.90           |

Table 2: Seasonal Indices for Canada's New Car Sales



Figure 4: Seasonal Indices for New Car Sales (Graphical Representation)

The first step is to remove seasonality from the data. After applying the time series decomposition process, the following seasonal indices then can be summarized in Table 2 and Figure 4.

As shown above, the seasonal index of new car sales for January is 0.70. Compared to other monthly sales, this means that typical January sales of new cars in Canada are 30 percent below the average monthly value for the year. The seasonal indices for the months of March through September are all above unity, indicating that sales during these months are generally higher.

The estimated time-series decomposition model also indicates a long-term positive trend. A rising trend implies that the average of new car sales increases through time. This can be due to an overall increase in population, inflation, and/or general economic changes. Figure 5 depicts the series in which there is an obvious upward trend over time.

The cyclical component of a time-series is the extended wavelike movement throughout the long-term trend. The estimated cyclical factor for the sales of new cars is plotted in Figure 6.

The cyclical component for new motor vehicle sales in Canada does not have constant amplitude. The distances from peak to trough before 2001 were much longer than the recent distances from peak to trough. This means that it takes less time for economic activity to move from peak to trough; additionally, the size of both expansion Maria Bezymyannaya / Forecasting of New Car Sales in Canada / 25



Figure 5: New Car Sales and Centred Moving-Average Trend

and contraction decreased. The accuracy measures for the timeseries decomposition model are summarized in Table 3.



Figure 6: Cycle Factor for New Car Sales

| MAPE              | 3.86%    |
|-------------------|----------|
| R-Square          | 94.65%   |
| R-Square Adjusted | 94.62%   |
| RMSE              | 5,876.41 |

Table 3: Summary of Accuracy Measures for Decomposition Forecast

Using the estimated time-series decomposition, actual and forecast values for January 1993 through April 2009 are shown in Figure 7.



Figure 7: New Car Sales and its Time-series Decomposition Forecast from Jan. 1993–April 2009

#### **Combination of Forecasts**

When different forecasts are made of the same event, a decision maker might choose the best forecast and discard the rest. This procedure is not reasonable if the objective is to obtain the most accurate forecast. The discarded forecast may contain some useful and independent information. One forecast may be based on the variables that are not included in the other forecast. In addition, two forecasts can be based on different assumptions about the relationship between variables. Forecasts are combined to reduce likely errors and improve the predictive power of a forecast. In order to obtain an improved model to forecast the sales of new motor vehicles in Canada, the estimated multiple-regression and timeseries decomposition models are combined.

The two separate forecasts of new car sales in Canada are combined on the basis of error-minimization criteria such as Root Mean Square Error (RMSE). Compared on the basis of RMSE, the decomposition model significantly outperforms the estimated multiple regression model. The RMSE of the decomposition model is almost 34 percent less than the RMSE of the multiple regression. However, Bates and Granger suggested that the combination of forecasts will do better than any of the individual forecasts (Bates & Granger, 1989). Research from over 200 studies demonstrates that combining forecasts produces consistent but modest gains in accuracy (Armstrong, 1989). Even though the time-series decomposition model shows lower RMSE, it is not logical to base the forecast solely on the decomposition model. It is likely that valuable independent information contained in the multipleregression model may be lost. The multiple-regression model of the new car sales in Canada uses GDP growth, gasoline prices, interest rates, seasonality, and occurrence of financial crises to explain the variation in sales. It is possible, however, that some of these variables are not taken into account by the decomposition model. Additional information obtained from the multiple-regression model may improve the accuracy of the time-series decomposition. Moreover, the two models may test for different forms of the relationship. To prevent such loss of useful information, and to improve the accuracy of the forecast, a combined model is constructed. The hypothesis, yet to be tested, is that the combined forecast has a smaller error, as measured by RMSE, unless individual forecasting models are almost equally good.

To combine forecasts, one needs to assign weights to each forecast. It has been suggested that regression can be used to estimate such weights. New forecasts based on combined forecasting models using weights out of regression were found to be more accurate than combined forecasts with equal weights (Krishnamurti, 1999). We begin by regressing actual sales of new cars in Canada on multiple regression and time-series decomposition model outputs. It was determined that the intercept of the combined model is essentially equal to zero. The results are summarized in Table 4.

| Dependent Variable SALES |             |                |        |
|--------------------------|-------------|----------------|--------|
|                          | Coefficient | Standard Error | t-test |
| (Constant)               | -1,911.81   | 1,695.06       | -1.13  |
| Multiple Regression      | 0.16        | 0.05           | 5.25   |
| Decomposition            | 0.84        | 0.05           | 16.51  |

Table 4: Summary of Regression Results for Combined Model

Based on the estimated weights, the new forecasts can be expressed as follows. Given a t-value of -1.13 for the intercept, we would conclude that it is not statistically different from zero at any meaningful significance level. The next step is to redo the same regression but force it without an intercept. The new estimated model is as follows:

#### Sales = (0.151397 \* Forecasts out of Multiple Regression Model) + (0.848819 \* Forecasts out of Decomposition Model)

The new estimated model indicates that the greatest weight should be assigned to the forecast out of the decomposition model. Table 5 summarizes accuracy measures for the three models.

| Method              | MAPE  | RMSE  |
|---------------------|-------|-------|
| Multiple Regression | 5.63% | 7,923 |
| Decomposition       | 3.86% | 5,876 |
| Combined            | 3.32% | 5,683 |

Table 5: Summary of Accuracy for 3 Tested Models

The forecast for 24 months of 2009 and 2010 is constructed. The values for sales and combined forecasts are shown in Table 6.

| Date   | Actual Sales | Forecast |
|--------|--------------|----------|
| Jan-09 | 78,817       | 85,517   |
| Feb-09 | 82,039       | 90,772   |
| Mar-09 | 129,831      | 136,651  |
| Apr-09 | 146,026      | 143,958  |
| May-09 | 156,025      | 158,563  |
| Jun-09 | 140,442      | 148,380  |
| Jul-09 | 141,621      | 132,968  |
| Aug-09 | 136,971      | 130,759  |
| Sep-09 | 132,595      | 125,826  |
| Oct-09 | 123,607      | 118,365  |
| Nov-09 | 104,926      | 109,515  |
| Dec-09 | 114,443      | 111,575  |
| Jan-10 |              | 87,037   |
| Feb-10 |              | 92,226   |
| Mar-10 |              | 138,246  |
| Apr-10 |              | 145,509  |
| May-10 |              | 160,217  |
| Jun-10 |              | 150,168  |
| Jul-10 |              | 145,670  |
| Aug-10 |              | 141,411  |
| Sep-10 |              | 135,438  |
| Oct-10 |              | 126,198  |
| Nov-10 |              | 110,360  |
| Dec-10 |              | 115,615  |

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Table 6: Actual and Forecasted Values for New Car Sales in Canada (Units of Cars)

Figure 8 shows the combined forecasts and the actual available sales values. The forecast values appear reasonable.

The forecast for 2010 indicates that new car purchases are rebounding sharply in February. The global economy and auto sector are in the early stages of a recovery which will lift new car sales in Canada above 1.65 million units in 2010, up from 1.5 million last year.



Figure 8: New Car Sales in Canada and Forecasted Sales by the Combined Model (Units of Cars)

#### Conclusion

Forecasting of new motor vehicle sales is extremely important for the Canadian economy to make fundamental economic decisions, and to analyze the ups and downs in the economy. Increasing demand for cars reflects increasing income, growing purchasing power, improving of financial conditions and positive potential in the labor market. Thus, the growth in new car sales can be considered as an indicator of the overall health of the economy.

The sale of new cars contributes to the Canadian GDP, retail sales, employment, and federal and provincial revenues. It is critical to predict the consumer and producer behaviours of the new car market. New car dealers need to know how much inventory to hold. Producers adjust the production of cars for ups or downs in sales. Governments plan their budgets based on potential tax revenue collected from the automotive industry.

The purpose of this research was threefold. First was to construct an accurate forecasting model of new car sales in Canada. Second was to generate a more accurate forecast by combining two forecasting models, multiple regression and decomposition. Third was to apply the procedure to predict the sales of new cars in Canada for 2010.

The three models, multiple regression, decomposition, and a combined model, were tested for new car sales predictions in Canada. For multiple regression, the sales were regressed on six independent variables, namely real GDP growth rate (GDP), interest rate (IR), price of gasoline (GAS), Asian Financial Crisis of 1997 (ASIA), World Financial Crisis of 2008 (WORLD), and seasonality (MONTHS DUMMY). The results indicate a positive impact of GDP growth on sales of new cars. However, an increase in the price of gasoline and interest rates depresses the monthly sales of new cars. Additionally, occurrences of financial crises significantly decrease demand for new motor vehicles in Canada. In time-series decomposition, the forecast is based on available time-series observations. Time-series decomposition significantly outperforms the multiple regression model. However, the combination of the two forecasts provides the most accurate model. In order to test the accuracy of the sample

forecast, the combined model was tested to predict the sales of new cars for 2009. The forecasted values turned out to be reasonably close to the actual values. Finally, new car sales in Canada for the 12 months of 2010 were predicted. Further research can be conducted by combining quantitative forecasting methods with qualitative and judgmental information provided by automotive industry experts.

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### Catastrophe and Evil: God's Will in the Shadow of the Haitian Earthquake

#### TARA CHAMBERS

#### Abstract

In light of the massive and perhaps unimaginable destruction and suffering in Haiti, the question being asked is, "If God exists, why he has allowed His creations to endure so much hardship?" This paper evaluates the arguments of noted ancient and modern philosophers– all of whom stand either for or against the belief in God's omniscience, omnipresence, and benevolence–in order to reconcile reason with faith, and place the concept of God's "entire" creation into its proper context. From this point it can be argued that although mankind has been continuously inundated with hardship and suffering, there still remains an argument for God.

udeo-Christian philosophy instructs that an omniscient, omnipotent, omnipresent, and benevolent God holds supreme dominion over the universe. Nevertheless, one only has to look as far as the earthquake in Haiti to note that we live in a world that is full of misery and pain totally independent of human invention. So when horrific natural disasters cause incomprehensible suffering, it is difficult to argue for God's existence, and that everything happening in the world is just part of His wise and ultimate plan. What possible sin was committed by the Haitians that would cause God to allow such evil to touch the lives of some of the earth's most vulnerable people? I will argue that if our infinite God is all-knowing, all powerful and good, He would not be capable of creating an evil world, yet as human beings we judge through finite comprehension and fallen intellect; therefore, this best possible world is often mistakenly considered by human beings to be a creation that is nothing more than a place of evil and suffering. Moreover, because it is easy for human beings to blame God in times of tragedy, often we do not consider our own inaction and how that could be the root cause of evil in the world.

On January 12, 2010 an earthquake with a magnitude of 7.0 devastated the Caribbean nation of Haiti, causing unbelievable destruction in its capital city, Port-au-Prince. Approximately 230,000 people died in this devastating natural disaster, and some 1.3 million survivors were left injured, homeless, and without the basic necessities of existence. Before the earthquake, Haiti was already considered the poorest nation in the Western Hemisphere; therefore, the country was not in a financial position to build proper infrastructure, or meet satisfactory building codes, so when the tectonic plates inevitably shifted, the country was doomed for disaster. How could an all-knowing and good God allow such evil to occur?

In his work "The Enchiridion," [Medieval Church Father] St. Augustine [of Hippo] describes God as the supremely good and rational creator of everything. From this assertion, it then follows that because God is good, everything in his creation must be good. Since evil is the antithesis of good, evil must not be God's creation. Augustine maintains his argument by asserting that if is impossible for God to create evil, evil must not be an independent entity existing in the universe. Augustine contends that what humans consider evil should really be understood as diminishment of the good that constitutes all of God's creations. He suggests a good without any evil whatsoever is a 'perfect' good, yet there can be only one instance of such perfection - and that is God. Because God embodies absolute perfection, it would be impossible for Him to create other examples of absolute perfection since another example of absolute perfection would be another God. According to theists like Augustine, two perfect Gods within one universe would be completely absurd, so everything God created must carry within it a lesser degree of perfection. Augustine concludes that if nothing in the universe is perfect except God, then all of His creations are constantly in danger of becoming corrupted.

Augustine points out that what we consider 'evil' is actually only an unavoidable absence of good in parts of God's creation. Augustine compares evil to "diseases and wounds that effect the body."<sup>1</sup> While disease signifies a lack of health, Augustine asserts when the sick body becomes healthy again, the disease does not go away and dwell in secrecy waiting to infect a new body at a later date; rather the disease completely ceases to exist, and good health once again holds dominion over what had previously experienced a lack. Like the health that is deprived when a body is sick, the good that constitutes the universe can at times be deprived, but it never disappears entirely. If this were the case, then just as a body dies when its health cannot be replenished, evil would be able to destroy all of the good in the universe, subsequently putting an end to God's creation. Fortunately, the universe continues to exist; therefore, if we are to believe Augustine's logic, good necessarily prevails over evil.

While Augustine presents a relatively sound argument against evil in a good God's universe, Pierre Bayle dismisses Augustine's central belief in an all-knowing and benevolent God. He emphasizes the fact that if God is all-knowing and loving, why would He allow moral

and physical evil to diminish the good of His creation in the first place? Bayle also rejects arguments for God's goodness and claims that a God that permits evil in order to manifest His wisdom and grace is comparable to "a father who has the legs of his children be broken in order to display...the skill which he has in setting bones."<sup>2</sup> For example, if Bayle were alive today, he would most likely query why God would allow an unjustified and incomprehensible tragedy like the Haitian earthquake to fall upon the creations he supposedly loves so dearly. As I touched upon earlier, the death toll from the event is massive, and those who were not killed have been subjected to the worst possible human trials. Immediately after the disaster, the surviving population of Port-au-Prince was displaced—they had no homes, no food, and no foreseeable future. Haitians were and are still being forced to endure physical as well as emotional injuries, and many of the dead, displaced, or grieving are children too young to possibly deserve Divine punishment. Judging from the evidence, Bayle would claim that it appears God has callously forsaken His children and that an all-knowing and all-loving God should have and could have prevented this catastrophe. Nevertheless, according to Bayle's argument, God's inaction or indifference is equivalent to a prince who allows his subjects to fall into "abject wretchedness"<sup>3</sup> so that he can lift them out of their misery. Rather than acting as a benevolent and merciful leader who maintains his subjects in a "continual state of prosperity,"<sup>4</sup> it appears that God would rather act as a cruel teacher who chooses to conduct lessons in a world full of misery and suffering.

If the Haitian earthquake is only analyzed from Bayle's perspective, the appalling depth and extent of human suffering seems to make the Christian theory of a loving creator completely implausible. Yet the primary flaw in Bayle's argument is that he attributes human moral qualities to an entity that lives outside of, not only the human condition, but also the conditions of time and history. As far as our capacities permit, we understand that, unlike mortal beings, God is infinite; therefore, he does not observe the present and the future in the same manner as we do. Instead of seeing the world from a
linear perspective and dwelling on the events that take place in each moment, God observes the universe-past, present, and future-as one moment. In his essay "On the Origination of Things," rationalist philosopher and critic of Bayle, Gottfried Leibniz explains "we know but a small part of the eternity that extends without measure;"<sup>5</sup> therefore, humankind is inclined to make unqualified judgments about the "immense and the eternal."<sup>6</sup> Leibniz urges doubters to "look at a very beautiful picture, and cover it up except for some small part."7 He stresses that by doing so, all that the observer would note is a confused arrangement of colours. According to Leibniz, this nonsensical glimpse at a very small piece of the whole is representative of our finite interpretation of the world. However, once the cover is removed from the picture, the observer will-like God-be able to inspect the entire work of art in all of its beauty and meaning. The observer would see that what was once considered accidental splotches on the canvas necessarily contribute to the ultimate beauty of the picture; therefore, in the same respect, earthly catastrophe and misery must be understood as an integral part of the magnificence that constitutes God's entire creation.

Leibniz also points out that, before generating our world, a perfect and just God must have certainly considered many different worlds that he could have created. Because of this 'justness,' Leibniz asserts, if God decided that that He could not possibly conceive of a 'best of all possible worlds,' then He would have decided not to create any world at all. As a result, the world created by God must be the correct balance of good and evil. If the world had more evil, then the Haitian earthquake and other instances of suffering could very possibly be worse for human beings; however, if the world was better or if the balance was different than it actually is at this time, then it is possible that we as human beings would not exist in the same way we do – a concept that most human beings find distasteful. Subsequently, if Leibniz's philosophy is to be followed, God in all His infinite wisdom, perfection, and benevolence "could have only chosen the best."<sup>8</sup>

Like Leibniz, John Hick also dismisses Bayle's cynicism regarding God's responsibility in allowing a corrupt and evil universe. He

expands on Augustine's earlier hypothesis that the universe is "the creation of a good God for a good purpose" (Hick 290), and agrees with Augustine's argument that disorder and decay in nature have not been purposefully introduced by God, but they represent the distortion of something that is essentially valuable. While he admits that evil has a place in the order of the universe as something that is parasitic upon the good, Hick also argues that these evils occur because the universe was never intended to be fair. God does not intervene on human behalf because His plan never included constructing a "permanent hedonistic paradise"9 where Bayle's benevolent prince maintains his subjects in a state of safety and prosperity. Hick asserts that if God furnished us with such a world, "the consequences would be very far reaching."<sup>10</sup> For instance, if special providences were granted for every individual, we would exist in a world of chaos where natural laws would be subjective and flexible. Humans would never learn what it means to feel pain, and as a result would never have the chance to appreciate pleasure. Furthermore, if there were no wrong actions, then there would not be an opportunity to perform right actions. Right and wrong would be indistinguishable, and human moral growth would carry no value. Free will is fundamental to an individual's conception of what it means to be human, yet without free will we would be like pets in a cage under the continuous intervention of our master. Never again would we have agency over our actions; therefore, we would never be forced to consider the consequences of our decisions because we would never have to make any. Furthermore, if God intervened every time a human was in danger or uncomfortable, not only would free will be eradicated, but also natural laws like the ones that are the basis for disasters such as the Haitian earthquake would no longer be of any consequence. As a result of these losses, our desire for scientific investigation would be eradicated - a fundamental human desire that is the cornerstone of inquiry, enlightenment, and human development.

Since we live in a world where natural laws and logic have meaning, it appears that, instead of a heaven on earth, God created the perfect environment where free beings have the opportunity to triumph in their fallen existence. In an imperfect world and in the face of catastrophic events, human beings nurture their finest characteristics and confront terrible trials that manifest in what Hick terms individual "soul making."<sup>11</sup> While the Haitian earthquake is an extreme example of the challenges that face human beings, it cannot be denied that, through the rubble, misery, and suffering, emerge human beings sympathetically and proudly displaying the ethical qualities that they have been taught carry the most significance to other human beings, to society, and to God. According to the Canadian International Development Agency, ten days after the earthquake the Canadian Red Cross had already received \$59 million in funds, of which \$43.3 million were donations from individual Canadian citizens.<sup>12</sup> Furthermore, during a time in history where countries find themselves continually at odds over the earth's resources and political ideologies, the international community immediately set aside differences and coordinated a swift response in order to aid the people affected by the disaster. Under the worst possible circumstances emerges the act of "soul making" that Hick describes. "Generosity, kindness...unselfishness, and all the other ethical notions"13 flourish in the midst of the horrific disaster, and therein lies the possibility that an even greater good can amass and permeate all areas that have been deprived.

It is horrifying to watch people suffer due to events out of our control. It cannot be denied that, when faced with disaster and misery of the magnitude witnessed in Haiti, most of us cannot help but wonder why the most vulnerable among us find ourselves used as a means to an end for some sadistic practice that Hick terms "soul making." If Leibniz is right, why is it that God did not choose a world that was even just a little more forgiving? What if it is actually our fault and not God's inaction or indifference that allows evil in the world? Should the rest of the world not take a share of responsibility for allowing our fellow citizens to live on a well known major fault line without solidly built homes like the ones we enjoy or the adequate infrastructure we utilize daily? The question of whether or not God

permitted evil into the world becomes a gauge for personal human morality. There are as many examples of good in the world as there are of evil, and often the evils arising from what we consider God's indifference are actually springing from the solid foundation of *our* indifference. Instead of blaming God, would it not be more prudent for the rest of the world to use their God-given will and intelligence to ensure that inevitable natural disasters do not cause distress to the earth's most vulnerable people? Nature happens, yet we offer our generosity and overdue assistance to properly rebuild a country like Haiti *only after* tragedy strikes. Who is really permitting evil? Moreover, if Leibniz is correct and God created the "best possible world," should the "best" not also include the universe as a whole and not just human beings? If this is the case, we must consider the possibility that the catastrophic is beneficial to the other creations who share our planet.

Terrible tragedies like the Haitian earthquake occur on a constant basis, and when devastating events happen to innocent people it is easy to conclude that God's creation is rife with evil and chaos that incessantly define the human condition, and if there is a God, He must be unconcerned or incapable of preventing human hardship. However, if one refers to Christian orthodoxy since "The Fall," eternal life in a hedonistic paradise has never been an option for humans; nevertheless, we often forget this and then believe that we have been forsaken. Leibniz observes that we do not sufficiently recognize with gratitude the "divine goods of which we are the beneficiaries"<sup>14</sup> and suggests that humankind pays more attention to how terribly it has suffered rather than how often it is blessed.

As finite beings, we cannot possibly understand what ultimate goal God has in store for us, but when the good is weighed alongside the evil, it becomes clear, even in the midst of tragedy, good ultimately triumphs, and the universe continues to 'become' something greater than it was the moment before. Along with the universe, we are in a constant process of "becoming"—always striving to be better in the face of adversity. Admittedly, from catastrophe emerges suffering, yet from suffering emerges action, and from action springs new hope and a better world. Therefore, when man's hardships on earth are assessed with a "bigger picture" in mind, we must conclude, in the words of Leibniz, "These evils are not only profitable, but indispensable."<sup>15</sup>

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# A Climate of Conflict: An Analysis of the Military-Industrial Complex and its Effects on the Environmental Crisis

# ALEXANDER DIRKSEN

# Abstract

In his farewell address to the nation, Dwight D. Eisenhower discussed a revolutionary new concept that would soon become a grim reality for future American administrations. The military-industrial complex—the relationship forged among the American military, the United States Congress and the industries that specialized in the production of wartime materials-was an issue that Eisenhower greatly feared. Feeding on fear, the military-industrial complex continues its rapid expansion in response to the "War on Terror." The Center for Arms Control and Non-Proliferation estimates that the United States currently accounts for 48% of the world's military spending, a figure that is likely to rise with an expanding Pentagon budget and continued wars in Iraq and Afghanistan. Yet as the relationships within the military-industrial complex grow stronger, it is the American people who must make the sacrifice. Increasing funds for foreign war efforts and national security measures have been made at the expense of crucial programs at home and far more pressing issues. Under the Obama administration, the most pressing of these issues is the environmental crisis. This report will examine the military-industrial complex and its effects upon the environmental crisis. An analysis of both the

financial and environmental costs associated with the military-industrial complex will be included to illustrate its significant effect upon the climate change movement.

# Introduction

Mankind is at a pivotal moment in our history. We have been confronted with an issue that not only threatens our way of life, but whose impact will be felt for generations. After years of abuse, our planet has begun to feel the effects of an increasing population, emerging industrial economies, and a continued reliance upon fossil fuels. Our resources have been stretched to their limits to accommodate these trends, and we are rapidly approaching a period in which our planet can no longer hold the weight of our demands and expectations. The threat we face is not an ideological one like the red threat of communism; nor is it a social phenomenon that will affect only the lowest classes of society. The effects of the environmental crisis will be felt across the globe, by the elites and the homeless, the young and the old, Republicans and Democrats. It is truly an issue which stretches across the social, economic, and political divides.

While we now possess the technological capabilities to address the conflict, climate change remains a political issue. As world leaders question the economic implications of emission cuts and delay making tough decisions by choosing eloquently worded statements over binding agreements, our small window of opportunity to slow our current course is disappearing rapidly. From Brazil to Zimbabwe, the threat of climate change is becoming a reality, and people are beginning to speak out and become involved in the cause. Yet, despite their best efforts, addressing climate change requires action not only by the people, but also by the political elites in charge of the world's most influential nations. Of these nations, the world's current hegemon plays a crucial role in determining the future. Yet, despite campaigning on the promise of change in Washington, President Obama has failed to heed the call as a leader in the climate change movement.

This report will examine what I believe to be the primary cause of Washington's complacency with respect to this movement – the military-industrial complex. Once a definition of this powerful political force has been established, the report will examine the role it plays in the American political system and its significant effects on environmental issues. While both climate change and the military-industrial complex have been heavily researched by their respective fields, the connection between them is often ignored by major media outlets, while those in Washington who attempt to take on the escalating military expenditures are frequently deemed "unpatriotic." Thus, a crucial connection is being ignored, and is underrepresented in the academic literature. If we are to address the issues we face in the decades to come, we must become educated about them, and I hope that continued research into this phenomenon will aid in these pursuits.

# **Defining the Military-Industrial Complex**

In his farewell address to the nation, President Dwight D. Eisenhower discussed a revolutionary new concept that would become a grim reality in future American administrations. The military-industrial complex-the relationship forged among the American military, the United States Congress and the industries that specialized in the production of wartime materials-was an alliance that Eisenhower greatly feared (Eisenhower). He believed that such a relationship could prove costly on multiple fronts, and was quick to note the economic, political, and "spiritual" effects that would be felt by the American people due to a phenomenon that was "inimical to the survival of American democracy" (Eisenhower; Scheer).

While an alliance between the American military and arms suppliers had always existed, the relationship among the forces of government, industry, and the military was established and strengthened on a large scale with the emergence of the Cold War. As a result, many hoped that with the fall of the Berlin Wall the United States would again turn its sights inward and address some of the most pressing issues on its own soil (Berrigan, *"How Much is Enough?"*).

This hope was to be short lived. International conflicts throughout the century's last decade ensured the continued presence of military expenditures in the American federal budget, and those individuals and corporations with ties to the business of war ensured that their positions of wealth and power would not be questioned. With the lure of lucrative defense contracts for their districts, members of Congress were unwilling to speak out against its rising power and risk having the "pump" of potential employment for the citizens they represented "turned off" by this powerful alliance (Fallows; Johnson 273; Hartung 28).

Ultimately, however, it was the dawn of the new millennium that granted the military-industrial complex a position within the American political establishment never before seen in its history. The terrorist attacks of 9/11 provided the military with a new target at which to direct its efforts, with President George Bush declaring a "war on terror" that continues to this day (Shah). On October 7, 2001, the United States entered the first of two significant conflicts in the Middle East as it launched its first attacks on Afghanistan, and these attacks were followed in 2003 by an invasion of Iraq (Shah). These conflicts have resulted in tremendous gains, but not for those who need them the most. While Iraqi and Afghan citizens continue to witness marginal improvements in their standard of living, those businesses associated with the military-industrial complex have grown and prospered (Berrigan, "M.I.C. 2.0"). As noted by American journalist Robert Scheer, "military spending has skyrocketed since the 9/11 attacks, returning to Cold War levels," leading many to believe that we have entered "a new era of excess for the military-industrial complex" (Scheer; Krugman). It is clear that war is a lucrative business, and the amount of money associated with it is staggering.

# **Assessing the Costs**

The numbers associated with the military-industrial complex illustrate its true power within the American political establishment. With the American presence in the Middle East far from over, these costs are expected to continue to escalate. This places the environmental movement in a difficult position, as these increases in military spending come at a time when the world desperately needs these funds for climate change efforts.

Numbers vary regarding the total cost of the Afghan war so far, but one of the most thorough assessments comes from Jo Commeford, the executive director of the National Priorities Project, a group which analyzes American federal spending. She places the estimated cost of the war so far at over \$325 billion, noting that spending for 2010 alone is expected to exceed \$102.9 billion (Commeford). This is due largely to the costs associated with the surge of 30,000 more troops, a tactic Obama argues will end the conflict in 18 months. The cost of the surge will be a minimum of \$30 billion, with actual costs expected to be much greater (Commeford). The war in Iraq has had an even greater effect upon the wallet of the American government. Joseph Stiglitz, a Nobel-Prize winning economist and professor at Columbia University, believes that standard operating costs (military expenditures included in the defense budget and through funds allocated through Congress) will be \$1.5 trillion (Stiglitz). With such measures as the war's economic impact and the continuing costs of assisting war veterans and injured soldiers factored into the analysis, Stiglitz believes that the total cost of the war will be \$3 trillion (Stiglitz).

As I mentioned earlier, these tremendous costs have resulted in massive profits for the military-industrial complex, particularly the industries associated with the production of wartime materials. As the war in Afghanistan continues to devour funds at a rapid rate, those corporations associated with the business of war have continued to reap the rewards. An article by Frida Berrigan for the news site Common Dreams states that "the amount the Pentagon has paid out to private companies for services has increased by 78% over the last decade," while a recent report by the *Financial Times* noted that the top 10 defense contractors alone were granted \$131.3 billion in contracts in 2009 (Berrigan, *"M.I.C. 2.0*"; Dombey *et al.*). Corporations such as URS, Boeing, and KBR have reaped huge profits

from providing their services to the American military, an institution that has become dependent upon these companies (Berrigan, *"M.I.C. 2.0"*).

Thus the military-industrial complex continues to play a significant role in the policies of Washington, and, upon analyzing its financial impact, it becomes clear that any meaningful American commitment to the climate crisis can only come if the role it plays in Washington is greatly reduced. With such a high percentage of the nation's budget being dedicated to the Pentagon and the U.S. military, finding the funds necessary to join the fight against climate change becomes increasingly difficult. As noted by author Naomi Klein, the funds required for climate change are substantial:

The World Bank puts the cost that developing countries face from climate change–everything from crops destroyed by drought and floods to malaria spread by mosquito-infested waters–as high as \$100 billion a year. And shifting to renewable energy, according to a team of United Nations researchers, will raise the cost far more: to as much as \$600 billion a year over the next decade (Klein).

The 2006 Stern Review, conducted by economist Nicholas Stern for the British government, remains one of the most influential reports on climate change. In it, Stern addresses both the current costs of addressing climate change, as well as the costs that will come as a result of failing to meet these pressing requirements. According to the Stern report, allocating 1% of the world's GDP annually would be enough to stabilize the current trends by the year 2050 (Stern, 13). However, if we fail to achieve these levels of commitment, the economic impact of this negligence could result in losses as high as 5-10% of GDP in developed nations, with GDP losses in developing nations significantly higher (Stern, 9). While 1-2% of world GDP may seem significant, it is not unrealistic. According to the Stockholm International Research Institute in a 2009 report, world military expenditures total 2.4% of world GDP, with the United States alone accounting for 41.5% of this spending (Freeman et. al, 179).

If we are to meet the demands of an eco-friendly future, we must be willing to change the aspects of our society that are known to have a detrimental effect upon our planet, with the United States military being one of the most pressing concerns. Understanding the costs of change brings what may at first appear to be two incompatible issues (the military-industrial complex and the environmental movement) together: if the environmental movement is to be successful, it requires significant funds, which will require the support of the United States government.

# Beyond the Budget: The Environmental Effects of the Military-Industrial Complex

The military-industrial complex has more than just an effect on the budgetary concerns associated with the climate change movement. As noted by Barry Sanders in his work The Green Zone, the U.S. military continues to be a leading contributor to climate change in the world (21). Of its many harmful environmental effects, one of the most evident effects of the world's largest military is the amount of fuel required to sustain it. As noted by Sanders, the Department of Defense operates 187,493 commercial vehicles, 140,000 Humvees and 4,000 combat vehicles in its current conflicts and at its military bases around the world (47). In addition to the forces on the ground, the Department of Defense operates 92 different types of aircraft, which consume voracious amounts of "highly toxic jet fuels" (49). Thus, "the U.S. military is the largest consumer of energy in the world," as noted by The Energy Bulletin in a 2007 report, with a per capita consumption of oil 10 times more than the energy consumption of China, and 30 times more than the energy consumption of Africa (Karbuz). Taking into account the private contractors involved in the military-industrial complex, fuel used at foreign American military bases (numbers which are not included in the Department of Defense figures) and the use of fuel that the military receives at cost in various regions, Sanders estimates that the U.S. military consumes 14.5 million gallons of fuel per day (53).

Such fuel consumption wreaks havoc on the environment. It is estimated that military fuel consumption results in 200,000 tons of greenhouse gases being sent into the atmosphere each year, which unfortunately is only the beginning of the list of ways in which

the military is contributing to climate change (Sanders, 68). In his analysis of military pollution, Sanders concludes that "exploding bombs and cluster bombs, cannon rounds, napalm and depleted uranium," along with the usage of bunker fuel, add to these figures (71). Yet the U.S. military does not restrict its pollution to ground forces. In the oceans, military fleets leave behind carbon and sulfur dioxide, nitrous oxide, and residual oil, while in the air, the use of jet fuel is a growing threat, with high levels of nitrous oxide, soot, and sulfur dioxide being produced (Sanders, 72). Thus, the militaryindustrial complex is threatening our future on multiple fronts. With each passing year, the defense budget continues to climb, while defense contractors receive ever increasing contracts to aid the cause. As these financial figures continue to rise, the effect the military has upon the environment rises at a similar rate, contributing to the problem in which its funding prevents the world from properly addressing these negative effects on the environment.

### Conclusion

In a speech delivered prior to his signing of the 2010 defense budget, President Obama promised to provide the American people with the "best military in the history of the world," and justified its expenses by arguing that they were "investments in the capabilities necessary to meet 21st century challenges" (Obama). I believe that this mindset couldn't be further from the truth.

It is an inescapable fact that the United States faces very real threats, and the security and well-being of the American people must remain high atop the list of priorities on the federal agenda. Yet I believe that the United States' intense focus upon terrorism has caused the nation to stumble on the international stage, making continued sacrifices in an attempt to preserve its status as a superpower state and protect the American interests and values which it holds dear. Thus, assessing the facts, figures and statistics associated with the military-industrial complex brings one to an inevitable conclusion. The business of war is an enterprise benefitting the few—those whose aim is to secure the power and prestige of the American Empire, and those who provide this empire with the tools it requires to maintain its global stronghold. From an environmental perspective, its effects are deadly - international conflicts not only take their toll financially, but have a devastating effect on our planet.

Some of the nation's finest moments have not been in times of conflict, but in periods in its history when the forces of diplomacy, innovation, and collaboration have shone through. The type of investment the world requires from the United States is not in military might. What the world requires is a nation that leads the way into a new era of diplomacy and international relations, one that harnesses the potential and promise of its youth and encourages technologies and philosophies that challenge the traditional ways of doing business. These measures are necessary if we are to tackle the environmental crisis. Decisions made today will have long-lasting and serious consequences for generations to come.

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# Amalgamated Me: An Experimental Photographic Technique

# SARA IMPEY

# Abstract

*Amalgamated Me* is an experimental project that combines aspects of both digital and analog photography, culminating in the discovery of a new photographic process, while simultaneously investigating notions of the alter ego. Self-portraits were used for this project in an attempt to characterize different sides of my personality. Like the process of overlapping negative and positive images, I discovered that my own personas intersect one another in a similar way. While the separate images or different personas can stand on their own, it is their interaction that produces a new understanding and harmony.



# Introduction

A lfred Stieglitz, one of the most important photographers working in the early 1900s, once said to fellow photographer Man Ray that the limits of the photographic medium should never be accepted, urging him (and others) to challenge the picture-making status quo and go beyond the limits of what a camera and film are capable (Baldwin, 34). The Amalgamated Me project came out of curiosity and boredom with conventional analog, or film, photography. Inspired by Stieglitz's words, I began experimenting with techniques similar to those used in silkscreen printing. Discovered accidentally, the process for this project merges aspects of digital and analog photography to create a new and innovative hybrid photograph. Digital images are converted to negatives and then printed using traditional analog black and white darkroom techniques.

The original intent of the project was to represent two personas I find myself working between: Sara Impey and the Group of One. By using a double negative technique, which utilizes overlapping negative and positive images, the process mimics how Sara Impey and the Group of One coincide. While the separate images or different personas can stand on their own and create unique results, it is the interaction of the two, through parallel narratives, that produces a new understanding and harmony.

# **The Process**

The technical component of the project from start to finish was simple, and no expensive equipment or software was required. Using the digital camera built into my cell phone, I first took several photographs of myself, which were then uploaded into a computer and manipulated in a photo-editing program. Each image was changed from colour to black and white, after which various adjustments to brightness and contrast



were made. The last step was fine-tuning the cropping.

When I was satisfied with the image, I proceeded to make the first of two "negatives" by printing them onto sheets of acetate. The first sheet was printed with the image as a positive. When that was complete, the tones of the image were reversed and the image was printed a second time onto another sheet of acetate as a negative. To guarantee a seamless overlay and the appearance of a single image, I placed one sheet on top of the other, registered them as closely as possible, and then taped the edges of the two sheets together. I used electrical tape to ensure a clean, finished edge and also to prevent the possibility of excessive light leakage. This acetate sandwich, made up of a positive and negative image, formed a new "negative" which I used to make a contact print in the darkroom.

I selected six different self-portraits and used the same procedure as described above for all of them, making small adjustments as needed, so each image was consistent in terms of brightness and contrast. The new "negatives" that I produced measured 8.5"x11". The next step was to take them into the darkroom for printing.

All the same procedures involved in printing a normal 35mm black and white film negative were used. In the darkroom I began by setting up an enlarger, chemicals, and washer, keeping in mind the size and type of photographic paper being printed on. There are two basic types of paper: Resin Coated (RC) paper is less expensive and easier to use, whereas Fibre Base (FB) paper, though more expensive, produces a richer image and offers archival longevity. I opted for doing my test strips and preliminary prints on RC paper and my final prints on FB paper.

First, I adjusted the enlarger head. For an evenly exposed print, I moved the head up as far as possible so that there was adequate coverage of light. I turned the enlarger on and marked the perimeter of the lighted area with tape. When the light was off, this indicated exactly where to place the paper. I then adjusted the aperture of the enlarger lens by turning the ring left or right (the larger the number the smaller the lens opening, or aperture). When the aperture is small, the exposure will be longer as less light passes through the

lens and vice versa. I decided on the use of a f5.6 aperture, allowing for exposures that were approximately 10 seconds long. At this point contrast filters were inserted into the enlarger. The filters, small coloured squares of plastic, were used to control or change contrast, increasing or reducing the differences between tones in a print. Filters were arranged in a series of numbers from 00 to 5, increasing/ decreasing by increments of .5. To increase the contrast and achieve a richer black in the final image, a filter with a higher number such as 3 or 3.5 was used. To reduce contrast and achieve a softer and fuller tonal scale, a filter with a lower number such as 1.5 or 2 was used. For the final prints in this project, I used a number 3 filter, which allowed me to slightly increase the image contrast.

I then checked the development set-up, making sure the chemical trays were large enough to accommodate the size of paper I was using. I used 8.5"x11" RC paper for test strips and 11"x14" FB paper for the final prints. The first step to a perfect final FB print is making a test strip. First I put a sheet of RC paper onto the baseboard under the enlarger and then placed my "negative" directly on top. I then lay a sheet of clear glass on that, which ensured good contact between the two (the better the contact, the sharper the resulting image). I then used a piece of cardboard to make a series of graduated exposures, each several seconds, over the entire sheet. Using this test I determine which time interval exhibited the proper exposure by looking for bright whites, rich blacks, an even range of grey tones, and good detail throughout. Once I had decided on the correct exposure, I place another sheet of photo paper with the "negative" under the enlarger and exposed it for the amount of time selected.

The image was then developed to determine if it had the proper exposure. I continued in this way, adjusting exposure times, until the optimal one was achieved. Once a perfect RC print had been made, I moved to the FB paper to begin a final print. After double checking the position of the enlarger and the lens aperture, I placed an 11"x14" sheet of FB paper on the baseboard with the "negative" in the centre of the sheet, followed by the glass, and then exposed it for the predetermined amount of time.

To develop the print, I used the following chemicals in the order they are listed: Developer, Stop-bath, Fixer, and Hypo-clearing Agent. This was followed by a water wash, in a specially designed washing tank. I first placed the exposed paper in Developer, face down, and agitated the tray for two minutes. This was followed by a thirty second Stop-bath. Next, the print went into an initial Fixer bath (Fixer A) for two minutes before it was transferred to a second Fixer (Fixer B) for another two minutes. Finally, I immersed the print in a bath of Hypo-clearing Agent, also for two minutes, which dissolved any remaining Fixer residue. This was followed by a lengthy wash of twenty to thirty minutes. After the print was taken out of the wash, I wiped the water off with a squeegee, being very careful not to mar the delicate surface. The print is very fragile at this stage and I very carefully lay it, face down, on a drying screen to dry in a closed cabinet overnight. By being laid face down while it dries, the print experienced less curling, making the following dry-mounting process easier.

Permanently adhering the finished prints to a piece of mat board provides them with good protection from tearing and bending, as well as a means of final presentation. The following process assumes that all of the necessary equipment is available. I started by heating a drymount press to approximately 200 degrees while I cut my mat board to the desired size. For my 11"x14" prints, I chose boards measuring 12"x15", which allowed for a <sup>1</sup>/<sub>2</sub>" border to be visible on all sides of the print. To affix a print to the mat board I used a heat-activated adhesive called dry-mount tissue. I attached an oversized piece of tissue to the backside of a print by using a tacking iron, then trimmed the print and tissue using a utility knife and ruler so that they were perfectly even on all sides. I then positioned the print, with affixed tissue, in the centre of the mat board and tacked the corners of the print down with the iron. Finally, I placed the print and mat board into the pre-heated press between two sheets of release paper. Clamping the press shut for 30 to 45 seconds or until the print was firmly adhered to the board, I then removed the mounted print and allowed it to cool between two sheets of clean heavy glass.

# Conclusion

Because of the combination of digital and analog photographic techniques, the resulting prints portray a unique sense of depth and contrast, an unusual tonal scale, as well as distinctive characteristics such as slight pixilation, solarisation, and a pleasing horizontal grain. But it is the facial expression in each portrait that is the most intriguing and somewhat perplexing element. The wide eyes, skewed head, and slightly open mouth, combined with the



interesting textural component that frames the faces, sets off a visual vibration that brings into question the thoughts of the individual or individuals depicted.

Acting as both the subject and photographer while creating the photographs, I attempted to capture not only Sara Impey, but also my inquisitive internal persona of the Group of One. During the photo shoot I began to see a strong character, with curious eyes and an intense presence, appear in the raw images, not the usual smiling and reserved Sara Impey I had come to know. It wasn't until the final prints were produced that I realized the true spirit that is the Group of One had been revealed through the technical proficiency of Sara Impey. Because of the combination of digital and analog photography as well as the blend of a careful, reserved persona with an intriguing, adventurous one, I felt the Amalgamated Me project was a success both technically and conceptually. Though it was a lot of work from start to finish, this project was a labour of love. As the outcome of weeks of experimentation, the resulting images are engrained with aspects of my mental, physical, and emotional being. As a culmination of everything I know about the realms of both digital and analog photography, Amalgamated Me has resulted in the "amalgamation" of two technologies as well as of two personas that I have long wished to see represented as one.

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# **Microbial Fuel Cell**

# JOHN KENNEDY

# Abstract

A microbial fuel cell was constructed using mud from Daybreak Park. The fuel cell was optimized for power output by testing a variety of electrodes (copper, graphite and 304 stainless steel). It was determined that the stainless steel produced the largest potential difference and power density  $(2.4 \text{mW/m}^3)$ . By wiring multiple fuel cells in series, a small LED was powered.

# Introduction

That if you could power your house from pond sludge? Research and development of clean electric power is taking place to help reduce our environmental emissions, and a leading technology is fuel cells. A fuel cell is an electrochemical cell that converts a source fuel into an electrical current. The best known fuel cell is the hydrogen fuel cell, which produces electricity by consuming hydrogen at one electrode and consuming oxygen while producing water at the other electrode. A microbial fuel cell (MFC) uses bacteria or other microbes to produce electricity. An MFC was created using mud from Daybreak Park. The mud was placed in a container along with two electrodes: the anode was buried in the mud, and the cathode was placed in the electrolyte (water) above. Electrons flow from the anode through the load and then to the cathode to produce electricity (Figure 1). The power of the MFC was tested using polarization and power curves. These are generated by measuring the voltage across the MFC under different resistive loads. While MFCs are still far from being able to create enough electricity to power a house, the



Figure 1: MFC Structure and Electron Flow (Logan et al., 2006)

potential applications include power generation using waste water as fuel (Lovely, 2006). MFCs created by placing electrodes in natural seawater environments have reported power densities of 28mW/m<sup>2</sup> (Logan *et al.*, 2006). Our research focused on the characteristics of MFCs and how much power can easily be obtained from a simple microbial fuel cell.

# Measurements

Different electrode materials were tested to determine which electrode material provides the highest potential difference between the cathode and the anode, as well as the largest current density (maximum current divided by electrode area). A polarization curve of each cell was used to compare the performance of each material. The polarization curve shows the voltage and power as a function of current. To generate a polarization curve, current and voltage were recorded at each load resistance  $(2k\Omega \text{ to } 1M\Omega)$  with the circuit shown in Figure 2. The value of the next load resistance is estimated so that the voltage drops around 75mV from the previous reading. After changing the load, the voltage is allowed to stabilize for 10 minutes before the voltage is noted. At this time the voltage has reached a meta-stable state. The power is calculated using P=VI, and the power can also be plotted versus current. The peak power density can then be calculated using the surface area of the electrode and the peak power, which can be compared with other cells.



Figure 2. Circuit used to test polarization and power of the MFC

The internal resistance of the cell can be calculated using the polarization curve, by finding the slope of the curve once the internal resistance has caused the power to decrease.

The absolute potentials of the electrodes were also measured using a Copper to Copper Sulphate Electrode (CSE) commonly used in testing cathodic protection systems. The measurements can be converted to a Standard Hydrogen Electrode (SHE) by adding 316mV to the CSE measurement. Our measurements can be compared against others' measurements using the potential data from the SHE, the power and the power density.

# **Electrode Materials**

Copper, graphite, steel and stainless steel were all tested as electrode materials, using the same sample of mud from Daybreak Park placed in a 2L beaker, as shown in Figure 3.



Figure 3. Microbial Fuel Cell

The copper electrodes were cut from a 22 gauge sheet cleaned using steel wool and sandpaper to remove oxidation, and were approximately 3" by 4" in size. While the copper electrodes produced a good potential difference (700mV) and good power density, copper should be avoided as an electrode material due to its toxic properties on the microbes (Logan *et al.*, 2006).

Graphite was also tested as an electrode material. The graphite electrodes started as a 2" by 2" bar which was cut into 4" lengths, and finally three  $\frac{1}{2}$ " wide by 3  $\frac{1}{2}$ " long flutes were added to increase the surface area. To remove any impurities before being placed in the cell, the graphite electrodes were rinsed with a weak solution of hydrochloric acid (1M). The graphite electrodes also produced a potential difference (660mV, 1.5 mW/m<sup>3</sup>) and good power density;

however, the voltage did not recover to the initial voltage after being drained by a load. This may have been due to the geometry of the graphite electrodes.

Stainless steel was also tested as an electrode material. The stainless steel electrodes were cut from a 16 gauge sheet rinsed with HCl to clean the electrodes, and were approximately 3" by 4" in size. Stainless steel was the best performing electrode material, producing a potential difference of 900mV, and a power density of 2.4 mW/m<sup>3</sup>. Stainless steel was also used to power an LED by combining three MFCs in series to increase voltage. Each MFC contained 6" by 8" electrodes to provide more current. The potential difference of the electrodes and maximum power density for each electrode material is shown in Table 1.

| Electrode<br>Material | Potential Diff.<br>(10 <sup>-3</sup> Volts) | Power Density<br>(mW/m³) |
|-----------------------|---|--------------------------|
| Copper                | 700   | 1.5                      |
| Graphite              | 660   | 1.1                      |
| Stainless Steel       | 900   | 2.4                      |

Table 1: Voltage and Power Produced by Various Electrode Materials

To confirm the microbes were generating the electricity and that the potential difference was not caused by dissimilar metals, a cell was created using tap water and no mud. The stainless steel electrodes were placed in the same configuration as the MFC, and the potential difference between the electrodes was only 41.0mV. The small potential difference was probably caused by a minor difference between the metal alloys in the two electrodes. We also took the potentials of the electrodes using a CSE and compared the potentials of the MFC using stainless steel electrodes as shown in Table 2. The main difference between the electrodes in the MFC and the electrodes placed in a beaker of water was that the electrodes in the mud had a more negative potential, which is what we expected, as the microbes provide electrons to the electrode in the mud.

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| LED Cell | Anode<br>(mV <sub>CSE</sub> ) | Cathode<br>(mV <sub>CSE</sub> ) | Anode<br>(mV <sub>SHE</sub> ) | Cathode<br>(mV <sub>SHE</sub> ) | Potential<br>Difference<br>(mV) |
|----------|-------------------------------|---------------------------------|-------------------------------|---------------------------------|---------------------------------|
| 1        | -660                          | 240                             | -295                          | 600                             | 900                             |
| 2        | -590                          | 82                              | -230                          | 443                             | 675                             |
| 3        | -610                          | 76                              | -250                          | 437                             | 680                             |
| No Mud   | -23                           | 16                              | 340                           | 380                             | 42                              |

Table 2: Absolute Potentials

# **Polarization Curves**

The polarization curve and power curve of the 2L cell is shown in Figure 4. As the load resistance is decreased, the current increases, while the voltage decreases. As the current increases, the power increases until the power drops due to the increasing loss caused by internal resistance of the cell. The internal resistance of the 2L MFC is approximately  $64k\Omega$ . The difference between the power of an MFC operated at room temperature (22°C) and one heated to 36°C is also shown in Figure 4. When an MFC is increased to a temperature of 36°C, the maximum power is double that of a cell at room temperature.



Figure 4: Polarization and power curves of an MFC. The squares show the voltage of the MFC, while triangles represent the power dissipated over the load resister. Open triangles are for a cell at  $36^{\circ}$ C.

The polarization curve of a larger MFC using 3 cells in series, each with 6" by 8" stainless steel electrodes, is shown in Figure 5. The power of the cell did not drop at once; one or two of the cells started to lose power as the current increased and the stronger cell(s) maintained power for the cell until it finally dropped. This cell was used to power an LED and was able provide up to  $40\mu$ W of power.



Figure 5. Polarization and power curves of three MFCs in series

# **Depolarization of the MFC**

After changing the load resistance to drain the cell, a log plot of the potential difference was recorded, as shown in Figure 6. The potential difference of the cell quickly drops after changing the load resistance, and slowly levels as it approaches 0.5V. Because the data seem to follow an exponential decay in time, we can take the natural log of the potential differences. Figure 7 shows the double log plot of the depolarization with time. In this plot, the vertical axis is the natural logarithm of the voltage. Figure 7 shows four linear regions, suggesting four different time constants and, perhaps, four different loss mechanisms. Comparatively, for a capacitor being depolarized by a resistor, only a single time constant is expected, given by the resistance load times the capacitance. Figure 7 shows the four linear regions that could be caused by four different losses that affect the MFC: ohmic, activation, bacterial metabolic and concentration (Logan et al., 2006). Each of these different losses occurs over a unique time constant.





Figure 6: Depolarization of an MFC after a load is applied



Figure 7: Depolarization of an MFC after a load is applied. The vertical scale is the natural logarithm of the voltage. Note the four linear regions. The lines are given as guides to the eyes.

# Conclusion

A microbial fuel cell was constructed using mud from Daybreak Park. The fuel cell was optimized for power output by using stainless steel electrodes. The stainless electrodes produced a potential difference of 900mV and a power density of 2.4mW/m<sup>3</sup>. By wiring three stainless steel fuel cells in series, a small LED was powered. While we did produce enough power to light an LED using an MFC, our power densities were much smaller than highly optimized microbial fuel cells.

One application of MFCs currently being explored is in wastewater treatment, where MFCs can create large amounts of power (Lovely, 2006). Wastewater treatment is an ideal application of the MFC because it has a high quality and reliable food source for microbes. An attainable power per area of electrode is  $1 \text{kW/m}^2$ , with a total power output of 330kW. While full-scale, highly efficient MFCs are not yet within our technology, scientists and engineers will continue to strive to develop MFCs as an environmentally friendly, renewable source of electricity.

# Acknowledgement

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# The Trouble with Huck: Doing Good Never Felt So Bad

# ELLEN RAMSAY

# Abstract

Mark Twain's depiction of friendship between a white boy and a black slave in The Adventures of Huckleberry Finn has led to the book being simultaneously celebrated as a great American novel, and banned from school libraries across the United States. This paper attempts to determine the message that is reinforced when the book is given to children by their parents and teachers as an example of commendable behaviour in the context of race relations in the mid-nineteenth century. In her article "Say it Ain't So Huck: Second Thoughts on Mark Twain's 'Masterpiece," author and critic Jane Smiley claims that the notion of anti-racism presented by the novel is one based solely on emotion, where feeling positively towards those of another race is all that is needed to be anti-racist. Using research based on this article, other peer reviewed journal articles, and a close reading of the text, this analysis discovers a troubling implication: only bad people take action on their convictions when those actions contravene entrenched social tradition. Considering the weight lent to a novel's message when the work is endorsed by figures of authority, some of the effects of *Huckleberry Finn* being included in school curricula are a devaluation of independent reasoning and reinforcement of the notion that it is wrong to take action against conventional values.

The issue of racism in Mark Twain's *The Adventures of Huckleberry Finn* is a long-standing one which has yet to be resolved. In her essay, "Say It Ain't So, Huck: Second Thoughts on Mark Twain's 'Masterpiece," Jane Smiley claims that to praise *Huckleberry Finn* for its anti-racist message is to support the reasoning that "racism is a feeling" rather than "a way of structuring American culture, American politics, and American economy" (63). When it comes to the discussion of racism in this novel, many critics focus on the book's prolific use of the term "nigger." However, Smiley dismisses that issue as a rather minor problem compared to the more troubling idea of racism being an emotion:

No matter how often the critics 'place in context' Huck's use of the word 'nigger,' they can never excuse or fully hide the deeper racism of the novel – the way Twain and Huck use Jim because they really don't care enough about his desire for freedom to let that desire change their plans (63).

In studying Smiley's arguments, a critic's natural reaction is to question the message that is sent to young students when they are given this book to read by their parents and teachers as an example of laudable behaviour in the context of race relations. Smiley believes, rather accurately, that the message sent is a dangerous one.

Before any serious examination of the message of racism in the novel can be accomplished, the concern regarding the assumption that anti-racism is simply the possession of positive feelings for those of another race must be clarified. The lived effects of racism require action in order to be maintained: the "Whites Only" sign above the drinking fountain didn't occur naturally—someone had to put it there. Therefore only action can counteract racism in any meaningful way. Emotions have very little to do with it. Feeling dislike for a person based solely on their race has very little impact on the world outside the person feeling the dislike, until that emotion is acted upon either by speaking of it or allowing the emotion to affect one's interactions with others. It is this action that makes the racism real and effective, rather than the initial emotion of dislike. By this same reasoning, possessing positive feelings towards others carries
little real meaning unless those feelings are acted upon. It is very likely that many people thought Rosa Parks was a lovely woman, but she still had to sit at the back of the bus.

Similarly, it is clear that Huck comes to admire Jim during the course of the novel, but for any meaningful message of anti-racism to be imparted to the reader, Huck must act upon this admiration as well. Some would say Huck *does* act on his feelings for Jim by not turning him in when he first discovers that Jim has run away from his owner, nor at subsequent times during the course of their river trip. While Huck doesn't explicitly outline his motives in either instance when he changes his mind after resolving to disclose Jim's whereabouts, it would appear that his reasons are based on the positive sentiment he feels for Jim.

His first change of heart occurs after Huck resolves to turn Jim in when he paddles to shore to see if they've really missed the turn at Cairo, to the Ohio River and Jim's opportunity for freedom. Huck suddenly can't bring himself to tell the men from shore that he knows the location of a runaway slave right after Jim reminds Huck of two things: that he's "de bes' fren' Jim's ever had; en [he's] de only fren' ole Jim's got now," and of the promise Huck made, back when they first started their journey not to tell anyone about having found Jim (207, 208). Huck's second change of heart happens near the end of the book as he finishes his letter to Jim's owner, Miss Watson, telling her where Jim is located. Huck tries in vain to bring to mind any instance that could "harden [him] against [Jim]," which would then enable him to send the letter, but the only memories Huck can recall elicit feelings of kindness and friendship, resulting in him destroying the letter (281). Obviously, it is Huck's feelings of friendship that stop him from betraying Jim in both instances.

However, each time he appears to be acting on his regard for Jim, Huck is very clear about how he "knowed very well [he] had done wrong," and he is convinced he would "go to hell" because of it (209, 281). By believing he's doing the wrong thing when he takes action on Jim's behalf, Huck behaves in a way that demonstrates not action against racism, but rebellion against rules that he believes are correct

and appropriate. Telling young students that these actions are good and praiseworthy sends the problematic message that virtue is to be found in defiant behaviour. From there, it is only a minor yet logical step for a student to understand that defiant and therefore 'bad' people do good and virtuous deeds.

Yet what else could Huck have done to act on his feelings towards Jim that would send a different message? Huck is, after all, only a fourteen-year-old boy who, although possessing the social capital of being white, has not a penny to his name, nor any authority to effect change in his society based on his convictions. Some would say that acts of juvenile rebellion are the only avenues available to him. If this is true, then Twain's choosing such a person as his main character indicates that either he did not intend for the novel to carry a strong anti-racist message in the first place, or that he was not particularly astute in his choices as a writer. Given the sustained acclaim this and other of Twain's novels have garnered in the more than one hundred years they have existed, the latter is highly improbable.

Not only are Huck's options limited by his social circumstances, but they are also constrained by the limits of the story: Twain is attempting to write an adventure story, so he can't have his main character doing boring things, even if they are morally appropriate. For example, Twain could have had Huck and Jim travel up the Ohio River to the free states rather carry on southward down the Mississippi, a fate that was considered to be a death sentence to most slaves at the time. Another option would be to have them cross the Mississippi into free territory right from where they first met on Jackson's island. However, neither of these options would have fit the story that Twain was trying to write of an adventure on the Mississippi.

Despite these very valid points, there was still opportunity for Twain to have Huck take meaningful action in a way that would not considerably alter the plot, yet he chose not to. The best opportunity for Huck to act on his fondness for Jim would come near the end of the novel, for two reasons. First, it would allow for the narrative of adventure on the river to remain largely, if not entirely, unchanged. Second, it would indicate a telling development of Huck's character over the course of the story. Looking at the last chapters of the book, the least disruptive plot change would be for Huck to stand up to Tom Sawyer when Tom introduces ridiculous and humiliating complications to their plan of freeing Jim after he is turned in to a plantation holder by their dubious companions the Duke and the Dauphin.

Granted, it's a difficult thing to stand up to one's friends, especially those to whom one usually defers, but Huck already demonstrates that he is capable of doing so: he questions the viability of Tom's escape plan, point after point, for a whole two pages (296-8). From there it's only a small step to Huck putting his foot down and insisting on formulating a plan that focuses on Jim's freedom itself, rather than on the amusement to be had in its execution. Despite Tom's belief that an efficient and straightforward escape plan is dull and boring, Twain could easily have written plenty of adventure and comedy into such a plan's execution. After all, many fortunes have been made over the years by those peddling stories of the 'easy score' that turns out not to be so easy after all.

Instead, Twain continues to hammer home the idea that it is wrong to take action on one's feelings in the face of social convention. That "Tom Sawyer fell, considerably, in [Huck's] estimation" when he agrees to help Huck free Jim bolsters the idea that only bad people take action against slavery, no matter how well-liked a slave might be (288). Twain again reinforces this notion when Huck says he ought to be a true friend to Tom and convince him to halt his involvement in the escape plan in order to "save" himself (293). What other meaning can be taken from this statement than that only a wicked person would take action when his or her beliefs go against accepted tradition?

So far, this analysis takes a rather literal approach to the text and has not accounted for Twain's use of satire. The struggle between Huck's conscience, which reflects the values drilled into him by what he calls "sivilized" society (170), and what he feels in his heart is the right thing to do, is widely accepted as being meant as an ironic

comment on the values held by American society at the time. In the introduction to their anthology of critical articles on *Huckleberry Finn* entitled *Satire or Evasion?: Black Perspectives on Huckleberry Finn*, James Leonard and Thomas Tenney note that "to miss [the irony Twain employs] is to see in the book (as some have) nothing more than a series of childish adventures and stupid pranks" (9). That the novel's irony is most prevalent in the very examples this analysis uses to demonstrate its points, has become accepted as a matter of course in academic circles.

The reason for this much more literal approach to the text is one of scope. The purpose of this paper is to consider the implications of promoting the book to children as being a model of antiracist behavior. In terms of determining the message this kind of endorsement imparts, the text must be examined not as a scholar would comprehend it, but as a child might. While there are certainly many children who are more than capable of understanding *Huckleberry Finn* on more than a literal level, it is questionable whether or not the majority of young students would grasp the satire that runs rampant through the book.

A cooperative study conducted by both the State College Area School District and the Black Affairs Office of Pennsylvania State University looked into this very idea and found that "after several weeks of serious study... many students are not yet ready to understand the novel on its more complex levels" (qtd in Henry 39). The study concluded that "given the degree and instances of irony and satire in the book ... and the tendency of many students to read the book at the level of an adventure story, ... the novel requires more literary sophistication than can reasonably be expected from an average ninth grade student" and recommended that it not be taught at a level lower than the eleventh grade (qtd in Henry 39). Based on the results of this study, it would be unwise to approach the question of what a typical child would take away from the novel without taking into serious consideration that a literal interpretation is most likely. Even for a student who is aware of and comfortable with the irony in the text, there are elements of the satire that are very hard to grapple with. The ending of the story is perhaps the most difficult of these. After Tom and Huck's overly complicated, humiliating, and ultimately failed attempt to rescue Jim, Tom reveals that it was entirely unnecessary as well: Jim's owner had died two months prior to the botched escape attempt, and, in her will, Miss Watson took the appropriate steps to emancipate Jim. The cruelty involved in letting Jim believe he was still running for his life while he was actually a free man is difficult for the reader to digest. Added to this problematic element is Twain's treatment of it: the sudden arrival of Aunt Polly mere moments after Tom's revelation of Jim's freedom requires the story move on to deal with other plot points, neatly avoiding any meaningful mention of Tom's callous treatment of Jim.

Shortly after this scene, Huck makes a modest comment on the failure of Tom's plan to continue hiding the truth of Jim's emancipation so that they might resume the adventure of traveling down the Mississippi: Huck admits that he "reckoned it was about as well" that they did not succeed (326). For his own part in the matter, Jim astonishes the reader by showing nothing less than elation at being paid off by Tom for being their prisoner and has not a single word of reproach for, or even mild disagreement with, what he was put through. As Peaches Henry, a Baylor University professor, comments in her article "The Struggle for Tolerance: Race and Censorship in *Huckleberry Finn*,"

regardless of Twain's motivation or intent, Jim does deflate and climbs back into the minstrel costume. His self-respect and manly pursuit of freedom bow subserviently before the childish pranks of an adolescent white boy.... Given the powerlessness of highly discerning readers to resolve the novel in a way that unambiguously redeems Jim or Huck, how can students be expected to fare better with the novel's conclusion? (38)

The idea with which readers are left by this ending is that, in the end, everything works out for the best as long as everyone has good intentions, as Huck does. This brings back the original point made in Smiley's article, that the book promotes the idea that racism is

an emotion and all that is needed is to feel positively about others in order for the right thing to happen. The implication of this message for novel is troubling. It is unclear whether Twain intended the book for an adult audience or whether he was simply trying to write another children's story in the vein of The Adventures of Tom *Sawyer*. Whatever his purpose, the fact of the matter is that book is not only read by adults, who likely have the wherewithal to question the value of the meaning it carries, but it is also given to children by their parents and teachers. The weight this sanction lends to the book's message could significantly affect how a child forms her or his values. In a world where inequality and fear of difference causes violent acts of a terrifying magnitude, what could be more troubling than to teach young children that *Huckleberry Finn* is an exemplary story of anti-racism, thereby perpetuating the ideas that doing good deeds means you are a bad person and that there is no need to take action as long as you feel good about those around you?

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## **Mystory Panel:**

NICK BEAUCHESNE

JOHN MCGREGOR

DARRYL STRANGE

### Abstract

"Mystory" is the name of a pedagogical genre of academic composition coined by Greg Ulmer in his book Teletheory. Following the innovative enterprise of creative non-fiction, the composition of a Mystory is inherently both academic and creative in its approach to exchanging information. Research material expands to draw upon alternative culture (idiosyncratic, local, artistic, etc.) as well as traditional scholastic communities. Concretizing the theme and content of the composition, the works include self-created emblems, or artefacts, that represent the students, their history, and their method of thinking, providing a form for the research and composition itself. Located within a greater body of academic composition, the Mystory artistically exhibits knowledge through quintessential reality, fashioning the resonance between reader and writer that creative writing conventionally offers. The following student "Mystory" submissions explore the theory and aesthetics of creative non-fiction.

# **Alchemic Bipolar Synthesis**

### NICK BEAUCHESNE

## Abstract

This creative non-fiction paper intertwines an analysis of the symbolic and cultural implications of the Burning Man festival in Nevada with a flashback to an intense personal experience.



The Burning Man Icon Source: http://globalflyfisher.com/ patterns/burning-man/

Tam leaning on the rail of a three-storey, scaffolded guard tower. A cool wind whips my greatcoat. All is quiet. The tribe is at rest.

My field of vision is enormous. I am looking at a city of nearly 50,000 people, a city that sprang out of nowhere and will soon disappear again. I see people silently moving here and there, all sated from the rigors of a chaotic night. The sky is a cloudless, crisp blue all around. The sun has not yet risen, but the horizon glows a blazing orange. The golden mountain range surrounds the white playa bowl like an ouroboros. I am waiting for the sun to rise—no, not quite waiting—there is no impatience, no expectation, no sense of lost time. There is only the knowing that it *will* rise. When that moment comes, I will be ready to witness it as it happens, to allow the glowing warmth to heal me, to transform me.

I hear a flag flapping in the breeze. Upon it is emblazoned the icon of the Burning Man. It is a human being, reaching for the sky, yearning for liberation. For a moment, I see myself. I am that man. I take in the simplicity of the design, a unique stick man with a quadrilateral head. It reminds me of a primitive pictograph, something that could be found in a cave of an ancient and forgotten society. It holds an archetypal, cross-cultural significance. Almost any human would recognize this form, and almost anyone can draw or re-create it. The skyward positioning of the Burning Man's arms is reminiscent of the posture airport marshalling signalers adopt when motioning for a pilot to come "this way." Glancing to the centre of Black Rock City, I see The Man himself standing over fifty feet tall, serving as a beacon to draw the members of the community inward to adventure and interaction. Seeing the Burning Man on a computer screen or a piece of paper has a similar effect, inviting a viewer to come to the desert and join the tribe. After all, it brought me here. Burning Man means surviving a harsh environment with your very best friends while having the time of your life: whatever that means is up to you, and you will find it here if you seek it. We grow as sentient individuals within an organic, participatory community. Standing on this tower, I cannot help but become aware that it is now a life sub-objective of mine to spread the knowledge of Burning Man, to subtly sow the seeds of its utopian ideals into the thorn-choked wastes of the Default World.

To say that Burning Man gave my life purpose would be a gross exaggeration. I see it as an instrument through which my purpose is refined: it is an example of the society that should be, evidence that what I seek exists. Burning Man is a gift that I will carry with me while I walk the plains, changing reality.

In modern society, the full manifestation of an individual's true beauty and power is often stifled. Social norms dictate what is or is not acceptable in terms of self-expression. Burning Man is the place to go when one desires to cast off one's socially constructed shell and allow the True Self to emerge and flourish. Burning Man is one massive art exhibit in which everyone is a participant. There are no spectators. This creates a sense of community on a scale that I have never seen in the Default World. Perched high on the guard tower, I know my place in this community. I am a Shaman, a communicator, an emissary of our way of life.

I gently rest my staff against the railing and remove my soldier's helmet, setting it on the platform with a metallic clunk. I lower myself and sit cross-legged in the lotus position. I take a few deep breaths and centre myself. I quell any stray thoughts, letting them slip through my mind like sand slips through my fingertips. I begin to chant, working my way into a trance state. My third eye ignites, blazing indigo fire. I widen the etheric aperture and allow the

messages of the universe to flow into me. I am swept up in the tides of memory and emotion, washed away into my past.

My consciousness is summoned to the Coquihalla highway, three years ago. A merciless blizzard rages. Falling snowflakes mutate into banshees and reapers, hurling themselves at a black truck skimming along the icy road. I see a friend of mine at the wheel. I can see myself sitting in the passenger seat, tense with grim anticipation. Something terrible is about to happen.

The truck careens out of control, fish-tailing all over the road before flipping upside down in the ditch. It appears that the truck will either embed in the snow bank or continue barreling into oncoming traffic. The headlights of an approaching semi shine directly into the cab. Should the truck clear the ditch, the steel behemoth would annihilate it. My friend's eyes are wide with fear. His grip strangles the steering wheel. Floating outside, I hear him cry out: "No!"

Unfazed, my memory-self looks passively out the window and sees me, the eternal self, shapeless and unbound. I think about all I know or think I know. I think about my mission, my purpose. In these headlights, I see my ultimate test. Had the totality of my actions made enough of an impact on that reality, I would have achieved singularity and transcended that existence. Had I not yet done enough, I would be spared this demise to continue teaching and learning.

Still suspended in the air, I see every sight I have ever seen, hear every sound I have ever heard, feel everything I have ever felt. Every colour is magnificently enhanced. I am re-living every memory and action of my life, glimpsing every alternate choice that I had ever missed, grasping at—and failing to retain—all possible decisions I could ever possibly make. All my past, present, future, and imagined deeds are played out. I drift closer to my memory-self and whisper: *You will survive*.

Never before or since could I so easily see such an obvious dimensional rift. I watch my memory-self close his eyes...and trust. What else can one do when locked in a temporal feedback loop utterly helpless to external forces—staring into the luminescent eyes of death? His face is a statue, resolute and purposeful. He relaxes. He emits no sound. He is lucid. He simply analyzes and experiences. He knows that there is nothing productive that can be done but to resign himself—myself—to our destiny. Come what may.

I open my eyes with a start. I am in Nevada again. The ferocious blizzard has been replaced by a cool morning breeze. In a few hours, I will be sweating under a desert sun. I take a moment to reflect on this vision.

That moment was a test of faith. I faced my impending death with dignity and grace. There was—and is—still so much to do. It was imperative that I would survive to eventually journey here to Black Rock City, to refine my art and carry on my mission. In that moment, I knew that I was on the right track. My life was validated.

I think of the phoenix, the mythological bird that lays its egg in an inferno—dying in the process—and re-incarnating itself. In alchemic circles, this bird represents the transformation of lead into gold, the ultimate validation of their ideology. Like a lump of lead, I too was transformed in that winter perdition. Crawling from the wreckage of the truck, laughing, digging my way out of the snow, I was re-born, re-vitalized. At a time when I needed a sign, a reason to carry on, it was given to me. Now, I find myself in Black Rock City looking for another one.

For much of my life, I felt alienated from society. Too many people live their lives without questioning their environment or even their own motives. When I began lucid dreaming, channeling extradimensional entities, and auguring minor personal prophecies, I feared that I would be condemned, martyred. Within the confines of my hometown and even in the Big City, I was able to find only a few others like myself. I wondered if there would ever be a place where we would all be drawn together to one purpose, one will. Would there ever be a society where the individual still *matters*? Would there ever be a city of sorcerers?

Upside-down in that truck on the Coquihalla, I had no idea that such a place indeed exists. There is a *Gemeinschaft* sub-society in North America, a mystical city, a meeting place for the seeker souls.

This entirely different social experience is what makes Burning Man so memorable and so *alien* to our capitalist cultural perspective. I once feared that I was doomed to an existence within an uncaring industrial machine that crushes dissent and grinds the cogs against one another. I am now free of that fear. I am not alone.

We come out here to the desert to discover ourselves, to meet those other seekers scattered across the world—to elevate the mass consciousness of humanity as a whole. As Black Rock City changes us, we change Black Rock City. When the festival ends and we return to the Default World, we strive to change it as well.

I squint as the first rays of sunshine break through the horizon and caress my face. I sit up just a little bit straighter and pop a crick in my neck. My nasal cavity opens wider and my breaths become deeper. The sun peeks over the mountain.

All my defenses are obliterated as the golden rays bathe me in their tender light. The beams cut through straight to my inner core. The sun shines directly on my soul. I swell up with barely contained emotion and stare into the golden orb. I am home.



Nix and Gumbi Photo: Anonymous

# "If it helps at all, when they put him under, he snored"

JOHN MCGREGOR

Things are left in their regular attitudes: shoes facing north; glasses on the pile of books under the lamp, lenses half profile to the east edge, according to habit. If you knew me, but not the news of the day, you would not be able to point to the watermark, where it spilt over into the arrangement of my life.

The feeling around my eyes and through my jaw is a drawn, itchy vibration. And in my chest, as if something were lighting into it, falconate.

I can imagine not knowing how to handle such a thing in another. If I were, say, that person's supervisor: how to be tactful; how to grant an understanding measure of time off. I would hope that, mercifully, he would make the request of me. Meaning that this other understood this feeling and what it took to satisfy it. Would he appear out of sorts?

My father surprised me, removing himself to the garage to howl.

Afterward, he drove me past the mill so that I would know the right lot to park in and gate house to report to. Against the hill into which Mission Flats is cut is the Municipal Department of Animal Control. Its stack fumed into storm clouds eddying overhead. We passed the mill and my dad explained the job and pointed out the parts of the plant that did batch processing and refined the black pulping liquor to be used in removing lignin and then burnt off into smelt and recycled. I thought about the stacks sending white crematory smoke into the storm as we raced the rain home.

There, I stood outside, thinking that his body was now cloud. When the rain had soaked me, I, incredibly, heard bagpipes. Whatever the coincidence – the cloying wetness of the storm was about as Celtic as the weather around Kamloops gets – phrases wailed down the block and off the hills amphitheatrically, and I was grateful for this meeting of things.

I had to watch him for a long time before knowing his name – I didn't even think of it. A water dog by breed and a recalcitrant stray, he would vanish from the yard, over the fence acrobatically, and reappear with his coat shaken into humid curls. He never barked. In hot weather, he would dig massive, root cellar deep, sapper holes

that travelled down three or four feet into garden soil, of which I was unabashedly proud. A young cherry of my mother's died, its bundle of roots reaching dryly into space beneath it. On a wet day, the hole under it collapsed, planting the tree a couple feet deeper than the rest of the yard.

The best had corners that were large enough to hide in. I confirmed this empirically. An unfortunately situated one sunk our tool shed, its corner sloping dropsically into the trench beneath it, its clapboard floor splintered along a seam like a cracker. A neighbour, being neighbourly, commiserated over our dog's renovations: "Yep, he's certainly a Digger."

He preferred whatever side was nearest the counter, to the varicoloured containers that held playfully shaped savoury treats. He would lean into my leg at the knee because his hips were bad, variably inflamed, owing to a fusion of discs in the lumbar spine, owing to being hit nearly a decade ago. I found him huddled where he had dragged himself, under the rear axle of a parked car, craven, frightened, exhausted. I was thirteen and he was half my size and I carried him home with his broken back, and for weeks afterward, post-op, outside to void.

There is an old print I made shortly before he died, *Bright, Sick Dog*, of him resting on a folded blanket after the surgical removal of a cyst. He was fitted with a plastic conical collar that prohibited him from pulling out his stitches. He healed slowly. I sketched him many times. That collar is the only object I know well as a conflation of the lighter modes of sadness and cruelty with comedy. To me, that makes it poetic, and its treatment in yellow, grey, blue and purple, bruise colours, does a reasonable job of connoting those emotions. The sketch was a colour theory assignment, negligible, and I have since done work that was more ambitious and accomplished, but not as good. The colours are true to what I saw. As is the composition's focus on the collar, dividing the figure, the shape of the decline, of wasting growth, difficult healing, enfeebling arthritis, letting and purgation.

I chose euthanasia. My father was the only one of us able to bear witness, a burden that I might have lightened by sharing. And when it was done, he told me "If it helps at all, when they put him under, he snored," before removing himself to the garage and relying on the walls to contain what he had lost hold of.

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A phrase that occurred to me describing my workplace the summer I was employed in the steam plant industry: mathematical integrity. Insulated conduits carried superheated vapour at many atmospheres from capsule-shaped vessels like curvilinear throats. There was nothing of decoration. Pieces of graffiti, desultory and rare, were put down while waiting for an elevator or defecating, having to do with current activity or something prurient or cheering. Or, once, a limerick that was all of these.

I worked as a confined space entry watch: hole watch. I watched boilermakers burrow into hatches tight enough to bruise their hips and ribs, connecting each entrance with its corresponding exit. It was long, patient work.

The word for the ambient noise at all times was "thrum." When I would rest against a rail – structurally, this made my skeleton a part of the building, for load-bearing purposes – and put my chin on my forearms or fist, my teeth would buzz along with the conglomerate machine frequencies.

The crew I worked for was re-fitting a gen bank and I would often rest this way, always thirsty from the heat and dusty dryness, to watch them gouge feed tubes, averting my eyes from the arc flash as their hissing welds plumed sparks, strobing the power boiler housing with cutting light, gobbets of incandescent metal falling storeys through clouds of hot carbonaceous smoke. To where, below, apprentices malleted and ground thick accretions, minerals scaling uncovered surfaces atherosclerotically, the old-old calcified ashes of generations of burning. Breaking during the only shift I neglected to wear a filtration mask, I blew a dark tone of oxblood from my nose into a tissue, a coagulation of my blood and the plant's carbon.

There was a seat on the fourth floor east, behind a gas turbine whose crankshaft spun blurrily inside a guard perforated so as to appear transparent. The seat was behind the pump body, where people came to smoke or sleep, resting against it in a maintenance space large enough to sit in but not lie down; shaking with the plant's action, arm's length from the spinning crankshaft, their ear to the rail of the thrum.

On the night shift, the view north from that one spot behind the pump, where I could sit but not lie down, opened onto the site and across the Thompson to the airfield and up the coulees to the red points of aircraft warning beacons: those the only stars owing to industrial lighting. And east, in the false dawn, I would watch the smoke from the Animal Control crematorium rise over the chip yard from behind the hip of the hill that hid the building.

To me, he was born there. Chocolate Lab. Age: est. 1 yr. A stray with no tags, scheduled for euthanasia that day, sometime after lunch. The dogs of the Animal Control pound barked or begged, cowered or slept or sulked in cages that stank rottenly. Their noise was polyphonic, urgent and pointless, reverberating in the room so as to sound from all sides. There were other dogs I liked but I chose him, certain the way children can be certain that my choice had been, of the many right ones, correct. I do not know if the others were eventually adopted or put down, but I wonder.

Later in the season, I spent most of my time obsessed with the tedium of my job. And his memory wouldn't occur to me, looking east in the half light, waiting for my shift to end. It found a place in me hidden behind a shroud hung as over nothing, from catches like claws that only bit when I saw funeral smoke rising.

I see him now in words that have become necessary, that affix a centre to a voice and posture, colours and smells that were scattered up the Animal Control stack, fuming into the weather, settling over the chip yard. I detail them to measure, and measure to carry, the trivia that make his image like colour mixes in the eye. Because centreless things left ungathered get lost.

But it was certainly different than it is now. All there is to this kind of sight is to name how and why for scenes that are past and dead but run my streets like the ghosts of stray dogs. Finding the correct words is choosing him again from the pack at the pound, from the voices, postures, coats, and smells; to keep him as well as I can in love for him and apology to the others who were adopted or put down, I don't know.

I arrive home one rainy morning, pre-dawn, and place my shoes facing north; glasses on the pile of books under the lamp, lenses half profile to the east edge, according to habit. I have a feeling that won't let me sleep. Things are in their regular attitudes, but not as they should be.

I take his collar from a shelf in the garage and hang it over the corner of the yard where he slept, a circlet, in memoriam.

It is one of the few nights I dream about him, nothing fantastic. He's just there, more and less, like always.

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I am a water dog and my family lives near water but they don't want me to go there without them but when we go together they do not go in the water so I do not know why they insist on coming with me because my human family is slow and they take too long to get to the water and then only want to stay in one place but they have sticks and like to play so it is the best place on the river probably anyway.

I used to chase rabbits but now I am too slow and the hills they live in are so steep that my back legs tire and shake and stop working sometimes I lay down when they hurt but do not whimper because it is not safe there like inside fences even the rabbits who are as stupid as they are fast know.

I run past fences where other dogs that cannot go under or over fences whine at me to slow down and come back because they are lonely or shout go away and ugly things because they are angry that they cannot go under or over fences to the places they belong like I do over my fence and to the water.

"You were hit once and did not die but you will die this time!" I was hit by a human's ugly-smelling great moving cage that humans sit in because they are slow it hobbled me I was broken but my family found me.

"Get out of my garbage!" I take their garbage when there are things in it that are good.

"You steal to the river like a thief because you are a stray and do not belong anywhere!" I have had two lives and in the first a man hurt me when I barked until I stopped barking and sometimes hurt me when I did not bark so I did not know what to stop doing so I dug under the fence and did not come back. My family now would not hurt me if I barked I am sure but I have forgotten how to bark and am not hurt.

The river is dark deep cool and fast and I can move in it in ways that are so perfect and so easy that I could let its current take me quietly for the goodness of its feeling. I climb the bank and shake the water from my coat which I love to do.

It is harder to climb the fence each time and maybe the next or the time after that will be the last time I am able and I will not know but it is better that way probably anyway.

## **Pressions.** [indelible retrospects]

## DARRYL STRANGE

### Abstract

This composition centres on the self-created emblem of a *footprint*, essentially an artifact that represents the author, his or her history, and method of mental association and also provides a form for the research and composition. The following narrative artistically exhibits knowledge of location, presence, and progress through the quintessential reality of the author, fashioning the resonance between reader and writer that creative writing conventionally offers.

## [Foreword formula]

**D** emember this well or pocket it for later. Take the precursory **N**measure and ensure that you're standing. You won't be getting anywhere while anchored in your indelibly sanguine-upholstered armchair. First, swing a select hip forward to shift your centre of gravity in front of you while invoking the muscles in your quad and knee to free a chosen foot from the ground. Then govern that free foot forward so that it lands on the earth at a distance proportionate to the length of your leg almost directly in front of your bearing foot. Serial monopedalism—one foot in front of the other. Note: the cadent tick of each step, rhyming the previous with consonance; they say our sense of rhythm derives from the rhapsody of our locomotion. If you glance retrospectively, the linearity of the impressions on the ground may give the sense that you've progressed in a straight line forward to where you currently are in mid-step; however, experience will tell of precariousness and vexed wanderlust due to allurements, turn-ons, and other interruptions such as...

## [iambic winter]

For the moment, the buoying Mallards disregard our approaching steps on the slime-covered stones that mottle the shore with the scatterings of glass shards, soggy socks, and whatever other wash up that rests in the cleavage like alms for high tide. If a river may experience high tide. Our dog Obi trots to the edge with a special interest and the ducks turn their backs and casually bob away in their own reflection before their confidence breaks and they flap away— *\*imbed slaps on the water\**—leaving a skitter track behind that soon ebbs over, resuming nonchalance. If only they could interpret his tail—a metronome's wagging finger—they might accept his friendly intentions. Before long, when he reaches the rockier beach up ahead of me, he'll choose his footing with the care he usually performs. We've walked this ground before. His conscious feet demonstrate for no one the decorum of his polished breed. If only he had shoes.

## [the as-fix-iation of soles]

When there were three hours between us, Sam and I met half-way almost every second week throughout the winter. Initially in Hope: a generous half-way if I may say so; afterwards the eccentric landmark Elvis Rocks the Canyon Cafe beyond Boston Bar (or before, depending on whose perception you take) seemed the obvious choice. One would bring wine, and the other some baked goods or samosas or fruit or anything to get us through the night and next morning. The wagon layered with pillows and blankets was seemingly enough to serve our purpose and conceal us at any discreet pull-off. We just wanted to be far enough off the highway to hide the soup on the windows: too obvious, too illustrative. A perceptive passerby might've be able to see the more-vivid-smear-gaps of clarity in the glassy dew-our cold footprints on the back windows. The distilled peep holes of mobile romance, clear and manifest like utterances spilled into words of ink, or wine on the yellow sheets. There's that picture that has them fixed on the windows as stains of memory. The steamy impressions appear warm, but the cold reality beyond the envelope of fleece made me run the car every-so-often to warm the air we breathed while fearing asphyxiation.

## [1. August 15, 2009. William James' bear]<sup>(1)</sup>

When I reached the bottom of the other side of Bastille Mountain I realized I had messed up. [*Idiot! Darryl you fucking idiot! You don't have time to crawl back up! Sam's waiting. You have to get back there! We have to leave!*] This was the second serious miscalculation today, and by this point a calm integrity that had brought me to the peak and over was double-backing on itself with excess. Somewhere in the last half hour, I had fumbled something, ripening an already frustrated disposition into greater unease. In need of repose, I whirled in the loose shale and began scrambling back up the mountain slope in a panic, following the little recessions my running shoes had made on the way down. In the sky I could see the late afternoon arriving and felt hours away from the security of the car back on the road—

## [Travels with Charlie: 10th Avenue]<sup>(2)</sup>

In the semblance of an impact sprinkler, Obi lifts his leg with shameless rectitude and irrigates a stop sign on one of the corners of our street, renewing it like all the other signs we encounter. Or: a tree, a fence post, a Jasper shrub, a rock, a beckoning leaf. [this is mine. this is also mine. And this, this right here! I've always tended to think that he is reclaiming, redefining perimeters, always smelling first for the unseen mark of vested interest. But for no particular reason on this occasion it seems like a kind of memory exercise. Perhaps he is leaving a trail of breadcrumbs in case he needs to find his way back. Maybe he's planning ahead, just in case; maybe he doesn't quite trust me today. When not stalled by interesting objects, we're heading down 10<sup>th</sup> towards the riverside but once he sees the other dogs at the park, we'll be required to appease. It's rained the last couple of days. It's likely the field will be a war-zone from each enthusiastic claw of the furry rabble. Obes' blonde legs will be pigmented with the tawny swarth of dirt; he'll need a hose before he's allowed inside.

### [the signatures of \$15 tatuajes]

Finally, after dawdle-trekking three times around the city's rubblecobble like tourists we found the place that does tattoos. To Sam and me, on the sidewalk, it seemed an open door leading into a walk-in closet–an extending finger of the street. Anticipated of course. The one thing we weren't expecting in Xela was a white-washed clinic smelling of glass or artificial apples. Inside was barren, except for some pendants and other jewellery products that clung to a black cloth draped over a small desk just inside the door. A little further in... two stools...

I'm up first. I'm sitting in my stool with my arms hugging the top of my head and the fellow is about to go ahead just below my left arm-pit where a veil of skin buffers my ribs. Surprisingly, I'm not *that* apprehensive. I've thought this over and the voice in my mind continues to whisper, *I want*. The rub on stencil of a plain walking figure is pressed on and I am remarked at the simplicity of the thing, a few easy limbs with the indelible character of stilled momentum, in motion but freeze framed. A contemporary symbol with the colourless stain of archaic metaphors.

The gun shake-wakes and performs its violent rattle, and the gloved hand that governs makes contact with skin, and while the clenching fist inside my ribs springs into an iambic solo of squeezes in reaction to proximity. *Lub-dub! Lubdub! Lubdub! Lubdub! Lubdub! Lubdub! Lubdub! Lubdub! Lubdub! Solo of squeezes my bere progressing millimetre my skin splits and tears at the fleshy seam where the needle petrifies the image into the skin—[<i>think of: schisms*]. *Lubdub lubdub lubdub!* They say our sense of rhythm originates from that resonate thumping while in utero. I imagine I must instinctively be pursing my lips together, censoring strife.

## [3. schism]

Steps later I found a footprint<sup>(3)</sup>: a solitary naked footprint. My first thought wasn't that it was the devil's. No, rather a big cat's, stamped like a validation in a bald patch of silt. Separate impressions, equally spaced, at which they are detached from the greater-pad-print. It has the distinct cast of a cat's that gives the same conquering impression upon those who gaze at it. You can imagine that the cleavage in between the pads allows it to grip the surface of the slope. I've never felt apprehension of wildlife but my stamina had been taxed and, as alarm bred with paranoia, I couldn't help but imagine the easy prize I must have appeared to be-hands on pumping knees. And the print lay there like a branding cleft-wound in the side as a part of the succession of paranoid perceptions that led me to the point where it became inconceivable whether I ran because I was scared. or whether I was scared because I ran. [Just follow the bread-crumbs home like a good boy Hansel and everything will be alright. One step in front of another, beginning with this one, here, at this point.]

## [journal entry]

23 November 2006: ultima dia en Mexico

In the food-court of the Cancun airport, an omniscient voice tells all that a flight to Chicago is making its final boarding. The food court is hungry with busy tourists like us—and *not* like us. The atmosphere is

actually making me a little sick. Sam and I watch the line for Burger King which extends so long there's a blue rope to orderly channel the fat ass Texan families who quicken their pace at a premature return to 'normal' food before the flight back to Houston. The Guacamole Grill has, of course, only two customers. Why are these people even here? What could they have learned from their little venture? That there's nothing like a sweet return to a tasty burger and fry? However ashamed I am at the association I have with them, I should really be asking myself what I've learned or accomplished. A few fistfuls of another language? A little backpacking experience, and maybe some impressions as to what it would be like to live outside my own comfort boundaries? How to get around in the unfamiliar, or more importantly, how to remain still in one place before the ticking to start moving again pushes?

Sometimes when I read this kind of bitter farewell, I struggle to identify with the emotional voice of the *me* there and then. No matter how, it always comes off as juvenilia. There is distance between me and my own printed voice that seems to be caused by a difference in location and some real conditions there and then, or here and now. It estranges. Does the frame of identity re-disposition itself as different environments create different perceptions, or pro-perceptions? The disgusted me in Mexico, with a different subjectivity, sees with a different logic than the me that is sitting here in bed trying to figure out exactly what I want to say. But considering that these entries, or footprints of a kind, elaborate these boundaries of location, would it be precariously temporal to think I still occupy those previous locations of mind, still bearing in my frame the indelible stamp of my lowly origin?<sup>(4)</sup>

## [28 November 2009]

As of now, it's quarter to ten and I am currently walking home from the bus stop at 3rd and Battle. My walking cadence is faster than I'd normally be comfortable with but the wind is harsh and naturally I have dressed unprepared, so I really must hurry back to where I left this morning. It's been a toilsome day-and-night in front of a computer screen and I'm totally bagged. On the corner of 7th and Battle, two blocks from where I live, a colossal boot is erected in solitude. It's a man's work boot with something menacing like a cow catcher across the toe; probably size 11 or 12; with an inherent stamp of heavy duty; reliable footwear is key. The severe wind doesn't allow me to stop but in a rear-glance from a half a block away I can still be stricken by it. If anyone is missing one like this, or can find use for something like it, it's just standing there.

### Endnotes

1. A term coined from William James' theory of fear stimuli in his essay "What Is an Emotion?" James poses the question, "Why do we run away if we feel that we are in danger?" Later in the narrative, I paraphrase James' more precise question of "Do we run because we are afraid, or are we afraid because we run?"

2. A reference to John Steinbeck's 1960's travelogue with his dog Charlie.

3. An intertextual reference to the opening sequence of chapter 18, "I Find the Print of a Man's Naked Foot," in Daniel Defoe's novel *Robinson Crusoe*.

4. A paraphrase of the infamous concluding line from Charles Darwin's *The Descent of Man:* "man still bears in his bodily frame the indelible stamp of his lowly origin." Darwin, Charles. *The Descent of Man and Selection in Relation to Sex.* New York: Appleton and Co., 1883. 619.