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Submissions are accepted from undergraduate students. Address all correspondence to: Stellar e/o The Learning Enhancement Center, 2501 N. Blackwelder Ave., Oklahoma City, OK 73106.

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Collusion and Confusion: Evaluating the Right of Self-Defense Against Private Actors
Zachary Newland

Abstract
At the dawn of the new millennium, public international law governing the use of military force is increasingly under assault from numerous potentially destabilizing emergent threats. Private armed groups, who, due to technological advances and widespread weapons proliferation, are capable of conducting destructive attacks of unprecedented complexity and gravity, arguably pose the most convoluted juridical challenges today. This essay examines the circumstances under which a state may legitimately use force in self-defense in response to attacks by private actors operating from abroad.

Introduction
At the dawn of the new millennium, public international law governing the use of military force is increasingly under assault from numerous potentially destabilizing emergent threats. Failed states, eroding sovereignty, and transnational terrorist organizations compose the avant-garde of the aforementioned unique pressures menacing the modern legal regime.

Private armed groups who, due to technological advances and widespread weapons proliferation, are capable of conducting destructive attacks of unprecedented complexity and gravity, arguably pose the most convoluted juridical challenges today.1 The attacks against the United States on September 11, 2001 violently illustrated the dramatically augmented striking capabilities of non-state groups. Traditional concepts of international relations governing armed attacks and self-defense were questioned because of the private armed group acts. Nevertheless, the U.S. responded to the terrorist attacks with the established time-honored reply:

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tactical air strikes. This raised an important question about the unilateral use of force by states: when can states legally employ their right of self-defense if attacked by private actors operating from abroad?

The multifaceted enigma non-state armed groups create threats to jeopardize the legitimacy of the international legal system. Responding to attacks from non-state entities within the framework of international law is neither simple nor straightforward, but will undoubtedly promote stability and serve the long-term interests of the global community by strengthening the normative regime. However, a canonical definition of the scope of those laws has yet to been reached, and this disagreement has prompted some commentators to advocate for the abolition of all regulations governing the use of force.

Armed non-state actors and the legal conflagration they create are thrusting the *jus ad bellum* towards a breaking point. The circumstances allowing a state to legitimately use force against private armed groups under international law are the core subject of this research. Incredibly elusive, uncovering the substantive content of the *jus ad bellum* requires an examination of formal agreements, customary state practice, general principles of law recognized by all peoples,

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2 The terms “non-state armed groups,” and “non-state actors,” are used interchangeably throughout this paper. Both terms are broad and have been used to describe paramilitaries, irregular forces, armed bands, guerilla groups, and terrorists. *See* Michael T. Klare, “The Deadly Connection: Paramilitary Bands, Small Arms Diffusion, and State Failure,” in *When States Fail: Causes and Consequences*, (2004), 116-117.

judicial decisions and scholarly writings. Furthermore, this work specifically analyzes: 1) the evolution of the modern laws of war; 2) contents of the current prohibition of force found in the United Nations Charter; 3) conditional requirements to the exercise of the right of self-defense; and 4) proposed solutions for strengthening the law.

The history and evolution of the laws governing the use of force provide context for any evaluation of the modern international legal regime. Since antiquity ideas of ‘just war’ have persisted among scholars, but it was not until the early twentieth century that states began to codify restrictions on the use of force.

After witnessing the devastation of the Second World War, the men who drafted the U.N. Charter sought to drastically curtail the use of war in international relations. The provisions for self-defense and the general prohibition of war in Article 2(4) together govern the modern use of force by states in international law. Since the only unilateral use of force allowed in the Charter’s framework is that of self-defense, current debate now focuses on the extent of that right.

Unremitting attacks by transnational non-state groups around the globe continue to underscore the importance of evaluating the norms governing the use of force. Contemporary State practice suggests the rules governing the use of force and self-defense are organically evolving to counter these threats. Deciphering the future of the normative regime regulating the use of force against non-state groups is essential to bolstering the legitimacy of today’s international legal framework and promoting global security in the new millennium.

**Evolution**

Sixty years after the last major international conflict, the 21st century rules governing the use of force in international

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5 Charter of the United Nations, 26 June 1945.

relations are widely accepted and generally agreed upon. Although the complete prohibition of war found in the Charter is relatively new, the belief that states should only resort to war for a good or “just” reason is almost as old as history. Originally known as the just war doctrine, or *bellum justum*, this principle has evolved gradually over time since being put forth in the teachings of St. Augustine.⁷

Between 1226-1274 CE, St. Thomas Aquinas expounded upon Augustine’s idea of just war and enumerated three criteria for the use of force: 1) sovereign authority alone can declare war 2) any attack must have a just cause for resorting to war 3) and there must be a “just” intent – the advancement of good or avoidance of harm.⁸ These criteria illustrate the continued efforts of theologians to resolve the conflicting ethical hurdles surrounding war and the church.

After Aquinas, the laws of war remained largely a static field of jurisprudence until the 17th century. During this time Hugo Grotius’ influential writings and the Treaty of Westphalia⁹ revolutionized relations between political entities and established the modern state system. The most important aspect of Grotius’ writings on *bellum justum* was his recognition of the illegality of resorting to war without ‘just’ cause, thus challenging the absolute right of a sovereign to resort to war for the first time.

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However, Grotius’ radical idea was immediately neutered in practice by the benefits of sovereignty arising from the Treaty at Westphalia in 1643. The emphasis of equality between absolute sovereigns created in the Westphalian peace gave individual states the ability to legitimate their resort to war without needing to seek any independent judgment about the “just” or “unjust” nature of their conflict.\footnote{See Joyner, ftn. 8.} State practice continued to reinforce this idea until, by the nineteenth century, most people believed states possessed the sovereign right to employ force to further political goals for any reason.\footnote{Id.}

The Hague Peace Conferences of 1899 and 1907 started an unprecedented era of growth in codified public international law\footnote{See generally Calvin D. Davis, The United States and the First Hague Peace Conference, (1962).} and resulted in the first prohibition of the use of war.\footnote{1907 Hague Convention II Respecting the Limitation of the Employment of Force for the Recovery of Contract Debts, Oct. 18, 1907, 36 Stat. 2241, and 1907 Hague Convention III Relative to the Commencement of Hostilities, Article 1, Oct. 9, 1907.} The agreements created by these conferences signaled the start of the slow retreat away from absolute sovereign equality back towards the Grotian “legitimate war” and modern \textit{jus ad bellum}. Both the League of Nations\footnote{See generally Brownlie, \textit{supra} note 5, for a discussion of League Assembly resolutions relating to aggression.} and the Kellogg-Briand Pact,\footnote{Treaty Between the U.S. and Other Powers Providing for the Renunciation of War as an Instrument of National Policy, Aug. 27, 1928, 46 Stat. 2343, 94 L.N.T.S. 57.} ratified after the First World War, further established the idea that the use of force should be limited, but these agreements lacked universal acceptance. Eventually the principle restrictions of war found in earlier
documents were expanded and enshrined in the UN Charter following the defeat of the Axis powers in WWII.

**U.N. Charter**

I. Charter Prohibition

In the aftermath of two World Wars, international leaders sought to establish a system that emphasized peaceful relations and restricted the use of military force. With those principles in mind the drafters of the United Nations Charter provided a forceful prohibition on the use of force found in Article 2(4):

“All Members shall refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any state, or in any other manner inconsistent with the Purposes of the United Nations.”

Article 2 (4) provides a complete prohibition of the use of force by states in their international relations. Although minor “breaches of the peace” have sporadically occurred during the last sixty years, almost all scholars agree the prohibition found in Article 2 (4) is universally supported and accepted as *jus cogens*.

II. Exceptions

Only two exceptions to the prohibition of Article 2 (4) are found in the text of the Charter. Self-defense and collective security measures authorized by the Security Council pursuant to Chapter VII are the sole deviations from the prohibition of the use of force in the Charter regime. The sole allowance for the unilateral use of force by states however, is based upon the provisions for self-defense found in Article 51:

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“Nothing in the present Charter shall impair the inherent right of individual or collective self-defence if an armed attack occurs against a member of the United Nations, until the Security Council has taken measures necessary to maintain international peace and security. Measures taken by Members in the exercise of the right of self-defense shall be immediately reported to the Security Council and shall not in any way affect the authority and responsibility of the Security Council under the present Charter to take at any time such action as it deems necessary to maintain or restore international peace and security.”20

Markedly contrasting the acceptance of the provisions in Article 2 (4), the scope of those rights in self-defense enumerated in Article 51 are widely disputed and hotly debated. Scholars have quibbled over the meaning of phrases such as “inherent right” and “armed attack” for the past six decades. Attacks from non-state groups have added to the cloud of ambiguity surrounding Article 51, and further inhibit efforts to reach working definitions for important terms crucial to establishing the parameters of self-defense.

**Customary Self-Defense**

Customary law forms the source of the “inherent right” of self-defense that, according to Article 51, “Nothing in the present Charter shall impair.” The International Court of Justice has itself affirmed the existence of a customary right to self-defense, but has not clarified if that right exceeds those specifically in the Charter.21 Therefore, it is necessary to

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examine customary law, and the limitations of Article 51, to understand the scope of self-defense.

I. Caroline Incident

During 1837, British troops from Canada seized the U.S. steamboat The Caroline on the Niagara River in U.S. territory and destroyed it, because it was transporting supplies into Canadian territory to help foment rebellion. In what became known as the Caroline incident, through a flurry of diplomatic exchanges between U.S. and British officials, the preconditions for the legitimate use of force by states in claims of self-defense were outlined.  

During the diplomatic discourse after the Caroline’s destruction, then Secretary of State Daniel Webster refuted the British claim of self-defense saying:

“...a necessity of self-defence, instant, overwhelming, leaving no choice of means and no moment for deliberation, must be present to legally use force against another State and that when using force a State’s response must be proportional to the threat it is faced with and limited in scope to removing that threat.”

Eventually the British government accepted Webster’s definition, and the acquiescence of the world’s leading naval power canonized Webster’s criteria into a standard definition of customary law.

II. Corfu Channel

Another significant contribution to the customary law governing the use of force is grounded in the Corfu Channel decision. It was in the Corfu Channel case opinion that the International Court of Justice first referenced a State’s responsibility to ensure that its territory not be used to violate

23 Webster-Ashburton Treaty—The Caroline Case, Avalon Project at Yale Law School
the rights of other States.\textsuperscript{25} \textit{Corfu} speaks to the universal principle that every State not only has a duty to refrain from providing support to groups carrying out subversive attacks against another State, but also a duty of vigilance to prevent such activities from occurring.

\textbf{Self-Defense}

Apprising the right of self-defense against non-state armed groups entails a number of separate but related analyses. First, the perquisite material requirements necessary to trigger the right of self-defense are examined. Secondly, the nexus required between a private armed group and the territorial state in which the group resides is inspected to assess when self-defense may be exercised.

I. Until-Clause

There are two procedural obligations in the customary international law governing the use of force in self-defense. First, is the “until-clause” found in Article 51 suspending the right of self-defense at the point when the Security Council has taken measures necessary to maintain international peace and security? In the past this provision has given rise to some controversy due to the absence of express judgment by the Security Council on the existence or continuation of the right to self-defense according to Professor Christine Gray.\textsuperscript{26}

Many scholars cite the Falklands (Malvinas) conflict as the preeminent example of the tension created by this procedural obligation; subsequent to the Argentine invasion of UK territory in the Falklands in 1982 the Security Council concluded, in Resolution 502 (10-1-4), that a breach of the peace existed, called for the immediate cessation of hostilities, withdrawal of Argentine forces, and for the Argentinean and UK governments to seek a diplomatic solution to their grievances.\textsuperscript{27} Many observers believed that this resolution amounted to measures ‘necessary to maintain the peace and security’ and that the UK right to use force in self-defense was

\textsuperscript{25} \textit{International Court of Justice Reports} 1949:3


\textsuperscript{27} Id.
terminated. However, the U.K. argued that their right was not terminated since Argentina remained in occupation of the islands. Agreement about when the right of self-defense ceases is largely irrelevant in most modern conflicts since the Security Council rarely speaks on the legality of any use of force.

II. Duty to Report

The second procedural obligation in Article 51 is the duty of states to report measures taken in self-defense to the Security Council. In practice and in decisions by the ICJ, the duty to report to the Security Council has taken a secondary role. Moreover, states often report their actions to the Council for propaganda purposes like the repeated claims of self-defense reported by Iran and Iraq during their eight-year conflict.

 Armed Attack

In contrast to the procedural obligations created by Article 51, the requirement that an armed attack has occurred is a vital portion of the substantive right of self-defense in international law. Analysis of any case involving self-defense will raise two questions, the first related to the *ratione materiae* aspect, the second to the *ratione personae* quality.

I. Ratione Materiae

  A. Sufficient Gravity

Determining if an “armed attack” has taken place first requires that a decision be made as to whether the use of military force involved is of sufficient gravity to trigger the right of self-defense. According to the ICJ a distinction must

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be made between “the most grave forms of the use of force (those constituting an armed attack) from other less grave forms.” Furthermore the Court added that an armed attack has occurred when armed bands, groups, irregulars or mercenaries carry out acts of armed force of such gravity as to amount to, by their scale and effects, an actual armed attack if they had been carried out by regular forces.

The Court therefore introduced a threshold of minimal gravity that must be obtained for any use of force to be considered an armed attack. The precise threshold of minimal gravity has been the subject of much academic debate. Some scholars have argued only large scale attacks qualify as ‘armed attacks’ within the scope of Article 51. Contrary thinkers however have advocated for an extremely low threshold, some even arguing that any use of force may constitute an armed attack.

Recent case law from the ICJ appears to discredit the view that a large-scale attack is needed to trigger self-defense rights. This approach has been strongly endorsed by many scholars in the United States. Also the Court seems to have taken the position that a number of small scale attacks may be taken cumulatively to determine if self-defense is permitted.

36 “The Court does not exclude the possibility that the mining of a single military vessel might be sufficient to bring into play the “inherent right of self-defense””: Oil Platforms (2003) ICJ Rep 161, 195.
It has been suggested that current state practice supports the view that even small-scale attacks can trigger Article 51. Authors supporting this idea point to the Israeli/Hezbollah conflict in 2006 arising from an attack on a small Israeli patrol, and the subsequent international support for Israel. However the legality of the Israeli operations in Lebanon continues to be a topic of controversy among scholars and cannot be viewed as creating or changing norms governing the use of force.

B. Intent

In addition to the material gravity required to trigger Article 51, the ICJ has suggested a need for a subjective element in deciphering “mere frontier incidents” from “armed attacks,” and is suggested in the Nicaragua and Oil Platforms cases. The majority opinion in the Nicaragua case refers to the “circumstances of these incursions or their possible motivations,” implying that episodes where there is no intent to carry out an armed attack, such accidental incursions, should be characterized as “frontier incidents.” During the Oil Platforms case the ICJ concisely concluded that harm by a

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37 In Armed Activities, the Court concluded that ‘even if [the] series of deplorable attacks could be regarded as cumulative in character, they still remained non-attributable to the DRC’: Armed Activities on the Territory of the Congo (Democratic Republic of Congo v Uganda) (Judgment) (2005) ICJ (146) <http://www.icj-cij.org> at 23 February 2008.


mine or missile constitutes an armed attack on a third state
during a conflict between two other states only if the attack
was *specifically* aimed at the third state. The ICJ’s brief
discussion of the intent required in an armed attack only added
confusion the difficult issue and has been severely criticized.\(^{41}\)

II. *Ratione Personae*

Contrary to the relative clarity as to what actions may
constitute an armed attack, opinions about who may commit
an armed attack are highly divided and fractionalized. Debate
about the permissibility of self-defense in response to attacks
from non-state actors and the degree of link that must exist
with their host states persists to this day.

A. Indirect Aggression

Although the ordinary meaning of Article 51 does not in
any way restrict the scope of who can commit armed attacks,
most scholars believe self-defense was traditionally seen as a
mechanism for states to ward off attacks by other states.\(^{42}\)
The principle stance that attacks should be directed against a state
and by a state is supported in early literature.\(^{43}\) However, it
was also accepted that attacks carried out by private actors for
which the state shared a certain degree of responsibility were
also included as armed attacks.\(^{44}\) This type of attack was often
referred to as “indirect” military aggression differing from
“direct” military aggression undertaken by traditional military
forces.\(^{45}\)

Decolonization in the second half of the 20\(^{th}\) century
turned the traditional international order, which had endured

\(^{41}\) Taft, “Self-Defense and the *Oil Platforms* Decision,”

\(^{42}\) Tom Ruys and Sten Verhoeven, “Attacks by Private
Actors and the Right of Self-Defense,” (2005) 10 *Journal of
Conflict and Security Law* 289, 291.

\(^{43}\) J.L. Kunz, “Individual and Collective Self-defense in
Article 51 of the Charter of the United Nations,” (1947) 41
*AJIL* 872-879, 878.

\(^{44}\) See I. Brownlie, “The Use of Force in Self-Defense,”
(1961) *BYBIL* 245.

\(^{45}\) A. Cassese, “Terrorism is also Disrupting Some
since the peace of Westphalia, upside down overnight. As the empires of Europe slowly crumbled the world witnessed an unprecedented era of upheaval where one man’s terrorist was truly another man’s freedom fighter. “Indirect” aggression, often cloaked in nationalism or anti-colonialism, and the extent of permissible defensive action became immensely controversial. However, in practice states used numerous criteria to define the link between states and private actors, illustrating that states conception of indirect military aggression widely differed.

1. Aiding and Abetting

According to authors Ruys and Verhoeven, during the first forty years of the Charter there were three discernable levels in the formulas for indirect aggression.\(^{46}\) The initial level was the active support provided to nonstate actors in the form of training, weapons, and logistical support. Undoubtedly this was the justification most commonly invoked and also sometimes referred to as “aiding and abetting.”

When French troops undertook military actions in Tunisia in 1958, France claimed self-defense and that the Tunisian government had aided and abetted Algerian rebels carrying out attacks on French territory.\(^ {47}\) Active state support of irregular armed groups has continued as the most common justification for the use of force in response to attacks by private actors since the end of the Cold War. For example, Tajikistan cited the right of self-defense against cross border attacks by anti-government troops supported by the Afghan Ministry of Defense in 1993.\(^ {48}\) Four years later, Burundi claimed that Tanzania’s military support of Burundian exiles justified its territorial incursions into Tanzania.\(^ {49}\)


\(^{47}\) (1958) *UNYB* 77-78.


\(^{49}\) (1997) *UNYB* 89-90.
2. Passive Support

More than once, states using force in response to private attacks invoked the secondary level of “passive state support” i.e. the ‘knowingly harboring’ of armed bands instead of active support. Portugal, in 1969, claimed the right of self-defense in response to armed attacks by anti-Portuguese organizations that were allowed to operate from bases in Senegal.  

3. Unable to Prevent

The third level of linkage between states and private actors describes situations where states are incapable of preventing attacks by non-state actors. Israel was the only state to invoke this justification during the first forty Charter years, and did on a number of occasions in the 1980s when responding to terrorist groups operating in Southern Lebanon.

Although in different language, these examples illustrate that states claiming self-defense against private attacks universally emphasized the role of states as the basis of their justification. However, it remains difficult to draw conclusions from state practice during the first years of the Charter due to the international community’s negative response to self-defense claims made by states such as France, Israel, and Portugal on more than one occasion. Self-defense against private attacks remained controversial, but generally state practice illustrates a trend of less restriction on self-defense.

B. U.N. Organs

The most significant mechanism for illuminating the meaning of the jus ad bellum is through interpretation, in the context of specific incidents of state practice, by the principal organs of the United Nations—the Security Council, International Court of Justice, and the General Assembly. Three prominent GA Resolutions, which enumerate that armed intervention by a state is contrary to human rights and

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self-determination, have shaped the law on non-intervention since 1945. Of those three, the last declaration enacted is clearly the most significant contribution to international law.

1. Definition of Aggression

A crucial advancement for the use of force law came in 1974, when the General Assembly adopted Resolution 3314 on the Definition of Aggression in order to assist the Security Council in determining when an act of aggression is committed by providing a non-exhaustive list of the types of coercion violating Article 2(4). Throughout the course of the efforts to reach an agreed upon definition of aggression, the boundaries and consequences of “indirect” aggression became one of the main stumbling blocks in the process, ultimately driving a wedge between western and developing countries. Article 3(g) of GA Res. 3314 states that aggression is committed by:

“the sending by or on behalf of a State of armed bands, groups, irregulars or mercenaries which carry out acts of armed force against another State...or its substantial involvement therein”.

Two distinct acts of indirect aggression fall within this article. First, the sending of irregular troops – non-state armed groups – into another State can be defined as nearly a form of

56 Definition of Aggression, G.A. Resolution 3314, 29th session, 2319th plenary meeting, annex (14 December 1974) Article 3(g).
direct aggression in that the State is clearly responsible for the hostile act. The second act of indirect aggression is “substantial involvement:” including training, supplying, equipping, financial aid, and the use of territory.

2. S.C. Contributions

Another important stride in the modern application of jus ad bellum occurred in 1977 when the U.N. Security Council used the term “aggression” with regard to an invading force of mercenaries who attacked the Marxist government in Benin without naming a state sponsoring the attack. The Council had always used the term “unlawful aggression” in reference to a specific state committing the crime prior to the Benin declaration.

C. State Involvement

1. State Responsibility

Attributing private conduct to a state is difficult in international law, and as a general rule states are only responsible for the acts of state organs, while acting in their official capacity. The International Law Commission’s rules on state responsibility codified in the Draft Articles on State Responsibility for Internationally Wrongful Acts (2001) (hereafter DASR 2001) are secondary rules establishing the general requirements for states to be held accountable for acts that breach duties in international law.

Since these rules do not address the issue of substantive international law they only come into effect when the primary rules, such as the prohibition on the use of force, are violated and no specific regime exists to determine state responsibility. The general rules of the DASR therefore apply to the law on the use of force, and Article 8 DASR 2001 actually comes from the Nicaragua case.

The DASR 2001 provides two major exceptions however where private conduct is imputable to a state. The first

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58 Article 4 in junction with Article 7 DASR 2001.
60 ILC, loc. Cit., fn. 48, 105-107.
exception is found in Article 8, which states that the conduct of a person or group of persons shall be considered an act of a state under international law if the person or group of persons is in fact acting on the instructions of, or under the direction or control of that state in carrying out that conduct. Article 8 covers two distinctly different circumstances.

The first situation involves a state giving specific instructions to individuals to carry out a certain conduct. It is widely accepted that such conduct is attributable to a state even if the individual is a private person and regardless of whether the conduct was within or outside of governmental authority.

The second scenario, dealing with private persons acting under the direction or control of a state, is much more problematic; requiring some determination of what extent the direction or control must be exercised. The effective control or direction doctrine from the ICJ decision in the Nicaragua case seems to be the proper test in this manner. In the Nicaragua opinion the Court declared that ‘effective direction or control’ requires that the offensive conduct was an integral portion of the operation directed or controlled by a state. Conversely, conduct merely incidentally related to an operation by a state is outside the state’s direction or control and is not imputable to the state. The Tadic case before the International Criminal Tribunal for the Former Yugoslavia (hereafter ICTY) appears to have lowered the threshold by requiring only “overall” control, which goes beyond the mere financing, training or equipping. Yet, the ICTY is limited to establishing individual criminal responsibility and the facts of the Tadic case were distinctly different from those in the Nicaragua case. Therefore, it remains to be seen if the “overall control” test of Tadic will replace the ICJ’s effective control standard.

Article 11 DASR contains the second exception to the rule that private acts do not entail state responsibility. Private


\[62\] The ILC followed the Nicaragua test in adopting Art 8 DASR 2001.
conduct will be considered an act of that state, according to this Article, “if and to the extent that the State acknowledges and adopts the conduct as its own.” In order to distinguish this option from mere approval or endorsement, both requirements must be fulfilled completely. States must explicitly recognize conduct as their own; acknowledgement and endorsement of private acts are insufficient for attribution. This provision comes from the United States Diplomatic and Consular Staff in Tehran (hereafter the Tehran case)\(^\text{63}\) where the ICJ determined that the mere approval of the hostage takers’ actions was insufficient, but the policy of not ending the hostage taking to put pressure on the United States, transformed the occupation of the American embassy into acts of Iran. As a result, the government of Iran truly adopted the private conduct as its own.

2. Substantial Involvement

As previously shown, both articles 8 and 11 DASR involve a high threshold for attributing conduct to states. Attributing private conduct to states is not always necessary; the wrongful conduct of the involved state may itself breach the prohibition of indirect aggression defined in article 3(g) of the Definition of Aggression. The “substantial involvement” clause is the bedrock upon which victim states can assert grievance.

More often than not, states involved in the “sending of armed groups” will have effective control and the private conduct in question can be attributed to the state in accordance with article 8 DASR 2001.\(^\text{64}\) Yet, however unlikely, a state only “substantially involved” has breached the prohibition of the use of force by committing an act of aggression.\(^\text{65}\)


Remaining is the sole question of whether the substantial involvement in the acts of private armed groups qualifies as an armed attack and justifies measures of self-defense against the target state. The drafters of the Charter intentionally used two different terms: the concept of aggression developed to include forms other than armed force such as economic and ideological aggression; the phrase “armed attack” in Article 51 limited the extent of self-defense to armed aggression.

The ICJ in the seminal 1986 Nicaragua case eventually clarified the relationship between aggression and armed attack. The International Court of Justice in the Nicaragua case treated art 3(g) as the customary standard for defining the permissible scope of self-defense in response to indirect aggression.\(^6^6\) However, technically the Definition of Aggression merely defines the concept of an ‘act of aggression’ for the purposes of art 39 of the U.N. Charter and purports to not lessen or enlarge the scope of the use of force allowed by the Charter.\(^6^7\)

By applying article 3(g) to the exercise of the right of self-defense against non-state attacks, the ICJ made clear that the right is not confined to circumstances fulfilling the conditions of either article 8 or 11 DASR, but also arises in situations where a state is merely substantially involved in the actions of private armed bands. However, the Court also adopted an extremely narrow approach to the idea of substantial involvement.

Furthermore, the Court determined that providing assistance to rebels in the form of weapons or logistical support fell beyond the purview of art 3(g) and could not be considered an “armed attack.”\(^6^8\) The Court’s restrictive

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\(^{6^7}\) Definition of Aggression, fn 22, Ibid art 6. See also Special Committee on the Question of Defining Aggression, *Summary Records of the One Hundred and Tenth to One Hundred and Thirteenth Meetings*, 7th sess, UN Doc A/AC.134/SR.110-113 (18 July 1974) 39 (UK).

reading and apparent disregard for the “substantial involvement” phrase was immensely criticized by a number of western scholars who disagreed with the attribution requirement.  

**Self-Defense Post 9/11**

Discussion about self-defense against attacks by non-state actors has immensely increased as a result of the September 11 attacks. Those massive attacks heralded a reassessment of the law on self-defense. Private attacks are not a new phenomenon, but the scale of possible wanton destruction created by them is undoubtedly of a higher magnitude than previously seen. The current Sophie’s choice is clear. It is unacceptable that states must endure private attacks without the ability to use force against the home bases of these groups in defense. On the other hand, state sovereignty remains a basic tenet of the international order and should not be whimsically violated. The context of the discussion on self-defense has also shifted from the initial focus on the support of national liberation movements and mercenary groups, towards contemporary problems surrounding state-sponsored terrorism.

One day after the 2001 terrorist attacks on the United States, the Security Council adopted Resolution 1368, implicitly recognizing the inherent right of self-defense in its preamble, and similarly Resolution 1373 on September 28, 2001. Although a small group of authors have expressed contrary beliefs, these resolutions clearly show that the Security Council’s members did in fact accept the USA’s use of force in self-defense in response to terrorist attacks.

Following September 11th, Article 5 of the NATO treaty was invoked for the first time, and the attacks were declared as

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an attack on all treaty member states.\textsuperscript{71} The Organization of American States also invoked collective self-defense in response to the attacks.\textsuperscript{72}

When the Taliban refused the United State’s demands to close Al Qaida terrorist training camps, surrender Osama bin Laden, and open Afghanistan to inspections,\textsuperscript{73} the USA began \textit{Operation Enduring Freedom} with military support from many European countries.\textsuperscript{74} Both the U.S. and U.K. asserted their actions were undertaken in accordance with Article 51 when writing to the Security Council.\textsuperscript{75} Support of the military action was given by Russia, China, and Japan\textsuperscript{76} while only Iraq openly challenged the legality of the military action.\textsuperscript{77}

In apparent opposition to the developments in state practice, in 2004 the International Court of Justice held fast to the view that attribution of non-state actor conduct to a state was essential to \textit{jus ad bellum} in its \textit{Advisory Opinion on the Israeli Wall}.\textsuperscript{78} Israel’s claim of acting in self-defense under Article 51 against attacks by terrorist groups was summarily dismissed by the Court since Israel did not claim that the terrorist attacks were imputable to a foreign state, and because the aforementioned attacks were not transnational, occurring

\footnotesize{\textsuperscript{71}} 40 ILM (2001) 1267, 1268.
\footnotesize{\textsuperscript{72}} 40 ILM (2001) 1270, 1273
\footnotesize{\textsuperscript{73}} Sean Murphy, “Contemporary Practice of the United States relating to International Law,” 96 \textit{AJIL} (2002) 237 at 243.
\footnotesize{\textsuperscript{76}} Murphy, “Contemporary Practice of the United States relating to International Law,” 96 \textit{AJIL} (2002) 237 at 248.
\footnotesize{\textsuperscript{77}} \textit{The Guardian}, 8 October 2001.
\footnotesize{\textsuperscript{78}} Advisory Opinion on the Legal Consequences of the Construction of a Wall in the Occupied Palestinian Territory, 2004 I.C.J. 136 (July 9).
entirely within Israeli occupied territory.\textsuperscript{79} The Court failed to explain, except in the scathing admonitions of some dissenting judges, why self-defense against non-state actors was impermissible, especially in light of the global community’s reaction to the attacks of 9/11 as justifying a response in self-defense.\textsuperscript{80}

Widespread criticism of the Court’s opinion might have prompted the quick intellectual retreat of the Court in the 2005 case dealing with \textit{Armed Activities on the Territory of the Congo}.\textsuperscript{81} Writing in the \textit{Armed Activities} case the Court sheepishly noted that due to the circumstances of the case, there was “no need to respond to the contentions of the Parties as to whether and under what conditions contemporary international law provides for a right of self-defense against large scale attacks by irregular forces.”\textsuperscript{82} Thus, the Court deliberately skirted the controversial issue of self-defense against non-state actors in the absence of state involvement.

In their Separate Opinions, both Judge Simma and Judge Kooijmans argued that the events of 9/11 had brought about a change in the law, and that it was unreasonable to deny the right to self-defense against armed attacks by irregular forces operating in territory outside the control of another state.\textsuperscript{83}

\textsuperscript{79} Advisory Opinion on the Legal Consequences of the Construction of a Wall in the Occupied Palestinian Territory, 2004 I.C.J. 136 at 194, para. 139 (July 9).


\textsuperscript{81} Armed Activities on the Territory of the Congo (Congo v. Uganda), 2006 I.C.J. 168, 223 (December 19, 2005).

\textsuperscript{82} Armed Activities on the Territory of the Congo (Congo v. Uganda), 2006 I.C.J. 168, 223, para. 147 (December 19, 2005).

\textsuperscript{83} Judge Simma, Separate Opinion, para. 4-15; Judge Kooijmans, Separate Opinion, para. 16-31. Armed Activities on the Territory of the Congo (Congo v. Uganda), 2006 I.C.J.
Despite long-held beliefs held by some, the Charter does not solely govern relations between states and it expressly speaks to relations of states to non-state actors.\textsuperscript{84} Furthermore, on more than one occasion the Security Council has said the conduct of non-state armed groups can be a threat to international peace and security.\textsuperscript{85}

Influential author Sean D. Murphy has argued that there is nothing in the ordinary meaning\textsuperscript{86} of Article 51 that requires an armed attack to be imputed to another state.\textsuperscript{87} Indeed the text does speak of self-defense by a “Member of the United Nations” against an armed attack without any qualification as to who is conducting the action as pointed out by Murphy.\textsuperscript{88} Reading the language in context\textsuperscript{89}, comparing the language used in Article 2(4), which refers to a use of force by one “Member” against “any state,”\textsuperscript{90} it seems apparent that Article 51 has no similar construct.

\textbf{Conclusions and Recommendations}

In the wake of the attacks on September 11th, 2001, international law has seen an increasingly complex clash between state responsibility and the inherent right of self-defense. A Starting point for addressing what direction the law should take could be to approach the \textit{jus ad bellum} more

\textsuperscript{84} U.N. Charter preamble, Articles 55-56.
\textsuperscript{85} In accordance with Chapter VII of the UN Charter, see S.C. Res. 1540, pmbl. (Apr. 28, 2004); S.C. Res. 1566, para. 1 (Oct. 8, 2004); S.C. Res. 1373, pmbl. (Sept. 28, 2001).
\textsuperscript{86} See Vienna Convention on the Law of Treaties, May 23, 1969, Art. 31(1), 1155 UNTS 331, 340 (“A treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in light of its object and purpose.”)
\textsuperscript{88} Id.
\textsuperscript{89} Vienna Convention on the Law of Treaties, supra note 69, Art. 31(1).
\textsuperscript{90} UN Charter Article 2(4).
holistically as suggested by Sean Murphy. According to Murphy, instead of legal analysis slicing the different portions of the law into segments to determine their legality, it would be more prudent to step back and assess when the global community generally seems to favor the use of force.

As the conflict in Afghanistan has shown, an attack against any non-state actor will inevitably constitute the use of force in the territory of another state. Other authors have advocated the adoption of a strict liability approach to state responsibility for non-state actor activity. Applying strict liability would allow states to be held responsible for the failure to control the activities of armed bands.

Current law on the use of force does not recognize the emerging paradigm in State practice and the breakdown of the traditional 19th-century State system. States have been generally reluctant to recognize the role of non-state groups in international law because that recognition would afford them legal personality and further erode the antiquated concept of absolute sovereignty.

Twin problems of legal personality and territorial integrity could be addressed by reassessing international law’s emphasis on the territorial state. Reasoning would be based on the fact that if non-state armed groups already control portions of territory then that state’s sovereignty has already been compromised in those areas.

Blind adherence to the state system has become an intellectual logjam, creating a legal regime that “encourages states to make war through proxy non-state actors and to judge for themselves when they can intervene in territory controlled by non-state actors.”

93 Barbour and Salzman, supra 64, at 105.
An alternative approach would be to attempt to curb the unlawful activities of these groups through international criminal law.\(^9^4\) At the ICC meeting during summer 2009, parties to the Rome treaty will decide on a definitive definition for the crime of aggression. That new crime could be used to punish the leaders of non-state armed groups or the leaders from their sponsor state. Aggression aside, most of these groups could also be prosecuted for numerous human rights violations.

The overarching system of international law has remained static since Hugo Grotius and Westphalia in 1649. The U.N. charter and other 20th-century treaty regimes have proven to be currently inflexible to the dramatic changes that occurred during the last 50 years. The increasingly common use of non-state armed groups by states, as a foreign policy tool demands that international law governing the use of force be reexamined. Turning away from international cooperation is not a viable alternative to working within the international legal framework. A new consensus must be reached by the emerging global powers on what the rules of the next “great game” will be.

Classification, Method, and Gender Influences On the Perception of Suicide
Andria N. Robbins, Laura L. Sabolich and Amy E. Cataldi

Abstract
Two hundred college students were randomly selected from Oklahoma City University. Our 2 x 2 x 2 design created eight scenarios featuring suicidal situations with the variables gender (male/female), method (active/passive) and classification (attempt/commit) varied. After reading a scenario, participants rated the suicide attempter or committer on 18 variables using a 7-point Likert scale. A three-way ANOVA (Method x Gender x Classification) revealed a significant interaction for the variable dramatic F(1, 199) = 14.122, \( p = .00, \hat{\eta}^2 = .069 \). For the two-way interaction of Method x Gender, both courageous and similar to me were significant (F(1, 199) = 5.52, \( p = .02, \hat{\eta}^2 = .028 \) and F(1, 199) = 4.168, \( p = .04, \hat{\eta}^2 = .021 \), respectively). Finally, the two-way interaction of Method x Classification, effective was also significant, F(1, 199) = 5.018, \( p = .02, \hat{\eta}^2 = .025 \).

Classification, Method, and Gender Influences On the Perception of Suicide
Suicide rates of young people have tripled since the 1950’s. Overall suicide is the third leading cause of death among teens and the eleventh leading cause of death in the United States. Because every suicide has a great impact on at least six people, approximately 4.4 million Americans live with the grief felt by suicide; this number grows by 175,000 people each year (American Association of Suicidology, 2008). For these reasons, suicide is an important subject to research. The most basic definition of suicide is “...the act of killing oneself on purpose. The word suicide comes from the Latin sui, meaning ‘self’ and caedere, which means ‘to kill’” (Marcus, 1996, p. 1). However, there are several other definitions. For instance, suicide can also be defined as “a conscious act of self-induced annihilation...” (Leenaars, 1996, p. 224). Marcus says that suicide can also be “...a relief, a
shame, a stigma...a cry for help, a release from pain...a way out...punishment, revenge...dramatic...devastating and unforgivable” (p. 1-2). Although research on the topic of suicide “...does not allow us to predict who will die by suicide” (Brenner et al., 2008, p. 211), suicide research does have the potential to help society understand and identify the factors that contribute to suicidal behavior.

**Suicide Classifications**

Several researchers have investigated the differences between suicide attempters and suicide completers. Suicide attempters “are individuals who are inclined towards suicide but have not yet completed it” (Verona, Patrick & Joiner, 2001, p. 2). Bryan, Johnson, Rudd and Joiner (2008) made three further classifications of attempters: “...true single attempters who will not attempt suicide again...future multiple attempters who will” (p. 519) and “...suicide ideators” who contemplate attempting but do not attempt (p. 520). Conversely, suicide completers are successful in ending their own lives and “...differ from attempters and ideators in that they are more likely to have a diagnosis of bipolar disorder; a mood disorder with comorbidity...and access to firearms in the home” (Verona et al., p. 3). Because suicide attempters differ from suicide completers, this research will investigate whether perceptions of suicidal people are different based on their classification (attempter vs. completer).

**Suicidal Factors**

There are other factors that affect whether people choose to commit. It is by understanding these factors that researchers are able to understand the causes of suicide and to create methods of prevention. A few examples of internal factors are anti-social and impulsive features of psychopathy (Verona et al., 2001) and socially prescribed perfectionism (Dean & Range, 2001). Other factors such as sexual orientation, (Fergusson, Horwood, & Beauvais, 1999; Morrison & L’Heureux, 2001) and eating disorders (Zuker, LaBar, Pelphrey, Losh, Bulik, & Piven, 2007) have also been associated with an increased risk of suicidal behavior. Additionally, external events have also been reported as a cause for suicide attempts, these include “… ill health, being
abandoned by a lover, losing one’s income…” (Leenaars, 1996, p. 221).

Perceptions of Suicide

Although suicide research has been helpful in understanding causes leading to suicidality, our study will investigate perceptions of both committers and attempters. Perception is a process of impression formation. It consists of gathering information in order to form an attitude or opinion about someone (Taylor, Peplau, & Sears, 1994, p. 35). According to Asch (1943) impressions form quickly and without effort. Additionally, perceptions or even misperceptions can lead to prejudiced attitudes (Servais & Saunders, 2007). It is this perception-prone prejudice in which we are most interested. Specifically, we want to know what people think about those who engage in suicidal behavior.

In a study by Servais and Saunders (2007) clinical psychologists’ perceptions of people with mental illnesses were investigated. The psychologist’s perceptions were measured with a survey in which they were asked to rate five targets (i.e. yourself, a member of the public, a person with moderate depression, a person with borderline features, a person with schizophrenia) using a semantic differential scale (e.g., “…effective-ineffective, understandable-incomprehensible, safe-dangerous…” (p. 215). They found that psychologists perceived people with schizophrenia to be the least like them and the most ineffective and incomprehensible. People with borderline personality disorder were perceived to be the most dangerous. The authors suggested that these perceptions could lead psychologists to treat clients with mental disorders differently based on perceptions of their diagnosis. And if trained professionals have this negative perception of people with mental illness, how much more might these same misplaced perceptions affect the way everyday people perceive those who suffer from mental illness?

Over twenty years ago, Rudestam and Imbroll (1983) investigated societal perceptions of a child’s death by suicide. In their study, participants responded to newspaper accounts of a child who died either from a “…bone marrow disease, an automobile accident, a barbiturate overdose, or by hanging…”

\[\text{[312x565]}\]
The findings revealed that the perceptions of the child were altered significantly based on whether or not the child died by suicide, especially in determining if the child was mentally ill. Except for increased interest, the participants showed only negative perceptions toward the child and the child’s family in the suicide scenario. So, this study demonstrates that there is potential for negative perceptions and stereotypes to be misplaced onto suicide commiters as well as their families.

Mueller and Waas (2001) tested college students’ perceptions of peers who exhibited suicide symptomatology and its relationship to their level of empathy. Participants were separated into high and low empathy levels based on their Independent Reactivity Index scores, then both groups were presented with 2 scenarios about a hypothetical friend who showed suicidal symptoms. Findings revealed that participants had differing reactions according to the kind of symptoms represented in the scenario. For instance, participants would be more likely to inform someone about a suicidal person if their symptoms were behavioral (e.g., giving away possessions, participating in risk-taking behaviors, etc.). However, participants were more likely to offer help when the suicidal person showed affective symptoms (e.g., depression, loneliness, anger). Mueller and Waas also found gender differences. In the high empathy group, women were more likely to engage in distracting activities to aid the suicidal person (i.e., taking the suicidal person to a movie to help them forget about their problems), while in the low empathy group, men were more likely to engage in the same kind of distraction activities. This research shows that perceptions of the seriousness of suicide can vary based on symptomatology and that perceptions of how to react to these symptoms can vary based on gender.

Selby and Calhoun (1975) investigated perception variables such as gender and whether the person committed or attempted suicide. Participants were undergraduates ranging between the ages of 19 and 49. They responded to suicide scenarios where the sex of the person and whether the person attempted or committed suicide were systematically varied. Overall, women were perceived as having higher suicide
intentionality and were thought to be more mentally ill than men. Also, those who attempted suicide were thought to be more mentally ill than those who actually committed. The perception of attempters being more mentally ill is of exceptional interest because Verona et al. (2001) found that this is a false presumption and that committers are actually more likely to have a diagnosis of a mental illness than attempters.

**Perception of Suicide Methods**

Leenaars (1990) did not look for perceptions of suicidal people; instead he examined different psychological characteristics of committers found in their suicide notes. In a single-blind study, Leenaars had two clinical psychologists read forty-two actual suicide notes; half written by people who had used active methods such as “…firearms, hanging, and stabbing…” and twenty one were written by people who had used passive methods such as “…drugs and poisons” (Leenaars, p. 387). A comparison showed no significant perceived differences in psychological characteristics such as “…unbearable psychological pain…rejection-aggression…inability to adjust…and…cognitive constriction” and between active and passive suicide methods (p. 386-387). Based on these results, Leenaars concluded that psychological factors do not influence the type of method chosen by suicide committers.

Researchers have identified multiple methods for committing suicide. Some of the more common methods include “firearms, hanging, drugs, motor-vehicle exhaust, and jumping from high places” (Marcus, 1996, p. 46). Lester (1987) studied the perceptions of undergraduates asking if they would prefer an active (gun) or passive (pills) method of suicide. They were then asked to rate each method on a semantic differential scale (e.g., “…quick-slow, painful-painless, difficult-easy…”) (p. 216). Results showed that the participants perceived guns as “quick, painful, difficult, irreversible, dramatic, masculine…messy…as moderately courageous and impulsive” (p. 216) while pills were seen as the opposite of the active method on every scale other than one dimension: “good-bad” (p. 216). Although the methods of
guns and pills were perceived differently, there were no significant gender differences found.

We want to combine the suicide studies above to create an experiment which tests the perceptions of gender, method, and classification. Based on the study of Selby and Calhoun (1975), who found that attempters were perceived as more mentally ill than committers, we predict that the participants will view suicide committers and suicide completers differently. We also predict that active methods will be perceived differently than passive methods. We are basing this off the study of Lester (1987) who found that active methods are perceived as more masculine while passive methods were thought to be more feminine. We will also examine gender perceptions. From the study of Selby and Calhoun (1975) where they found women to be more mentally ill and more intentional than men, we predict women attempters and committers will be perceived differently than male attempters and committers. Lastly, we will examine the interaction between these variables.

**Method**

*Participants*

200 college students were randomly selected from Oklahoma City University to participate in this study. The participants were mostly female ($M = 133$) Caucasians ($M = 136$) around 20 years old ($M = 20.04$, $SD = 3.50$). They were randomly assigned to one of eight conditions. Participants were treated ethically according to APA standards.

*Materials*

Our 2 x 2 x 2 (gender x method x classification) design created eight scenarios (See Appendix A). The variables used to rate the scenarios were: dangerous, effective, similar to me, mental illness, quick, painful, difficult, irreversible, courageous, dramatic, masculine, feminine, messy, and impulsive. Each of these variables was taken from previous studies (Lester, 1987; Selby & Calhoun, 1975; Servais & Saunders, 2007).
Procedure

After reading a scenario, participants rated the suicide attempter or committer on 18 variables using a 7-point Likert scale (e.g. for the variable dramatic 1 = not dramatic and 7 = very dramatic). All participants were treated according to APA standards.

Results

A three-way ANOVA (Method x Gender x Classification) revealed a significant interaction for the variable dramatic $F(1, 199) = 14.122, p = .00, \eta^2 = .069$. The female active attempter was rated the most dramatic while the male passive committer was perceived as the least dramatic ($M = 6.50, SD = .76$ and $M = 5.04, SD = 2.12$, respectively). For the two-way interaction of Method x Gender, both courageous and similar to me were significant ($F(1, 199) = 5.52, p = .020, \eta^2 = .028$ and $F(1, 199) = 4.168, p = .043, \eta^2 = .021$, respectively). In both instances, the female passive received the highest ratings while male passive condition received the lowest, see Table 1. For the two-way interaction of Method x Classification, effective was significant, $F(1, 199) = 5.018, p = .026, \eta^2 = .025$. Here the passive committers were seen as the most effective and the active committers were the least, see Table 1.

Several main effects were also found. Active methods ($M = 3.33, SD = .15$) were significantly more masculine than passive methods ($M = 2.86, SD = .15$; $F(1, 199) = 5.055, p = .026, \eta^2 = .026$) and more painful than passive methods ($M = 6.15, SD = .15$; $M = 5.40, SD = .14$; $F(1, 199) = 13.273, p = .00, \eta^2 = .065$). And finally, for the gender main effect, males were perceived as being significantly more intent than females ($M = 6.37, SD = .12$; $M = 6.02, SD = .12$; $F(1, 199) = 4.462, p = .036, \eta^2 = .023$).

Conclusions

The three-way significance demonstrates that dependent upon the variables of gender, classification and method, suicide is perceived as dramatic. The finding that the female active attempter was perceived to be the most dramatic is similar to previous research. Firstly, Lester (1987) found active methods to be significantly more dramatic than passive weapons. Secondly, though Selby and Calhoun (1975) did not test for the variable dramatic, they did find that females were
perceived to be more mentally ill than males. And they also found that attempters were seen as more mentally ill than committers. So it appears that the combination of these three variables led to the female active attempt being perceived as the most dramatic scenario and conversely, influenced the opposite scenario (male passive attempt) to be perceived as the least dramatic.

The variables similar to me and courageous were significant for the combination of females and passive methods. This is similar to Servais and Saunders (2007) who found the variable similar to me to be significantly different between conditions, and also because findings of Lester (1987) report that passive methods are perceived as more feminine than active methods. The findings regarding courageous were different than those of Lester who found courageous to be significant for active methods. The variable effective was also significant for the variables of passive method and committing. This was also unexpected given that Lester found active methods to be perceived as more effective than passive methods.

Regarding the significance of single variables, active methods were perceived as more masculine and more painful than passive methods which reflects Lester’s (1987) conclusion. Attempters were seen as more impulsive than committers which mirrors the biased towards attempters in Selby and Calhoun (1975). And, overall, committers were perceived as using quicker methods than attempters. This finding was not discovered in previous research. Lastly, males were perceived as more intent to die than females. This finding is different from that of Selby and Calhoun where women were perceived as having higher suicide intentionality. This difference may be a result of the large amount of females in this study, perhaps they viewed intent to die as a more masculine trait.

Our study was limited due to the unequal number of males and females. We were also limited to testing college students although perceptions of suicide could change throughout a person’s lifespan due to more exposure to suicide. Future research should attempt to get a fairly equal sample of men and women as well as investigate perceptions
of other variables, such as age and mental illness. Future researchers may also use wider age range of methods for their study, specifically adding guns for the active method and pills for a passive method. Researchers may also want to ask not only if the participant knows a person who has committed but also how their acquaintance or friend or family member committed.
References


Abstract

The troubadours of Occitania, court composers of 12th century Southern France, created a body of work that included the canso—a vernacular song form, paeans to unrequited passion, which helped to forever entrench the ideals of courtly love in Western civilization. The vast majority of these composers were men, but a small group of women known as trobairitz—female counterparts to the troubadours—left behind their own unique compositions. In the Norton Anthology of Western Music, Volume 1, editors Peter J. Burkholder and Claude V. Palisca argue that the canso repertoire composed by the trobairitz is inherently more genuine in its expressions of romantic love than in the works of the troubadours. This paper will examine and explore this statement and offer possible causes for its truth through an analysis of the Comtessa De Dia’s canso, A chantar, the only trobairitz composition for which both text and notated music are extant.

A chantar: The Audacity of the Trobairitz

It’s an iconic image: the love-sick knight on bended knee, standing below a balcony, eyes cast upward at the beautiful maiden perched high above him in her ivory tower. She is icy, even cruel in her indifference, and he sings in passionate despair of the perfection of his idol and the fruitlessness of his quest. It’s an image that has dominated fairy tales and folklore for centuries, indicative not of some great truth about the relations between men and women, but of a code that became the single most important influence on romantic social behavior in the Western World. Courtly love, or “fine amour,” was the standard rhetorical basis for the “canso” or romantic love song repertoire of the Occitan troubadours, the twelfth-century “poet-composers” catering to the feudal nobility of Southern France.¹ Canso composition could be motivated by

¹ Cory Gavito, class lecture, September 19, 2008.
any desire, running the gamut from true, thwarted ardor for an unattainable beloved to the wish to impress one’s feudal overlord with a flowery and flattering appraisal of his property (read: wife). It would appear that such a form, with its seemingly inherent masculinity, could never be adapted to a feminine idiom—what could a woman composer at the mercy of feudal society stand to gain from creating pleasing, empty words set to a sentimental melody? Yet the compositions of the trobairitz — that all-too-rare female counterpart to the troubadour — manage not only to hold their own in a world of masculine rhetoric, but also to illuminate the hidden corners of a woman’s heart. In the first volume of the Norton Anthology of Western Music, Peter J. Burkholder and Claude V. Palisca’s companion essay to the Comtessa de Dia’s canso, A chantar, comments, “It has been suggested that the poetry of the female troubadours…is more realistic and less artificial than that of their male peers, as if the women were speaking from real life experience rather than of an idealized love circumscribed by conventions.”

This is not to say that male troubadours were incapable of true feeling in their compositions, but rather, with so much more to gain by flattery and wit than the female trobairitz, the sincerity of their poetry is to be taken on a case-by-case basis. A chantar beautifully exemplifies the kind of deeply expressive compositions written by that audacious and passionate female musician, the trobairitz.

Let us examine the cultural phenomenon of fine amour and the woman’s place in it. As scholar Linda M. Patterson remarks,

There is no single set of rules for what the troubadours come to call “fin’amor,” any more than there is a single code of chivalry. Not only did their poetry span over two hundred years…but inventive individuals were constantly interacting with each other in an ongoing debate or dialectic, assimilating but also challenging,

subverting and outdoing each other’s ideas and style.³

Thus, ideas of poetic ethos could span from those of Bernart de Ventadorn, who believed that sincerity was the foremost virtue in courtly literature, to the erotic exultations of the likes of Jaufré Rudel, to a myriad of other composers who wrote merely to impress their masters and gain power or position.⁴ There is one constant in the execution of canso composition, however, and that is the placing of the woman at a rhetorical distance, to be lyrically exulted over or exploited at the composer’s discretion. The trobairitz, therefore, is automatically out of her natural depth in this particular genre:

The canso form cannot be straightforwardly adapted to the female voice. By placing a woman in a position of dominance, the troubadour canso reverses the gender hierarchy obtaining in real life: the speaking male subject chooses to renounce in fiction a superiority of status he enjoys in fact...If a woman adopts a submissive position in poetry, she conforms rather than reverses her real situation. If on the other hand she adopts the role of the courtly domna, then she changes the conventions of the canso whereby the speaker adopts a submissive stance to make a request for love.⁵

That is to say, for the most part, simply by writing in the canso genre, a woman places her speaker, and by extension, herself, at the mercy of her audience — listener, lover or both. Patterson continues, “The Comtessa de Dia adopts the strategy of accepting the role of the domna, but...laments the lack of correlation between a set of values that have public sanction,

⁴ (Ibid.), 32
and her own experience.” Indeed, A chantar presents us with a speaker who is clearly aware of her expected role as a frosty fair lady, but is overcome with the power of her emotions, and when struck by love, can find no refuge or recourse.

Figure 1

The bleak ardor of the piece strikes the listener from the first hearing: the unaccompanied woman’s voice set in a warm middle register undulates gently in a limited but colorful range, the repetitive phrase structure only adding to the impression of a kind of circular, hopeless despair. The speaker laments the unaccountable inconsistency of her lover’s regard for her. He has grown haughty and cool towards her who loves him best, and she is at a loss to understand what she could have done to deserve such ill treatment. The phrases end in

6 (Ibid.), 262-263
7 Burkholder, Peter J. and Palisca, Claude V.; ed, The Norton Anthology of Western Music, Volume 1: Ancient to Baroque, 43
short, neumatic passages as if the speaker were emitting soft, shuddering sighs as she struggles to understand her enigmatic beloved. The piece has an evocative quality that seems to be missing from many of its contemporaries in the troubadour literature. As one listens, a mental image appears of a noblewoman wandering the parapets of some medieval fortress at dusk, seized by longing, with her anguished cry of wonder and dismay reverberating across the landscape. This pained fluency is made all the more powerful by monophony — the lone voice beating against a damning and absolute silence. Absent from the piece are the cleverly phrased compliments and overweening exultations over the inaccessible lover’s perfections; indeed, the speaker of A chantar has little trouble expressing how unhappy she is made by her fickle beloved. She freely admits her bitterness toward him, and even exhorts him to beware the pitfalls of excessive pride. Yet she cannot help but confess his clear superiority to other men. Her mention of his virtues, however, is not meant to flatter or manipulate him but to express the fear that his many excellent attributes, which make him attractive to a vast array of women, may have cost her his affections.

So much for the speaker, but what of the Comtessa herself? Whence this passion for an inaccessible, unknown beloved? Very little is known about her personally, and some confusion surrounds the exact details of her personal relationships. She is known as Beatrix, or Beatriz in her “vida,” or (roughly) contemporary biography, but even her first name cannot be empirically verified. That she was of the nobility is certain, but whether she was a countess by marriage or by birth is unclear. The most striking aspect of her scant biography is her alleged relationship with Raimbaut d’Aurenga, or Rambaud d’Orange, (interestingly, he is

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9 Elizabeth Aubrey: “Dia, Comtessa de”
10 Elizabeth Aubrey: “Dia, Comtessa de”
believed to be a fellow courtly poet) who, according to de Dia’s vida, she was in love with and “‘made about him many good and beautiful songs.’” This same biography asserts that she was married to Guillaume de Poitiers, which begs the question of who, exactly, provided the inspiration for the countess’ verses. A chantar does not in any way seem to indicate that the speaker is a spurned wife. In a day and age in which divorce was unheard of and annulments were only adopted as last resorts to political quandaries, a wife might be sure to regain her husband at some point, when he eventually grew tired of philandering. Nor could the canso have been composed before de Dia’s marriage. Such outspoken passion would have been anathema for an unmarried woman. She could only have written the piece when she was safely married and therefore ostensibly above suspicion. No, de Dia’s speaker is clearly in the throes of romantic insecurity. She feels that she is in imminent danger of losing her adored one forever.

Whoever inspired the piece, it can be safely stated that the events surrounding its conception must have been very real and powerful for the composer. If there is nothing to be gained and much to be lost in this composition, then the sincerity of the sentiments can be little held in question. Granted, within the courtly Occitan society, a composer, even a female one, could get away with writing a particularly ardent canso and still pass it off as a pretty nothing. But because the composer is, in this case, a woman, and hence undertaking an unusual occupation for her sex, she must have a stronger motivation to write than natural lyric ability. Northwestern University professor Tilde Sankovitch elaborates:

Each trobairitz finds her own voice, or rather, her multiple voices, her own ways of dealing with sphere of courtly literature, a sphere revolving


12 Burkholder, Peter J. and Palisca, Claude V.; ed, The Norton Anthology of Western Music, Volume 1: Ancient to Baroque, 45
around man-made notions and rhetorical codes, and she is also situated clearly in a female rather than in a male poetic orbit, tracing a female rather than a male trajectory into and through the unfamiliar, and potentially dangerous, domain of poetic composition. If the trobairitz wants to explore that domain and come out, not only alive but with the trophy of artistic self-expression, she must chart her path carefully.¹³

The trobairitz is engaged in a dangerous game, both socially and artistically, and must be highly dedicated and creative in order to keep her integrity. To a certain extent the double standard imposed by fine amour exists in Western culture even unto the present day: a woman’s passion may rival or even surpass a man’s, but it seems her expression of it must always be somewhat more limited. True, the advent of the sexual revolution of the 1960s has altered our views on how a woman may or may not express herself romantically, and increasing cultural androgyny in the Western world has contributed to blurred lines in the definition of gender roles. And yet, even for the twenty-first century woman, there remain traces of a reticence to declare oneself in love, to make a first move, and a faint but persistent feudal tendency to believe that a woman who does not wait to be wooed or won over by the opposite sex is in some way more aggressive, and perhaps less feminine or desirable, than her more reserved peers. In an age of postmodern cynicism and existential dread, the result of this excessive psychological preemption is that both genders suffer from a certain socially inflicted emotional paralysis. And so the irony of the battle of the sexes rages on — while it remains a battle, no one can win. But if it becomes a dialogue, perhaps Western culture will be able, to some degree, to eradicate centuries-old romantic misconceptions.

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Biochemical and Physiological Alterations Following Traumatic Brain Injury
Jessica R. Casselman

Introduction
Traumatic brain injury is defined as brain damage resulting from mechanical force applied to the head. It is an injury sustained by over two million Americans a year. Not only do these injuries cause death or posttraumatic psychological and physiological disorders, but they also come with an estimated $65 billion-a-year price tag in the United States (1). Traumatic brain injury is the world’s leading cause of disability and mortality in individuals under the age of 45 (2). In this paper, we will explore some of the known chemical and physiological manifestations that can follow traumatic brain injury.

The direct, mechanical damage is classified as primary insult and cannot be treated. Primary insult can cause contusion, laceration, and intracranial hemorrhage. Also, the sudden acceleration/deceleration of many accidents causes brain damage, resulting in diffuse axonal injury. The secondary insult represents consecutive pathological processes initiated at the moment of injury with delayed clinical presentation. Changes in cerebral blood flow (hypo- and hyperperfusion), inadequate cerebral oxygenation, and cerebral metabolic dysfunction all fall into the category of secondary insult (2). These dysfunctions lead to inflammatory responses that can cause greater cell damage.

Because each patient and injury is different, an essential part of treating brain injuries is to have a uniform method of classification such as the Glasgow Coma Scale. The scale’s most important feature is the independent assessment of three types of behavior: eye opening (E), motor response (M) and verbal ability (V). Previous methods were difficult to use because they required the simultaneous occurrence of responses of different types. The individual assessments for E, M, and V are scored (1-5) and then combined to give the overall score. The top score is 15. A score of 14 reflects that a patient is fully alert and oriented. As different abilities are
compromised, scores decrease. A score of three reflects deep coma. The Glasgow Coma Scale greatly simplifies the communication and comparison of data (Figure 1) and was of great importance in evaluating the extent of an injury (3).

**Figure 1**

![Figure 1](image)

**Table 3** Glasgow Coma Scale

<table>
<thead>
<tr>
<th>Eye opening</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spontaneous: periods of eye opening indicating arousal but not necessarily awareness</td>
<td>4</td>
</tr>
<tr>
<td>To speech: spoken or shouted, not necessarily the command to open the eyes</td>
<td>4</td>
</tr>
<tr>
<td>To pain: applied to the limbs rather than to the face, where grimacing can cause closure</td>
<td>4</td>
</tr>
</tbody>
</table>

**Motor responses**

- Obeying commands: exclude grasp reflex or postural adjustment
- Localising: limb moves to more than one site of noxious stimulus (standardised as nailbed pressure with a pencil)
- Flexion: the elbow or knee bends—may be rapid withdrawal or slow ‘abnormal’ flexion with shoulder adduction—either = flexion
- Extension: of elbow usually with adduction and internal rotation of the shoulder and pronation of the wrist
- For assessing conscious level record the best motor response from the best limb.

**Verbal responses**

- Orientation: knows who he is, where he is, why he is there, year, season, month
- Confused conversation: can attend and respond to questions but disorientated replies
- Inappropriate speech: intelligible words limited to random exclamations, often swearing
- Incomprehensible speech: meaning and groaning but no words

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**Cerebral Blood Flow**

Cerebral ischemia following traumatic brain injury is a well-documented phenomenon (4, 5). It has been called the single most-important secondary insult. Ischemia is defined as cerebral blood flow (CBF) <= 18 ml/100g/min (6) where normal cerebral blood flow is 44.1 +/- 5.6 ml/100g/minute (5). Ischemia is associated with poor outcome. Early mortality and lower, regional CBF are directly related (Figure 2) (6). CBF measured 1-5 days post-injury was found to correlate positively with long-term outcome (4).
The heterogeneous nature of cerebral perfusion following injury has been noted. Regional areas of decreased blood flow were found throughout the brain, while some areas had increased blood flow (6). One method used to measure CBF is the stable Xe-CT method. In this procedure, nonradioactive xenon gas is inhaled by patients and the temporal changes in radiographic enhancement produced by the inhalation are measured by sequential computerized tomography (7). The stable Xe-CT method provides higher spatial resolution, more precise correlation of flow and anatomy, and quantitative information on blood flow in deeper regions of the brain. Stable Xe-CT method also lacks many of the problems associated with the $^{133}$Xe method, such as extracerebral
contamination and inability to detect areas of critically low CBF (4), and can easily be added to normal CT scanning. There were some safety concerns regarding the xenon inhalation in critically ill patients. Intracranial pressure could be increased by inhaling xenon, which is much heavier than air. However, breathing the 33% xenon for 4.5 minutes required for the procedure has been shown to not increase intracranial pressure (6).

The hemodynamic phases after traumatic brain injury were mapped (5). The $^{133}$Xe clearance was used to measure CBF (4, 5). In this method, patients were injected intravenously with 20 to 30 mCi of $^{133}$Xe gas dissolved in saline. Five probes were then positioned over each cerebral hemisphere to measure the expired $^{133}$Xe. Analytic computer software was then used to extrapolate the data. It referenced brain clearance curves to the clearance curve of exhaled xenon-133. A modified height-over-area method was then used to calculate CBF. The CBF values for the 10 receptors were then averaged and the mean represented the global CBF for that test. Three distinct phases were found following injury: hypoperfusion, hyperemia, and vasospasm. Phase I, 0-24 hours post injury, a period of decreased CBF, hypoperfusion, (mean corrected CBF about 32 ml/100g/minute) was found. Phase II, 1-3 days, showed hyperemia. The CBF was transiently increased (mean corrected CBF about 47 ml/100g/minute). Phase III, from 4-15 days, was a period of vasospasm, variable but gradually declining CBF (mean corrected CBF about 36 ml/100g/minute), (Figure 3). The few cases tested later showed gradual recovery toward normal CBF. The three phases were well distinguished from one another. There were two other patterns noted in the data. In one scenario, hypoperfusion persisted through all three phases. In another scenario, hyperemia came on early and persisted through Phases II and III. Each of these cases was seen in fewer than 15 percent of the patients (5). The longer duration of reduced CBF, the worse the outcome was found to be (4).
Figure 3: Graphical representation of the hemodynamic phases following traumatic brain injury. [(Figure 1)(5)] (Phase I, hypoperfusion; Phase II, hyperemia; Phase III, vasospasm) Normal cerebral blood flow is about 44 ml/100 grams/minute (5).

One type of injury that is particularly dangerous is diffuse axonal injury. This is caused by sudden acceleration or deceleration, and it results in the shearing of connective axons. These axons are then further aggravated by evolving secondary insult. The swollen, injured axons then disconnect from the axons around them. In rats, an apparent threshold was found three hours after injury, where only further reductions in blood flow would cause more axon disruption. By 24 hours, the majority of terminal axon bulbs around the impact site were disconnected from proximal axon segments. This shearing of axons can cause the brain to swell, which was determined by a study that stained with beta-amyloid precursor protein (β-APP), an antibody known to mark swollen, disconnected axons (8). Swelling causes the brain to
exert force on the inside of the skull, thus restricting blood flow to those regions. If the brain swells enough, global depression CBF can occur. Using the aforementioned stable Xe-CT method, it was found that patients who exhibit diffuse swelling had significantly lower CBF (Figure 4).

Figure 4

Figure 4: Compares cerebral blood flow among different types of injuries in areas of the brain. [(Figure 2)(6)]
It was also reported that all patients with global ischemia died within 48 hours after injury, and patients with regional ischemia had significantly worse short-term outcomes than did patients without ischemia (6).

The cause of depressed blood flow after brain injury is believed to be due to increased cerebrovascular resistance (4, 5, 6). This increase in vascular resistance is possibly caused by a combination of several factors. Microcirculation could simply be compressed due to swelling or edema formation. There could be active muscular constriction of arterioles, which results from the release of calcium and other vasoactive substances following trauma. Also, hemoglobin, which has been shown to be a vasoconstrictor, is released after injury. The intravascular thrombosis formation may also play a role in obstructing the vasculature of the brain (5). Hyperventilation was used to control intracranial pressure (6) and to induce oxidative metabolism. The increased oxygen concentration worked to constrict dilated arterioles because oxygen is a vasoconstrictor (6, 9). This somewhat decreased intracranial pressure. However, net cerebrovascular resistance was found to be greatly increased. The increase in vascular resistance is believed to cause a reduction in CBF (6). Therefore, hyperoxia is also not recommended because of the deleterious side effects of oxygen. One-hundred percent oxygen tension is toxic to cells (9), and increased oxygen is now believed to cause increase resistance of cerebral microcirculation. Mannitol administration, which lowers blood viscosity, was suggested instead because it decreases intracranial pressure and promotes CBF (6).

Another serious consequence of brain injury acknowledged in several studies is the inhibition of cerebral protein synthesis (4, 8, 10, 17). One study found that the CBF threshold for protein synthesis is significantly higher than the threshold for the loss of metabolism. If depressed but nonischemic blood flow is present with sufficient duration, large-scale cell death may result from prolonged inhibition of protein synthesis. To obtain this data, blood flow was measured by double-tracer autoradiography. $^{14}$C leucine to measure protein synthesis and $^{131}$I iodoantipyrine to measure blood flow were administered with 30 minutes between
injections, respectively. Autoradiographs were formed for iodine-133, and two months later (after complete decay of iodine-133), autoradiographs were generated for carbon-14. This method made the determination that a breakdown of amino acid transport had occurred. It was suggested that amount of cell damage is determined by the suppression of protein synthesis instead of metabolic energy failure (17).

**Cerebral Metabolic Dysfunction**

Cerebral glucose metabolism is closely intertwined with cerebral blood flow. Oxygen must be present in order for glucose to be fully reduced by oxidative phosphorylation. When cerebral blood flow is reduced, there is a subsequent reduction in oxygen concentration. Cells can proceed through glycolysis, but without sufficient oxygen supply, the pyruvate is then converted to lactate by lactate dehydrogenase to yield 2 ATP. Because the energy yield of anaerobic respiration is much lower than that of aerobic, the cell must enter a state of hyperglycolysis to meet energy requirements.

As would be expected, following fluid percussion injury, there was an increase in lactate concentration in the same regions of the brain that showed hyperglycolysis (11). Lactate is produced in a normal brain during times of intense cerebral stimulation; therefore, the sole presence of lactate is not a reliable indicator of hypoxic conditions. However, the pyruvate/lactate ratio can indicate that anaerobic respiration is occurring. This ratio is indicative of the ratio between the cytosolic reduced form of NAD (H): oxidized form of NAD by the activity of lactate dehydrogenase and is a reliable indicator of the energy state of the cell. It should be noted that cerebral lactate levels decrease when the fraction of O\textsubscript{2} is increased to 100 percent. The raised oxygen concentration caused a significant decrease in lactate concentration. There was also a significant decrease of pyruvate concentration. The simultaneous decreases of lactate and pyruvate did not affect the pyruvate/lactate ratio. A decrease in O\textsubscript{2} utilization was also found. However, with the reduced concentration of metabolic products, glucose concentration was slightly raised (9). The decreased utilization of oxygen may indicate mitochondrial dysfunction (12), which would lead to the long-term depression of glucose utilization that other studies have
found (11). Whether the depressed oxygen utilization is due to diminished metabolic requirements of the neurons or impaired mitochondrial function remains to be established. It does demonstrate that hyperoxia does not improve mitochondrial function. This was found using a microdialysis study in patients with severe head injuries (9). The microdialysis technique works by slowly pumping a solution through a probe into tissue. The molecules diffuse into the solution, and then the solution is slowly collected and analyzed to determine identities and concentrations of molecules (18). This technique allowed monitoring of the pyruvate/lactate ratio in cerebral tissue.

In a study using rats, evidence of a hypermetabolic state and subsequent hypometabolic energy state were found in local cerebral glucose utilization. Brain injury was induced in rats by fluid-percussion method. Cerebral glucose metabolic rates were then measured using \([^{14}\text{C}]\) 2-deoxy-D-glucose. All rats underwent craniotomy. Fluid-percussion method is administered through a screw attached to a reservoir of saline. Pressure is applied through the saline and into the screw, which is in direct contact with the exposed dura of the brain. A pressure of about four atmospheres was administered. Fluid-percussion method allows for greater control of the instrument of injury. A control group underwent craniotomy without injury. The rats’ skulls and scalps repaired, their brains were excised at different times and analyzed by autoradiography. The autoradiographs were analyzed by computer to quantify the results (11). The phases of metabolism occurred on a shorter time scale than the phases of perfusion seen in CBF studies. Hypermetabolism was observed for at least the first 30 minutes following injury. All regions of the cerebral cortex ipsilateral to the injury showed increased glucose utilization immediately after injury (11, 13). At six hours after injury, ipsilateral cerebral cortex began to show metabolic depression. This depression was found to affect all areas of the ipsilateral cortex. Metabolism in these areas returned to control values ten days after injury. Rates of glucose metabolism in the cerebral cortex contralateral to the injury were effected but not to the same degree as the ipsilateral cortex. Immediately after injury contralateral
cortex showed slight increase of glucose utilization; however, these areas had returned to control levels by 30 minutes after injury. The contralateral cortex exhibited metabolism depression at six hours after injury. By 24 hours post-injury, all regions of contralateral cortex returned and stayed at control levels. It is believed that the slight decrease in metabolic rates of the control group was due to effects of anesthesia (Figure 5) (11).
Figure 5: Shows hyper- and hypometabolism immediately after injury in rats. These results were mimicked in the 3 other regions that were examined. Normal rate of cerebral glucose.
Local cerebral glucose utilization was found to be reduced even up to three months after ischemia in rats, which reflects the extended time period required to recover from metabolic depression (10). Glucose transporter activity was found to be relatively unaffected by brain injury; however, hexokinase activity is sensitive to TBI (Figure 6).

Figure 6

Figure 6: $K_1$ was designated value for rate of $^{18}$F-FDG transport, $k_3$ measured rate of phosphorylation activity, and $K_i$ measured rate of glucose uptake. CBF is rate of cerebral blood flow.
Lower image shows discrepancy between these rates in areas with tissue damage [TD(+)] and without tissue damage [TD(-)]. (Figure 4)(13) Hexokinase activity was depressed even in apparently uninjured areas, where glucose transporter activity was impaired only in pericontusional areas (Figure 7).

Figure 7

![Glucose transport and Hexokinase diagram]

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Mean ± SD for:</th>
<th>ROIs in patients with TBI</th>
<th>Healthy volunteers (normal cortex)</th>
<th>Difference (P) for remote vs. normal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Contusion PC4.5 PC13.5 PC22.5 Remote</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$K_1$ (mL/min)</td>
<td>0.027 ± 0.021</td>
<td>0.064 ± 0.025 0.073 ± 0.025 0.078 ± 0.027</td>
<td>0.095 ± 0.031 0.103 ± 0.014</td>
<td>NS</td>
</tr>
<tr>
<td>$k_3$ (/min)</td>
<td>0.039 ± 0.018</td>
<td>0.069 ± 0.034 0.065 ± 0.035 0.060 ± 0.035</td>
<td>0.061 ± 0.018 0.175 ± 0.041</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>$K_i$ (mL/min)</td>
<td>0.006 ± 0.004</td>
<td>0.017 ± 0.008 0.019 ± 0.009 0.019 ± 0.009</td>
<td>0.023 ± 0.009 0.045 ± 0.007</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>CBF (mL/g/min)</td>
<td>0.11 ± 0.08</td>
<td>0.31 ± 0.12  0.35 ± 0.11 0.38 ± 0.12</td>
<td>0.46 ± 0.13 0.49 ± 0.08</td>
<td>NS</td>
</tr>
</tbody>
</table>

NS = not significant.
Figure 7: Kinetic parameters of $^{18}$F-FDG and CBF. (Table 2)(13) $K_1$ was designated value for rate of $^{18}$F-FDG transport, $k_3$ measured rate of phosphorylation activity, and $K_i$ measured rate of glucose uptake.
At about three days after injury, patients underwent $\text{H}_2\text{O}^{15}$ PET studies to measure cerebral blood flow and $^{18}\text{F}$-FDG PET studies to generate images used in determining areas of impaired glucose utilization. Because $^{18}\text{F}$-FDG ($^{18}\text{F}$-fluorodeoxyglucose) is a glucose analog, it can be assumed to have characteristics similar to glucose. Measuring the rate of accumulation of $^{18}\text{F}$-FDG in the brain tissue allows a model of $^{18}\text{F}$-FDG transport and phosphorylation rates to be formed. The images generated from $\text{H}_2\text{O}^{15}$ PET and $^{18}\text{F}$-FDG were overlaid with CT and MR images. The combination of images was rotated to produce a 3-D image. Areas of anatomical tissue damage and impaired glucose metabolism were determined to be regions of interest. The regions of interest were found to be located on either side of the contusion at 4.5mm, 13.5mm and 22.5mm, and another region located on remote portions of the cortex. Once these regions of interest were isolated, they could be analyzed according to $^{18}\text{F}$-FDG transport and phosphorylation. Thus, the determination of glucose transporter activity and hexokinase activity, respectively, were quantified. $^{18}\text{F}$-FDG transport was affected only in areas with tissue damage. In remote cortex, transporter activity showed little difference between injured patients and healthy volunteers. $^{18}\text{F}$-FDG uptake was found to increase as distance from the contusion increased. These findings indicate that glucose transport and uptake are affected in areas of tissue damage but are functioning in non-injured cortex. However, hexokinase activity was globally decreased. Glucose was phosphorylated immediately upon entry to the cell. After phosphorylation, however, it was effectively trapped in the cell. Hexokinase is allosterically inhibited by its product; therefore, the reduced activity may reflect an accumulation of glucose 6-phosphate. This might reflect the overall reduction of glucose metabolism and subsequent cerebral functions. Reduced cerebral activity is possibly the result of traumatic impact itself or use of medications (13).

Following trauma, there are indications of perturbation of the mitochondrial membrane, as well as impaired mitochondrial function. Because anaerobic respiration is much less efficient than aerobic respiration, cells can enter a state of energy failure. The active transporters that maintain
the balance between calcium and potassium cease to fire. Intracellular calcium accumulations are toxic to cells (Figure 8) (12). This ionic imbalance is a well-documented phenomenon (4, 5, 8, 11, 12, 13, 14). Tissue fractionation was used to isolate cerebral mitochondria from 16 severely brain-injured patients. After obtaining the mitochondria, they were able to measure the efficiency and function of the mitochondria. Mitochondrial efficiency is measured by P/O ratio, which can be determined by dividing the amount of ADP that is phosphorylated by the amount of oxygen consumed. High P/O ratios indicate normal efficiency.

**Figure 8**

![Figure 8: Schematic representation of cascade of alterations observed after traumatic brain injury. ([Figure 1](12))](image)

Calcium uptake is a sensitive indicator of mitochondrial function. When the cell is in a state of energy failure, intracellular calcium cannot be regulated normally, which results in cell death.
P/O ratios were markedly decreased and had much greater variability in injured brains. This indicates that ATP production was impaired. They also found that mitochondrial calcium uptake was depressed after trauma. In a portion of the patients, function improved at least 20 percent when calcium was drawn out of the mitochondrial membrane. This shows that mitochondrial function is negatively related to excess intracellular calcium, which could possibly be relieved with pharmacological treatment (12). Detecting anaerobic conditions in the cell is very important, because this metabolism can lead to further ion disturbances, which could potentially lead to irreversible neuronal damage.

Reinstating the ionic balance is vitally important. It is believed that the spike in glucose utilization seen immediately after fluid-percussion injury is the result of increased energy demands of the cell needed to activate the ligand-gated channels in an effort to correct ionic imbalance. However, the long-term depression of glucose metabolism is possibly due to prolonged ion perturbation in the mitochondrial matrix (11). When the ion balance is interrupted, long periods of time are needed for its repair. This is especially true when the cell must also accommodate for the low energy yield of anaerobic respiration brought on by low cerebral blood flow.

Ion fluxes of Ca\(^{2+}\), Na\(^{+}\), and K\(^{+}\) are believed to cause pervasive waves of depolarization in the acutely injured human brain. This was reached by measuring the electrocorticographic activity using six platinum electrodes placed near foci of damaged cortical tissue. This cortical depolarization leads to massive ion leakage over cell membranes. Repeated episodes of depolarization were found in traumatized tissue. This suggests that blood flow and subsequent energy state was sufficient to re-establish the ion gradient. Waves of depolarization have been shown to radiate from the injury, requiring a recovery time of low electrocorticographical activity to regenerate the transmembrane ion gradient. The recovery times after these depolarizations ranged from 2.5 minutes to 86 minutes, which leaves the cell to constantly balance the ion fluxes (Figure 9). The difference in recovery times between episodes indicates
the capacity of the tissue to regenerate the transmembrane ion gradient.

Figure 9

A few series of depolarizations showed repeated intervals of 8-12 minutes. The data regarding interval and recovery times was highly variable; however, it was conclusive that spreading depolarization followed by low electrocorticographical activity occurred after brain injury. This study hypothesizes that the depolarization events contribute to tissue damage after
injury by placing the cells in a prolonged state of energy crisis (14).

There are enormous energy demands placed on the cells after injury. Glycolysis is an inefficient pathway compared to oxidative phosphorylation. Nonetheless, the cell is forced into hyperglycolysis because of the need to reestablish ionic balance and to maintain cellular function. Substantial blood flow is needed to meet metabolic demands.

As shown above, however, CBF is severely decreased immediately after injury and chronically depressed through day 10 (5). This leads to an uncoupling between CBF and local, glucose metabolism (4, 5, 8, 12). Autoradiograms showed a diffuse reduction in local CBF in many areas of the brain (Figure 10).

Figure 10

![Autoradiographs of parametric maps from sham-control (left column) and injured rats 3 hours after trauma (right column) that compare local cerebral blood flow (LCGF) and local cerebral glucose metabolism (LCMRglc). ([Figure 2](#))](#)
In the contusion core and contusion, CBF was decreased by 71 percent where glucose utilization was elevated in the contusional margin about 31 percent above control values. In this study, a group of rats were processed three hours after injury to find local glucose utilization, local CBF, which was accomplished by using radiolabeled $^{18}$F-FDG and $^{14}$C to generate digital images, and for beta-amyloid precursor protein ($\beta$-APP) immunohistochemistry. Another group was injured and examined for $\beta$-APP immunohistochemistry at 24 hours after injury. The glucose utilization to CBF ratio increased 1.5 to three fold throughout most of the ipsilateral hemisphere (Figure 11).

**Figure 11**

![Bar graph demonstrating ipsilateral LCMRglc/LCBF ratio values in sham-control (open bars) and injured groups (closed bars) in gray and white matter (shaded area) brain regions. Values were significantly elevated within all regions in the injured group except the contusion core and internal capsule.](image)

Figure 11: Demonstrates vast increase of glucose utilization / blood flow ratio is many regions of the brain. [(Figure 4)(8)]
The idea that mismatched energy supply is a major factor in progressive axonal injury was supported, because β-APP profile assessment at 24 hours after injury showed significantly larger numbers of disconnected axons (8).

Reinstating the ion balance places the cell under substantial energy demand. This is a difficult task, especially when there is a decreased abundance of hexokinase and other glycolytic enzymes (1). The decreased hexokinase activity is evidenced in several studies (10, 11, 13, 15). However, this study indicates that the concentration of hexokinase is lower in injured cortex than in uninjured (Figure 12).

**Figure 12**

Figure 12: Western blot validation of proteins decreased after traumatic brain injury.

Using rat brains, they induced brain injury and performed protein separation by cation/anion exchange chromatography-
PAGE. The proteins were then trypsinized and analyzed using Western Blot technique. Differential gel band intensities were quantified using computer software. They found that an increase in protein abundance after injury was either up-regulated or accumulated because of the injury. Lactate dehydrogenate concentration increased after trauma. This supports other findings that lactate is produced in response to brain injury. Along with glyceraldehydes 3-phosphate, aldolase, enolase and pyruvate kinase, hexokinase was found in decreased abundance (Figure 13).

**Figure 13**

![Differential gel band intensities](image)

Figure 13: Differential gel band intensities were quantified using densitometry software. [(Figure 4)(1)]

It has been questioned whether the aforementioned Glasgow Coma Scale (GCS) is a reliable indicator of cerebral metabolism. Because the scale is somewhat subjective, is influenced by medications, the validity of its measure with respect to cerebral metabolism was examined. A PET investigation using $^{18}$F-FDG showed a significant association of glucose metabolism in the thalamus, brain stem, and cerebellum with the GCS assessment given at the time of the
PET scanning. Thus, the observations from this study lend support that GCS can be used as a reliable index of level of consciousness. Values of regional glucose utilization were plotted against posttraumatic level of consciousness, which was measured by the GCS. The study also showed that initial GCS reflects severity of injury and is useful in predicting outcome. This investigation also found results that increase the data surrounding the heterogeneous nature of cerebral glucose utilization after injury. It suggests that tissue damage may cause a disconnection, which leads to a separation of regional cerebral glucose metabolism between the cerebral cortex and deeper brain regions. This disconnect presumably occurs because of diffuse axonal injury. They also observed an overall depression of glucose metabolism. Regional glucose depression was only seen in the striatum and the thalamus. The glucose utilization levels of the brain stem of injured patients were similar to those of healthy volunteers. However, when regional glucose utilization values were plotted against posttraumatic level of consciousness, the brain stem demonstrated the strongest correlation with posttraumatic level of consciousness (Figure 14).
Figure 14: Correlation between GCS given initially and brain stem glucose utilization (A) and correlation between GCS given at time of PET scan and brain stem glucose utilization (B). [(Figure 1)(15)]

GCS=Glasgow Coma Scale

It was also found that there was significant difference in the glucose metabolism of thalamus, brain stem, and cerebellum between comatose and noncomatose patients, which reflects the importance of proper glucose metabolism (Figure 15). Therefore, the Glasgow Coma Scale is a useful tool in predicting outcome of patients (15).
**Figure 15**
**TABLE 3** Comparison of Metabolic Rate of Glucose Between Comatose and Noncomatose Patients

<table>
<thead>
<tr>
<th>Region</th>
<th>Comatose ($n = 13$)</th>
<th>Noncomatose ($n = 10$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole brain</td>
<td>2.9 ± 0.7</td>
<td>3.4 ± 0.9</td>
</tr>
<tr>
<td>Remote cortex</td>
<td>3.5 ± 0.9</td>
<td>4.1 ± 1.0</td>
</tr>
<tr>
<td>Striatum</td>
<td>3.5 ± 1.2</td>
<td>4.4 ± 1.2</td>
</tr>
<tr>
<td>Thalamus</td>
<td>2.7 ± 0.7</td>
<td>3.6 ± 1.2*</td>
</tr>
<tr>
<td>Cerebellar cortex</td>
<td>2.6 ± 0.5</td>
<td>3.4 ± 1.0*</td>
</tr>
<tr>
<td>Brain stem (whole)</td>
<td>2.2 ± 0.4</td>
<td>2.8 ± 0.5</td>
</tr>
<tr>
<td>Midbrain</td>
<td>2.3 ± 0.4</td>
<td>2.9 ± 0.6</td>
</tr>
<tr>
<td>Pons</td>
<td>2.2 ± 0.4</td>
<td>2.8 ± 0.6</td>
</tr>
<tr>
<td>Medulla</td>
<td>2.3 ± 0.5</td>
<td>2.8 ± 0.4*</td>
</tr>
</tbody>
</table>

Data are expressed as mean ± SD (mg/100 g/min).

---

**Figure 15**: Comparison of metabolic rate of glucose between comatose and noncomatose patients

**Inflammatory Response**

Finally, there is evidence of inflammatory response in an injured cortex. Activated macrophages/microglia accumulations have been detected in lesion sites of post-traumatic rat brains. Activated macrophages/microglia have been reported to remove inhibitory tissue debris and secrete...
growth promoting factors to promote regeneration. However, uncontrolled activation of macrophages/microglia can cause damage to central nervous system tissue. Injury was induced in rats using weight-drop contusion. The rats were killed at 6, 12, 18, 24, 48, 72, and 96 hours after trauma. Their brains were removed, and sections were stained with antibodies. The sections were then examined by light microscopy. Cells with appropriate tag were counted. The results showed slight accumulation of CD8\(^+\) cells in lesion areas from 12 hours post-injury. Expression of CD8 antigen was considered to be specific for certain lymphocytes, cytotoxic T cells and natural killer cells. It has also been on alveolar macrophages. A strong accumulation was 24 hours after injury. The accumulation of CD8\(^+\) increased progressively. The maximum was seen at 96 hours postinjury, which was the last sampling point (Figure 16).

**Figure 16**

![Graphical representation of accumulation of ED1-labeled (C) and EMAPII-labeled (D) cells in the lesion after traumatic brain injury in rats. HPF, high-power fields, sections used to count labeled cells.](Figure 2)(16)
The CD8\textsuperscript{+} cells were found only at lesion sites, not in remote areas of ipsilateral and contralateral hemispheres. Most of the CD8\textsuperscript{+} cells exhibited amoeboid, macrophage phenotypes. Nearly all CD8\textsuperscript{+} cells also expressed ED1 and EMAPII, antibodies that mark reactive macrophages/microglia. The majority of the activated CD8\textsuperscript{+} phagocytes were distributed around the border of the contusion, which suggests that they might play a role in early lesion formation (16).

**Conclusion**

It is hypothesized that the severe reduction in CBF seen after traumatic brain injury leads to a hypometabolic rate of cerebral glucose. The subsequent state of energy failure brings many undesirable consequences. Without full glucose metabolism, active transporters in the cell membrane fail, which causes depolarization and ion imbalance (14). In order to correct this imbalance, the cell is placed under high energy demand. This is believed to cause an uncoupling between blood flow and metabolism in the brain, which indicates that the metabolic rate is inappropriate for the level of blood flow. The stress of uncoupling puts the already injured axons at greater risk to disconnect from the axons around them (8). All this occurs in the first few hours after injury. The first CD8\textsuperscript{+} cells were detected 12 hours after injury. This accumulation was found to increase over the next several days (16). At 24 hours post-injury, a decrease in mitochondrial function was detected. The respiration rate and calcium uptake were markedly impaired (12). There was also a decreased utilization of oxygen (9, 12). At this time the cell has entered a state of hyperemia (5). The cell’s effort to right the ion imbalance and rectify the state of energy failure is believed to cause this increase in blood flow. It seems, however, damage to the glucose metabolic pathway already existed, because glucose utilization was shown to be significantly depressed weeks and months after injury (10). At 48 hours after trauma, a decreased concentration of hexokinase was found (1), which would lead to the decreased hexokinase activity (12). There was also a decrease in other glycolitic proteins and an increase in breakdown products (1). Seventy-two hours after injury, the cell enters a prolonged state of vasospasm. The blood
flow is lower than normal but is believed to slowly return to control levels. Vasculature could be compressed long-term by edema formation, constricted due to release of vasoactive substances like calcium, and hemoglobin. It could be narrowed by thrombi formation (5). At 96 hours after injury, the maximum accumulation of CD8$^+$ cells was found. It should be noted that this was the last sampling point at which it was measured; therefore, the accumulation could continue to increase (16). The CBF and glucose metabolism continue to be depressed weeks and months after injury (5, 10, 11).

Several modes of treatment have been suggested from the various wings of experimentation regarding traumatic brain injury. The hypoperfusion could perhaps be treated with pharmacological agents to reduce the microcirculatory resistance. Balloon angioplasty could possibly be a resort for particularly severe cases (5). Administration of mannitol could be a treatment option, because it reduces blood viscosity, which lowers intracranial pressure and promotes blood flow (6). Depression of glucose metabolism could possibly be treated via administration of antagonists of the excitatory amino acids and the excitatory neurotransmitters released after trauma, which could possibly prevent the sudden hypermetabolism observed after injury and thus relieve some metabolic shock (10). A hypothesized pharmacological blockade of depolarization events could be beneficial in maintaining ion balance (14). CD8$^+$ macrophages could be targets of immunotherapeutic and anti-inflammatory agents (16).

These proposed treatments should be the subject of further investigation. The alterations following traumatic brain injury are very complex and interrelated. This makes treatment impossible for one aspect of injury.
References


“Seven Messages to Seven Churches: One Message to the Church of Today”
Rebekah A. Potter

Introduction
The Book of Revelation -- the last book in the Christian Bible -- causes a whole spectrum of reactions among its readers. Some are intrigued by its symbolism. There seems to be a pile of mysterious pieces to a puzzle to which no one has a key. Others read it for a play-by-play of the end of the world. Many, if not most, people are afraid to even attempt to read its pages. The name of the book “implies an unveiling of hidden truths,” but the text is so unclear and undefined that it often raises more questions than it answers.¹

The Book of Revelation belongs to a genre of literature that has come to be known as “apocalyptic.” The basic function of this type of literature is to address current situations on earth from the perspective of a superhuman world in a time to come. The purpose is to alter the audience’s understanding and change their behaviors by claiming authority from this other mysterious world.² It should also be noted that apocalyptic literature is generally written by and for people being oppressed, whether politically or religiously.³ This paper will propose that the warnings and promises given to the seven churches in Revelation 2-3 are applicable to the church of today.⁴ This application is possible due to the nature of apocalyptic literature.

³ Dr. Betsworth, Rough Draft review, 11-11-08.
⁴ The ‘church’ is being defined in the previous statement as the whole, collective body of people who profess to be saved by the grace of God through Jesus Christ.
Social and Political Context

As with any other Biblical text, the Book of Revelation needs to be viewed in those contexts within which it was written and originally read.\(^5\) Looking inside the Book of Revelation for clues to its authorship provides the author’s name: John. The statements found in 1:1-9 fail to further identify the author, making it appear as if the author was personally familiar with those to whom he was writing.\(^6\) John states that he was on “Patmos because of the word of God and the testimony of Jesus” (Rev 1:9, NRSV). The separation of the “word of God” from the “testimony of Jesus” expresses the difference between the established Hebrew Bible and the new teaching of Jesus Christ. The Torah was already accepted as the Word of God, but the new Gospel message about Jesus being the Christ was still controversial. It would seem likely then that John was a Jewish Christian. It is suspected that John was a prophet of the early church in the area of Asia.\(^7\) But John’s exact identity may never be discovered.

John was on the island of Patmos when he received the vision written in these pages. It is most likely that John was exiled to Patmos for preaching the “testimony of Jesus” (1:9). The island of Patmos was likely one of the three Sporades Islands used by Rome for the purpose of exiling prisoners. This island can be found just off the coast of Asia Minor.\(^8\) Early church history holds that John was exiled during the 14\(^{th}\) year of the reign of Emperor Domitian, or 95 C.E. Domitian is one of the emperor’s most noted for persecuting Christians.\(^9\) The fact that John was exiled on Patmos due to the statements


\(^7\) Spivey, 425.


\(^9\) Carroll, 179.
found in chapters 2 and 3 of Revelation, this book was likely written near the end of the first century. The message to each church clearly contains evidence of “resistance and hope in times of hardship and persecution.”

The seven churches named in 1:11 were real cities in Asia Minor inhabited, in part, by Christian congregations. John’s messages “contain challenges, exhortations, and warnings for the churches caught up in the social and political forces of that time and place.” These Christians had concerns and expectations that had to be addressed. Many of these Christians were being persecuted through “discrimination and harassment” by some Jewish Christians and by their Roman neighbors. Judaism was recognized by the Roman government as a legitimate religion, but Christianity did not enjoy this tolerance. There is a serious lack of evidence to support previous scholarly contentions of government-sanctioned persecution. Rather the Roman government generally supported religious tolerance so long as the worshippers included the Roman gods and goddesses. Participation in the empirical cults — worship of the emperor as divine — was strongly promoted as a sign of political loyalty. It was the apparent “political disloyalty” that caused Christians to be persecuted by other Roman citizens.

Considering the first of the 10 Commandments given to the Israelites in the Hebrew Bible, the “Christians were, by

10 Spivey, 425.
12 Wainwright, 125.
15 Blount, 403.
16 Schüssler Fiorenza, 54.
17 Blount, 404.
definition, religiously intolerant.”\(^\text{18}\) Worship of the gods and goddesses of the Roman religion was not acceptable to the Christians and this included the worship of the reigning emperor. Jewish Christians also began to lose their previously enjoyed “political privileges and identity as Jews.”\(^\text{19}\) The Christian church was beginning to separate from the Jewish synagogue. Any Jew expelled from the local synagogue for professing faith in Jesus Christ lost the protection afforded Judaism under Roman law.\(^\text{20}\) The “Christian movement” could then be considered a response to oppression both from Judaism and from Rome.\(^\text{21}\)

**Literary Genre**

The genre of literature to which the Book of Revelation belongs has been the subject of discussion over the centuries. It seems to present a set of “mixed signals,” so far as the purpose and intent of the writing are concerned.\(^\text{22}\) The book’s genre generally had been labeled a prophecy until about the 17\(^{\text{th}}\) century. Some scholars began to view the book as a drama and attempted to adapt it for stage performance. This started with plays in the church as a means of ministry. These plays became too dramatized for church use and moved to mainstream stages. Some tried to portray the play as a tragedy or even a comedy. Revelation was considered a drama but soon was deemed not suitable for stage performance.\(^\text{23}\)

About the mid 19\(^{\text{th}}\) century, Friedrich Lücke (1791-1854) coined the term “apocalyptic” as a literary genre of its own.\(^\text{24}\) Lücke then defined apocalyptic literature as a culmination “of objective and subjective elements.”\(^\text{25}\) Apocalyptic literature then involved a catalyst that was beyond the control of those affected by it. The writing revealed the potential response to

\(^{18}\) Blount, 403.
\(^{19}\) Schüssler Fiorenza, 54.
\(^{20}\) Schüssler Fiorenza, 55.
\(^{21}\) Spivey, 424.
\(^{22}\) Michaels, 21.
\(^{23}\) Wainwright, 143.
\(^{24}\) Wainwright, 144.
\(^{25}\) Wainwright, 145.
the catalyst. In the Book of Revelation, the objective element would be the manifestation of God’s activity in the world. The people’s response to this manifestation would be the subjective element.26

Spivey and Smith identified four basic features of apocalyptic literature: a revelation, a mediator of that revelation, a prophet to receive the revelation and a foretelling of events within the revelation.27 Unlike a prophecy which declares a specific, future event, an apocalypse reveals God through numerous events over an unidentified amount of time to someone who is responsible for spreading the revelation. This genre is not limited to the Book of Revelation, but rather it encompasses numerous texts of both Jewish and Christian origin.28

Apocalyptic literature is known for its use of numerology. Three numbers are of particular importance for a clearer understanding of the Book of Revelation. The number ‘7’ in apocalyptic and Biblical literature is the most important number of symbolism. It reflects the seven days of creation in Genesis and symbolizes completeness or totality; seven represents all of a thing.29 Seven messages to seven churches written in one book to be circulated through all the congregations is evidence that these messages were intended for all the believers. The first three messages end with the promise to the conqueror. The number ‘3’ is the minimum number of occurrences needed to create a pattern. It places significance and a “sense of expectation” on the item – in this case the message to each church.30 The last four letters end with the exhortation to listen to what the Spirit is saying. The number ‘4’ denotes supremacy and includes any “aspects not specifically mentioned.”31 No church or any person is being

26 Wainwright, 145.
27 Spivey, 423.
28 Michaels, 23.
left out in the messages presented to the churches. “As prophetic messages, they address the whole church in Asia Minor.”

The Book of Revelation is an apocalypse presenting words of exhortation and admonition put in the format of a letter that is to be circulated through the churches of Asia Minor. John and the late 1st century Christian readers would have understood this language to promote resistance against their political and social situation.

Context

John identifies the reason for this writing as the sharing of a revelation of God that he has received (1:1). The mood of urgency is set for the reader or hearer immediately following the opening of the letter in 1:3. This vision or revelation begins in 1:9 and ends in 22:7. As presented here it is one continuous vision that will be sent to all seven churches named in 1:11 to be read or heard by the people of the congregations.

John states in 1:10 that this vision comes to him “on the Lord’s day.” It is conceivable that John may have entered into a time of worship on Patmos when he knew other Christians would also be worshipping God. The tone of reverence or “holy awe” is then implied within the text. The day on which the vision is presented to John may also lend validation to the prophecy and visions just as the churches to which Paul wrote experienced prophecy, speaking in tongues and visions as normal or expected occurrences during their worship services.

John describes Christ in 1:12-16 – a description which is full of symbolism and which will be repeated in the openings of the four messages in chapter 2. Christ first speaks in 1:17. John is told not to be afraid and then Christ identifies Himself. John is commanded again to write and the symbols of the seven stars and seven lampstands in 1:12, 16 are explained.

32 Schüssler Fiorenza, 53.
33 Blount, 399.
34 Sharon Betsworth, conversation on topic, October 16, 2008.
“The seven stars are the angels to the seven churches, and the seven lampstands are the seven churches” (1:20). The churches are symbolized by lampstands. Jesus’ followers in the New Testament were likened to lights in a dark world whose responsibility it was to share that light or let it shine before men. The lampstand symbolizes the “divine presence” of Christ with each church. The messages are presented one after another without a break or comment between them. Following these seven messages, the vision continues with Christ inviting John to see what will take place (4:1). The vision presented throughout the Book of Revelation is one single revelation.

Each of the seven messages begins with a greeting, “to the angel of the church in…” (2:1, 8, 12, 18, 3:1, 7, 14). The word “angel” here is defined as a messenger or, by implication, a pastor. This word generally denotes creatures of a higher order than humans sent from God to humanity. Jewish tradition held that each nation had an angel to represent it in heaven; this idea could have easily been transferred to each community of Christian believers. It is important to note that throughout Scripture the angels are “living beings” who “provided guidance, help and encouragement to God’s people,” but who also were used to pour out God’s judgment on all humanity, as in Revelation 8-9 and 15. Whether the angel to whom the letter is addressed is the earthly pastor or a guardian angel, the understanding of the messages will not be greatly impacted.

The Text—Revelation 2-3

Ephesus

Ephesus is the first of the seven churches to receive a message (2:1-7). Of all the cities in Asia Minor, Ephesus was

35 “Lamp, Lampstand” Dictionary of Biblical Imagery, 486
37 Yarbro Collins, 15.
39 Efird, 53.
the greatest. It was home to the Roman proconsul and a “center of the empirical cult.”\textsuperscript{40} The description of Christ in 2:1 is the one “who holds the seven stars in his right hand, who walks among the seven golden lampstands.” This description repeats 1:12, 16. The vision has already established that the stars are the messengers and the lampstands are the churches to which the messengers are being sent. Holding the stars in the right hand reveals that Christ is always watching and ready to send a messenger as the need arises. Walking among the lampstands reflects Christ’s presence with the churches.

Christ tells Ephesus that He knows their “works, toil and patient endurance” that are further detailed in 2:2-3. The problem in the congregation at Ephesus is they have forgotten the love out of which these works should spring. They are told to remember why they do these works, and remember what Christ did for them.\textsuperscript{41} The self-righteousness that plagued this church was endangering it.\textsuperscript{42} The cosmic judge has warned of a broken relationship symbolized by the removal of their lampstand unless they repent.\textsuperscript{43} Each message presents the same admonition at its closing (2:7, 11, 17, 29, 3:6, 13, 22). It is of great significance and will be discussed later. Each letter also includes a promise to those who conquer or overcome. The use of the term ‘conquer’ places the Roman courts of law in direct opposition to the heavenly courts of judgment. A person found guilty of not worshipping or being loyal to the emperor in the Roman courts earned the acquittal of their soul from sin in the courts of eternity.\textsuperscript{44} In Ephesus the promise to the conqueror is to “eat from the tree of life that is in the paradise of God” (2:7). Eternal life in heaven with God—salvation—is for those who do their works out of love for Christ who first loved them.

\textit{Smyrna}

\textsuperscript{40} Schüessler Fiorenza, 54.
\textsuperscript{41} Schüessler Fiorenza, 53.
\textsuperscript{42} Efird, 53.
\textsuperscript{43} Yarbro Collins, 15.
\textsuperscript{44} Yarbro Collins, 14.
Smyrna receives the second message (2:8-11). The city of Smyrna bragged of its temple built in honor of the Roman emperor.\textsuperscript{45} The influence of the empirical cult was obviously very strong here. The description of Christ given to this city is “the first and the last, who was dead and came to life” (2:8) drawing upon 1:17-18. Members of this church were literally faced with the possibility of death for their faith. It has been recorded that some Jewish citizens aided the Roman authorities “in convicting and executing some Christians” hence the phrase “a synagogue of Satan” (2:9).\textsuperscript{46} Christ affirms their faith by saying the persecution will only last for a set period of time.\textsuperscript{47} This church is not told to repent but is encouraged to hang on and be faithful to the end. It is promised eternal life untouched by the second death which is eternal separation from God.

\textit{Pergamum}

The third message is sent to Pergamum (2:12-17). “Pergamum, a citadel of Hellenistic civilization in Asia, claimed to be the official center of the empirical cult.”\textsuperscript{48} Here, Christ is described as the one “who has the sharp two-edged sword” (2:12). This image immediately conjures up a threatening presence. This congregation has allowed some false teachings to be practiced and is struggling to settle on the authentic teaching for Christian living.\textsuperscript{49} They are warned to repent or Christ will wage war against them. Those who conquer are promised manna and a white stone on which is written a new name. Manna was the bread provided to Israel by God as the people journeyed to the Promised Land (Ex. 16:15, 31). The white stone may be a reference to the New Jerusalem found later in Revelation or be used in opposition to the dark stone for which Pergamum was known.\textsuperscript{50} The new

\textsuperscript{45} Schüssler Fiorenza, 54. \\
\textsuperscript{46} Yarbro Collins, 17. \\
\textsuperscript{47} Efird, 55. \\
\textsuperscript{48} Schüssler Fiorenza, 54. \\
\textsuperscript{49} Yarbro Collins, 18-19. \\
name symbolizes the new person found in Christ through salvation.

*Thyatira*

Thyatira receives the fourth of the messages to the churches (2:18-28). In this city the emperor was considered divine as both the reincarnation of Apollo and a direct descendent of Zeus.\(^5^1\) Such worship of the emperor put the emperor’s worshippers in direct conflict with those who worshipped Jesus Christ as the Son of God. The description of Christ for this church is “the Son of God, who has eyes like a flame of fire, and whose feet are like burnished bronze” (2:18). Christ is presented as the “transcendent overseer and judge.”\(^5^2\) Their works are briefly mentioned in 2:19 before Christ turns to what is wrong in this congregation. There are too many following the false teachings of Jezebel, and they are falling into idolatry.\(^5^3\) Those found guilty of this idolatry are told to repent but all the others were encouraged only to hold on until Christ returns. Those who overcome will be given authority to rule as God gave Christ authority to rule; they will be given the morning star.

*Sardis*

The fifth message is to the church in the city of Sardis (3:1-6). The description of Christ in 3:1 is the one “who has the seven spirits of God and the seven stars.” The seven spirits refers to 1:4 and symbolize the throne of God. With this description of Christ, John suggests that Christ now has the throne and is in charge of the angels watching over the churches.\(^5^4\) Sardis itself possesses a deceitful reputation of doing good.\(^5^5\) As in the letter to Ephesus, the church in Sardis is called to remember what they have received and then to repent. Should they fail, Christ threatens to come like a thief, sudden and unexpected, to take those who have remained faithful.\(^5^6\) Those who overcome are promised robes of white,

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\(^5^1\) Schüssler Fiorenza, 54.
\(^5^2\) Yarbro Collins, 22.
\(^5^3\) Yarbro Collins, 20.
\(^5^4\) Yarbro Collins, 23-24.
\(^5^5\) Rowland, 583.
\(^5^6\) Yarbro Collins, 24-25.
their name in the book of life, and to be confessed by Jesus before the Father and angels. These images again point to eternal life in heaven through the salvation offered by Jesus Christ.

Philadelphia

Philadelphia receives the sixth message (3:7-13). The church in Philadelphia, like the one in Smyrna, is undergoing severe persecution even to the point that some are being put to death. The description of Christ is “the holy one, the true one, who has the key of David, who opens and no one will shut, who shuts and no one opens” (3:7). John is declaring that no one other than Christ can lead humanity to God, quoting from Isaiah 22:22.57 We again have the phrase the “synagogue of Satan” (3:9) revealing the conflict between Jews receiving privileges under Roman law and Christians who may be seen as a threat to those privileges. The church in Philadelphia is told they will be saved from the trial coming on the whole world. Those who conquer will take up permanent residence in the temple of God and have on them written the name of God. Writing is a central theme throughout the book of Revelation and is symbolic of authority and of God’s “divine judgment.”58

Laodicea

The seventh and final message to the churches is to the church at Laodicea (3:14-22). It “is the most negative” of all the letters.59 Laodicea was famous for being the wealthiest city in the region and “a center of the empirical cult.”60 The Christians in Laodicea were most likely rich and of high social standing, and thus did not receive much social persecution from their pagan counterparts.61 In the description of Christ as “the Amen, the faithful and true witness, the origin of God’s creation” (3:14), John reveals that Christ has the final say; any judgment pronounced by Christ will not be questioned or reconsidered. There is no appeals process. The wealth and

57 Yarbro Collins, 27.
58 Rowland, 585.
59 Rowland, 586.
60 Schüssler Fiorenza, 54.
61 Yarbro Collins, 30.
riches of this world are put in a heavenly perspective for this congregation. The church is reminded of God’s love for them in the call to repent and the simplicity of gaining Christ’s forgiveness by opening the door of their hearts. Those who conquer are promised a seat on the throne of Christ as Christ was seated on the throne of God following the resurrection.

One Message to the Church of Today

As previously mentioned, every message contains the following admonition in its closing: “Let anyone who has an ear listen to what the Spirit is saying to the churches” (2:7, 11, 17, 29, 3:6, 13, 22). The word translated ear can refer to the physical organ of the body but is often used as a metaphor for the ability to perceive, understand and know that which is being said. When used in conjunction with the word for listen, the implication becomes perceiving, understanding and knowing with conviction so as to result in obedience. The messages of warning and admonition were to be heard, understood and obeyed with action on the part of the hearers.

These messages are addressed to anyone capable of perceiving, understanding and knowing this revelation of God. Those who have heard are then responsible to obey, and they must act upon this new understanding. The purpose of the Book of Revelation, as a whole, is to provide assurance of God’s grace and power. The purpose of the messages from Christ to the churches is to provide correction and encouragement. They give hope to a people living in uncertainty.

These seven individual messages were written to seven particular cities in a known area of the world. They encourage the people to be faithful despite their current earthly issues because help and deliverance is on the way from a supernatural world. The Christians in each community

63 Yarbro Collins, 14.
65 Spivey, 430.
received encouragement to remain faithful in their present circumstances because they were constantly being watched by the Judge who sees all. By implication, the significance of life and death is placed on every-day events.\textsuperscript{66} The simple daily choices each person makes can seem so small and trivial. The realization is that every little thing adds to a great, big picture only visible from the supernatural world. The earth and humanity still exist as in the first century. The only thing that has changed is the circumstances. The message of hope that God is still in control is as relevant to the church now as it was then.

While the messages provide a window into the world of Christianity in Asia Minor toward the end of the 1st century, they provide today’s reader of Revelation with just as strong an exhortation and admonition to hear and know the Word of the Lord. To be sure, this hearing and knowing require actions of obedience from the people of God.

The messages in Revelation point out “the strengths and weaknesses of the communities.”\textsuperscript{67} “The strength of the Christian community in Asia Minor consists: in mutual love, in service to others, in fidelity and steadfastness, in the keeping of God’s word and the rejecting of false teachers, in the confession of its faith even during persecution, and in consistent resistance.”\textsuperscript{68} Its weakness, varying among the individual communities, consisted of the very same things. It took all of the churches working together as a whole, sharing their strengths and weaknesses, to present a picture of what the church should really look like to the world in which it lives.

The promises made to those who conquered their circumstances and held to their faith and hope in Jesus Christ pointed to eternal life – a new kind of life at some time in the future. These promises included “the same victory that was demonstrated in and through the life, death, and resurrection of the church’s Lord.”\textsuperscript{69} The conqueror will enjoy the “royal

\textsuperscript{66} Yarbro Collins, 13.
\textsuperscript{67} Schüessler Fiorenza, 53.
\textsuperscript{68} Schüessler Fiorenza, 53.
\textsuperscript{69} Efird, 63.
power of God and Jesus Christ." These promises are valid for today’s church who rises above the circumstances and spreads the Gospel message. The message of hope is that—at the right time, a time known only to God—God will declare the rightful victory and vindicate those who have been faithful.

The God revealed in the pages of this Book has not changed. The messages of hope and encouragement presented here are just as necessary today in the lives of Christians around the world as they were at the end of the first century. “Thus Revelation gives testimony to faith in the lordship of God over history.”

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70 Schüessler Fiorenza, 57.
71 Spivey, 435.
Bibliography


Cognitive Ability and Small Business Success
Sara Treadwell

Abstract
This paper explores how IQ as proxied by Armed Services Vocational Aptitude Battery (ASVAB) is related to entrepreneurial success. Using the National Longitudinal Survey of Youth 1997, I find a negative, statistically significant effect of IQ on financial success in personal business, in some specifications. I also find a positive, statistically significant effect of probability classes on total income from small business. In addition, perhaps surprisingly, I find that substance use is also positively and significantly related to small business income.

Introduction
In 2003, there were 10.3 million self-employed workers in the United States -- making up 7.5 percent of the work force (Hippie, 2004). Small businesses are thought to be vital to the American economy, so why don’t self-employed workers constitute a larger percentage of the workforce? One reason could be that self employment is perceived as the business choice for risk takers (Van Praag and Cramer, 1999). However, the number of small firms tends to rise more in economic slowdowns¹ (Bee, 2008). This could be because people lose faith in the world of wage work and believe they have a greater chance of being financially successful on their own accord.

Small businesses reputations are plagued by rumors of high failure rates. However, there are many discrepancies that make establishing it difficult to establish accurate failure rates. Changing owners, incorporating the business, or deciding to sell are all tabulated as failures. The Small Business Association estimates that one third of businesses will generate a positive income in the first year, one third will break even, and one third will close. George Birch’s model of

¹ For a greater explanation of this see “The Disciples of David Birch.”
business success rates is often cited by business experts. He
gives estimates of success rates from the first to the tenth year
listed below:

<table>
<thead>
<tr>
<th>Year</th>
<th>Success Rates</th>
</tr>
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<tbody>
<tr>
<td>First Year</td>
<td>85% success</td>
</tr>
<tr>
<td>Second Year</td>
<td>70% success</td>
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<tr>
<td>Third Year</td>
<td>62% success</td>
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<tr>
<td>Fourth Year</td>
<td>55% success</td>
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<td>Fifth Year</td>
<td>50% success</td>
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<td>Sixth Year</td>
<td>47% success</td>
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<td>Seventh Year</td>
<td>44% success</td>
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<td>Eighth Year</td>
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<td>38% success</td>
</tr>
<tr>
<td>Tenth Year</td>
<td>35% success</td>
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George Birch states that 85 percent of small businesses
will survive their first year, 70 percent will remain open in
their second year, and in 10 years the number drops to 35
percent of the original businesses opened.

I explore the determinants of individual success in
business, using data from the National Longitudinal Survey of
Youth 1997 (NLSY97) to estimate the relationship between
IQ and business success. To account for the inconsistencies
with counted small business failure, I use total income of
individuals who own their own business instead of closing
rates. This way, I eliminate those businesses registering at a
loss or that simply break-even. I am limited, however, in my
research because negative numbers cannot be logged, though
few observations report negative income. IQ, the main
explanatory variable, which is supported by an Armed
Services Vocational Aptitude Test score, is used to measure
the cognitive ability of business owners. Success is then
measured by the outcome variable of total income.
I find that IQ has a negative, statistically significant effect on total income. This result is in conflict with that of de Wit and van Winden (1990). In a simple model, a 0.5 point increase in ASVAB actually decreases total income by 1 percent. One reason for this could be that people with higher IQ scores simply choose not to put in the long hours and frustration that accompany owning and operating a small business. Another explanation could be that some people with lower IQ scores do not weigh the risks accurately and simply get lucky.

**Literature Review**

Recent authors have contributed to the discussion of why people enter into self-employment. There has also been great discussion concerning what makes a person successful in operating a small business. Such suggestions have been, but are not limited to: risk preference, motivation, IQ, and entrepreneurship ability. While previous studies tend to focus on education and its role in successful small businesses, I have chosen to narrow the focus to the owner’s IQ.

Van Praag and Cramer (2001) find that education level is a strong positive indicator for success in both the wage environment and also the entrepreneur environment, even after intelligence is controlled for. They go on to state that having a science-oriented educational background has a strong positive influence on entrepreneurial talent. Risk preference is also cited as a reason people start their own business. They discuss the importance of risk taking and entrepreneurial ability, as well as potential profit compared to traditional wages. They site these factors as reasons why people chose to become entrepreneurs and if they are successful.

De Wit and Van Winden (1990) find that IQ has a positive effect on earnings once started in entrepreneurial activities. They conclude that a family background in entrepreneurship, especially when the father had experience with self employment, leads to greater probability that one will enter into the field.

\[\text{See Table 1 for a break down of the models.}\]
Sternberg (2004) breaks intelligence down into three parts that make up successful intelligence – analytical, creative, and practical. He discusses successful intelligence as the ability to thrive in life. He references Brazilian entrepreneurs with no formal education surviving in life or death situations where living to see the next year is solely dependent on your entrepreneurship success. Sternberg goes on to suggest that people who aspire to certain careers – carpenters, athletes, actors – may find school unnecessary. He implies that people with an entrepreneurial goal may not try as hard in school because it is a distraction from what really matters to them.

The Data

The National Longitudinal Survey of Youth is a nationally representative sample of youths born between 1980 and 1984. This cohort encompasses 8,984 individuals including an over-sampling of Latino and black respondents. All the respondents were interviewed yearly for ten rounds. In the first round they were given the computer adaptive form of the Armed Services Vocational Aptitude Battery (CAT-ASVAB), which measures cognitive ability. ASVAB is a proxy for IQ. I only use respondents who had a positive income from operating their own small business. My controls variables included: region, education level at the time the ASVAB was administered, the classes respondents might have taken, family composition, and delinquency. Note the delinquency data is taken from 1997, while income is not taken until 2000. Detailed explanations of controls are in Tables 2a and 2b.

The sample is limited because they include only 483 observations of respondents that have positive self employed business income. The limited number of observations is due to the number of people choosing wage work over self employment.

3 Herrenstein and Murray also use the ASVAB as a proxy for intelligence.
The Model

I use various specifications of Ordinary Least Squares (OLS) to estimate the effect of IQ on total income of small businesses. The dependent variable is log of total business income. I added a group of control variables each time I ran the regressions to create all five models. My final equation is:

\[
\text{Log(Total Income)} = \beta_0 + \beta_1 \text{ASVAB} + \beta_2 \text{S} + \beta_3 \text{M} + \beta_4 \text{D} + \beta_5 \text{C} + \beta_6 \text{R} + \mu
\]

Total income is the total amount of profit earned by a self-employed respondent; ASVAB is the score each respondent received on the computer adaptive form of the Armed Services Vocational Aptitude Battery (CAT-ASVAB); S is a vector for my demographic controls; M is a vector for the math subjects each respondent might have taken; D is a vector for delinquency controls; C is a vector for family composition; R is a vector for the different regions; \(\mu\) is the error term; and \(\beta_i\) are the parameters to be estimated. The summary statistics and the formal variable definitions for the controls for S, M, and D can be found in Table 2a, and the summary statistics and the formal variable definitions for the controls C and R can be found in Table 2b.

By adding the control groups in separately, it allowed me to run F tests and see which groups are together statistically significant. Table 1 (next page) shows the models.
Table 1 Cognitive Ability and Self-Employed Success

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
<th>Model 5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-</td>
<td>0.00626*</td>
<td>0.00508</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>ASVAB</td>
<td>0.00382</td>
<td>*</td>
<td>*</td>
<td>0.00514</td>
<td>0.00489</td>
</tr>
<tr>
<td></td>
<td>(0.0027)</td>
<td>(0.00311)</td>
<td>(0.0030)</td>
<td>(0.0032)</td>
<td>(0.0032)</td>
</tr>
</tbody>
</table>

Controls:
Demographics | X | X | X | X | X |
Math Classes   | X | X | X | X | |
Delinquency    |   | X | X | X | |
Household Composition | X | X | |
Region         |   | X | |

F-tests  | - | 1.72 | 5.87*** | 1.93* | 2.97** |
Number of Observations  | 483 | 483 | 483 | 483 | 483 |
Adj. R-squared | 0.1401 | 0.1466 | 0.1639 | 0.1737 | 0.1842 |

Notes: Standard errors are in parentheses. *, **, *** indicate statistical significance at the 10, 5 and 1 percent levels, respectively.

In the first model, I controlled for age, race, gender, and whether or not the respondent had graduated from high school. Previous research indicates females and minorities are less likely to become entrepreneurs, and they have been shown to have a negative effect on the financial success of self-employed small businesses (race – Herrenstein and Murray, 1994, women – Van Praag and Cramer, 2001).
Education is an indicator for economic success (Evans and Leighton, 1989). I control for different math subjects respondents might have taken to separate IQ from education. Van Praag and Cramer (2001) state that the type of education, mainly science oriented, had a positive effect on entrepreneurial talent. I find probability as having the positive effect and not math as a whole.\footnote{Mathematical findings of this are available upon request.} My hypothesis stated that education would have no effect on self-employment success. However, the results show the negative effect ASVAB scores have on the log of total income in several specifications. A possible explanation for this would be to say that one needs basic probability skills in order to run a business. This is consistent with the idea of successful risk taking as a characteristic of entrepreneurship.

In the third model, I controlled for substance use in 1997, and if respondents had ever been arrested. This decreased the statistical significance of ASVAB, but the F tests showed that these were highly significant. These controls are a measure of the level of substance use, where substances include cigarettes, alcohol, and the like for the individual and have a statistical and positive effect on one’s entrepreneurial success. A reason for this success might be that the substances helped these individuals become more social and outgoing. Perhaps the individuals were better able to negotiate a deal over drinks or a cigar.

In the fourth and fifth models, I continued to control for different demographics. The statistical significance of ASVAB disappeared as I continued, but I felt there would have been too much left in my error term to not continue as I did.

**Conclusion**

This paper examines the relationship between entrepreneurial success and cognitive ability. I find that, in some specifications, IQ is negatively correlated with small business success. In no specification was the coefficient on IQ positive. This suggests that, at best, IQ is a neutral factor in determining small business success.
Previous literature suggests that females and minorities are less successful in entrepreneurial endeavors. My model is consistent with the results on gender but not on race. Race factors were not statistically significant in this model.

In specifications of the models that included measures of a mathematical background, there is evidence that probability classes are positively related to small business success. Math skills as a whole did not have an effect on entrepreneurial success.

An interesting note is the positive relationship between early substance use and entrepreneurial success. When going from not using any substances to moderate or heavy usage, the prospective income increased significantly.

This research is important because continuing operations of a business is a vital part of many economies in the United States. Further research could examine the effects that experience and specific areas of education have on the success or failure of small business start-ups.
References


Jack Cole and Jerome Robbins: Crossover Artists
Leia Eubanks

Jack Cole and Jerome Robbins both had roles in concert dance and commercial theater/film, yet they served these roles in reverse of each other. Cole, training and performing in modern dance with *Denishawn*, left the concert style to first study ethnic dances and then to choreograph for nightclubs and movie musicals. Robbins, a leading Broadway choreographer, later returned to his love of classical dance by choreographing for the New York City Ballet. Through their crossover situations, these influential choreographers demonstrate to dancers and choreographers the importance of incorporating a variety of styles and cultural aspects into one’s training and research.

Jack Cole, born in New Brunswick, New Jersey, in the spring of 1911, developed his stage name after growing up as John Ewing Richter. Training first in the Cecchetti method, he later trained in modern dance with Ruth St. Denis and Ted Shawn. He became a member of their company, *Denishawn*, and made his performing debut in the summer of 1930 at the Lewisohn Stadium (an outdoor facility located on the campus of City College of New York).

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1 Internet Movie Database. “Jack Cole.” <www.imdb.com> 5 April 2009
2 The Dance Heritage Coalition. “America’s Irreplaceable Dance Treasures: the First 100.” <www.danceheritage.org> 5 April 2009
4 The Dance Heritage Coalition. “America’s Irreplaceable Dance Treasures: the First 100.” <www.danceheritage.org> 5 April 2009
In the 1930s, Cole left Denishawn to learn from Doris Humphrey and Charles Weidman, and trained in the Middle Eastern dance style of Bharata Natyam with La Meri and Uday Shankar. Implementing the unique techniques learned from this foreign form of dance, Cole developed a unique style which incorporated “isolations, placements, quick directional changes, and long-knee slides.” Standing out from the crowd in a positive way, Cole made his Broadway performing debut with Humphrey and Weidman in School for Husbands in 1933.

Cole in his youth was a frequent part of the Harlem nightclub scene, and began choreographing for clubs at this time in his life. It is here that one sees the crossover into popular commercialism beginning to take place. With only photographs and letters from admirers remaining to document his work, it is evident that Cole was gaining popularity in this non-“concert dance” scene by doing something differently than the other choreographers of his time.

From here, Cole went on to choreograph and stage many Broadway shows like Man of La Mancha, for which he received a Tony Award as Best Choreographer in 1966. But it was in Hollywood that he made his mark in the entertainment industry. Following the trail of musicals from stage to film, Cole danced in and choreographed many films in the 1940s and 50s – notably Gentlemen Prefer Blondes, The Merry Widow, Meet Me After the Show, and Moon Over Miami. Famous for his work with Marilyn Monroe and Rita Hayworth, his seductive style has heavily influenced many of the biggest names in entertainment such as Bob Fosse, Gwen Verdon, Gower Champion, Jerome Robbins, Michael Bennett, Tommy Tune, and Peter Gennaro.

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6 The Dance Heritage Coalition. “America’s Irreplaceable Dance Treasures: the First 100.” <www.danceheritage.org> 5 April 2009


Ballet master dancer and choreographer of the 1930’s, Jerome Robbins, enjoyed the height of his Broadway career in the late 1940s, 50s and 60s, providing choreography and direction for an enormous variety of shows, such as *On The Town*, *Bells Are Ringing*, *High Button Shoes*, *Call Me Madam*, *The King and I, Look Ma, I’m Dancing!*, *The Pajama Game*, *Peter Pan*, *Gypsy*, *Fiddler on the Roof*, *Wonderful Town*, *West Side Story*, *Funny Girl* and *A Funny Thing Happened on the Way to the Forum*. With the goal to “simply keep working,” Robbins achieved status in the entertainment industry by teaching classes and—much like his contemporary Cholly Atkins¹⁰—by observing the work of others.

Once a co-director with mentor George Abbott, Robbins remained selective in the shows he decided to work on, theorizing that to do good work on a show, one must have confidence in the material provided and have it mean something to the soul before attributing an outward expression to it. As Lawrence Thelen writes in his book *The Show Makers: Great Directors of the American Musical Theatre*, there is “a distinct split between [Robbins’] earlier music comedies... and his later, more serious works...”¹¹

Robbins intensified his rehearsal techniques with performers as his career progressed, and he became a part of the writing process and the final editor of the shows on which he worked. In later years, Robbins began to refuse work in musical theatre, saying “Show me a show I want to do. Show me a show that’s about something, that has got some gut feeling about it. I think a lot of those shows [nowadays] get along on their glamour.”

After a hiatus, a crossover occurred for Robbins in which he returned to his first love: ballet. Devoting himself to George Balanchine’s New York City Ballet, he choreographed a number of works on the dancers—even excerpting musical theatre dances and setting them on the ballet company’s

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dancers in *West Side Story Suite*. Robbins complained that writers in 1970s and 80s musical theatre had replaced dancing with narration, “thus eliminating the need for choreography to help further the story.”\(^\text{12}\) Interestingly enough, Robbins later claimed to have taken on Balanchine’s philosophy of creating plotless ballets, although he certainly created multi-dimensional characters and atmospheres if not plots in his choreography for the ballet.

Robbins’ ballets—such as *Fancy Free* and *Dances at a Gathering*—embodied the personalities and themes of a distinctly American culture. Along with choreographers like Agnes de Mille and George Balanchine, Robbins has achieved notoriety for his work as American ambassador to the foreign art of ballet and having helped establish a foundation for American ballet to exist at all.\(^\text{13}\)

Robbins continued his work more than two decades following the death of Jack Cole. Cole left a legacy for jazz dancers and choreographers after dying in February of 1974 while still in Hollywood.\(^\text{14}\) In July of 1998, Robbins passed away of a stroke after making his final curtain call at the New York City Ballet’s spring gala that May.\(^\text{15}\) Both of these artists changed the shape and direction of art and entertainment in their own ways. Cole introduced foreign culture to American commercial entertainment, and Robbins introduced American culture to the foreign art form of ballet. With each shift, art and entertainment changed for the better—leading to the conclusion that with experience and training in a variety of cultural expressions, artists can positively impact the destiny of their craft.


\(^{13}\) Teachout, Terry. “‘Made in the U.S.A.’ Genius.” (Article Handout)

\(^{14}\) Internet Movie Database. “Jack Cole.” <www.imdb.com> 5 April 2009

Bibliography


Internet Movie Database. “Jack Cole.” <www.imdb.com> 5 April 2009


Rogers, Stacey. Class lectures: *Dance History II*. Oklahoma City University, Ann Lacy School of American Dance and Arts Management, Spring 2009.

Teachout, Terry. “A ‘Made in the U.S.A. Genius.” (Article Handout)

The Dance Heritage Coalition. “America’s Irreplaceable Dance Treasures: the First 100.” <www.danceheritage.org> 5 April 2009


The Price of Hubris: General Douglas MacArthur and Korea
Christopher E. Morrow

The Korean War is an often overlooked conflict fought as a proxy war between the United States and the emerging People’s Republic of China. Historians, soldiers, statesmen, and generals differ wildly on the conflict’s substance, policy, and strategy. In the midst of all the controversy was one man: General of the Army Douglas MacArthur, upon whose shoulders rested the responsibility of first repelling the North Korean attack, then prosecuting the war north of the 38th parallel as directed by the United Nations. The decisions that MacArthur made have been examined in great depth since he was relieved of command some 56 years ago. It is not the decisions MacArthur made that I examine in this paper. Instead, I will examine MacArthur himself and the context in which he made those decisions. Essentially, what environment made it possible to underestimate the grave threat that the Chinese armies posed? My hypothesis is that a combination of little external control, personal arrogance, and the fact that MacArthur believed in total war with absolute victory created an environment where MacArthur and his war machine were ill equipped to make sound tactical decisions.

As one of few post-World War II five-star generals, General of the Army MacArthur had few external checks on his power or on his decision making until he was finally removed from Korea by President Harry S. Truman in 1951. His chain of command was unusually short. He answered only nominally to the Joint Chiefs of Staff and to the President himself – a stark contrast to the modern Army, where even theater commanders such as General David Petraeus (Operation Enduring Freedom) must answer to the President, the Secretary of Defense, the Joint Chiefs of Staff, and then finally, the commander of whatever region he operates within. MacArthur proved throughout his career that he was able to supplant or influence those officers appointed above him, especially during the Korean War. As told by New York Times reporter James Reston, MacArthur had an “old habit of doing
things in his own way, without too much concern about waiting for orders from Washington.”1 Additionally, the Joint Chiefs of Staff strongly disapproved of MacArthur’s initial plan to invade Inchon in September of 1950. As Edward Rowny, a MacArthur staffer, detailed in his memoirs: “Meanwhile, the general faced a more formidable obstacle than us (his planning staff): The Joint Chiefs of Staff were opposed to the plan…when the Chiefs objected [to the plan], he admonished them in Napoleon’s dictum: ‘Never take the counsel of your peers.’ Enthralled and cowed, the Chiefs agreed to his plan.”2 Ultimately it would be MacArthur’s blatant disregard for the authority of President Truman that would get him removed from all his positions in the Pacific and sent home.

In the early 1950s, MacArthur was a formidable man in the Far East. Not merely the grand architect of Korean War strategy, MacArthur was also the highest ranked American in Japan—the person with the most influence. Historian John Gunther said, “In blunt fact, MacArthur’s authority is so great and his power so sweeping that he is the actual ruler of Japan. The manner of rule is often indirect, and a semitransparent façade is carefully maintained…but MacArthur is in fact the all powerful boss of some 83 million Japanese.”3 Among other titles, MacArthur was the Commander in Chief, Far East; Supreme Commander of Allied Forces, Pacific; Army Chief of Staff; Field Marshall of the Philippine Republic; Commandant of the U.S. Military Academy at Westpoint; and Commander in Chief of the Southwest Pacific. He personally wrote articles of the Japanese constitution and considered the rebuilding of Japan his personal success story. MacArthur’s power in the Far East was unquestionable, so much so that when Truman called a personal meeting between himself and MacArthur on Wake Island in 1950. A writer for Time observed: “Truman and MacArthur seemed, at the moment, like the sovereign

rulers of separate states, approaching a neutral field with panoplied retainers to make talk and watch each other’s eyes.”

Thus, MacArthur felt that since he was the most experienced American in the Pacific, he should be free to run affairs as he saw fit; a continuation of his expansive power within Japan.

In addition, there was tremendous popular support for MacArthur at home. After Truman dismissed MacArthur in 1951, the following question was asked of voting age Americans: “In the disagreements between President Truman and General MacArthur about how to carry on the war in Korea, who do you think was most nearly right?” Fifty-six percent of Americans said MacArthur. The Saturday Evening Post concluded thus: “People who agree with MacArthur—along with people who are weary of the long drawn out farce in Korea, and others who think they still smell an overall sellout in Asia as the finale to Korea—may join us in regretting that MacArthur didn’t have his way.” MacArthur’s return to the United States was filled with ticker-tape parades, speaking engagements. The nation hung onto every word of MacArthur’s famous speech to Congress which ended “old soldiers never die, they simply fade away.” We can see that the lack of control may not just have been because MacArthur was a stubborn leader who rarely took “no” for an answer, but also because second-guessing the so-called Shogun of Japan was an unpopular political position.

Blatant disregard for orders runs in the MacArthur family. The MacArthurs were not only known for gallantry on the field of battle, they also were known for not listening to those appointed over them. General Arthur MacArthur Jr., Douglas MacArthur’s father, was awarded the Congressional Medal of Honor during a fierce battle in the American Civil War. His career would twist and turn, but his last post would be as military governor of the Philippines. In 1901, General Arthur

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5 Belknap, George and Angus Campbell. “Political Party Identification and Attitudes Toward Foreign Policy” *The Public Opinion Quarterly* 15, no. 4 (Winter 1951-1952): 608
MacArthur Jr., was removed from service by President William Taft for insubordination. In 1908, young Lieutenant Douglas MacArthur was reprimanded twice for insubordination. Ironic are the similarities between father and son! This would set the standard for ignoring, feigning ignorance, or flatly disregarding the orders of those above him leading up to and during the Korean War. In *American Caesar*, William Manchester writes, “Reluctant to offend him [MacArthur], and thereby risk accusations of playing politics while men who were dying, virtually all Truman’s advisors, including the Joint Chiefs, including even the President himself, would prove timid and ambiguous in many key directives to him.”

Manchester goes on to say, “By now they should have learned that if [MacArthur] was free to construe unclear orders, he would choose constructions which suited him, not them.”

Douglas MacArthur was arrogant, which may have played into his inability to see the consequences of action northward. Let us properly set the stage. Before the Inchon landing on September 15, 1950, South Korea had been almost completely overrun by the North. On June 25, the Armies of North Korea launched a surprise offensive into the South. Their campaign progressed quickly, and despite American ground troops entering the battle on July 5, by early September, the Allies controlled only the city of Taegu and the small port of Pusan and the surrounding area. The Allies were encircled, subject to fierce combat, and in serious danger of being pushed into the sea. Contemporary analysts were envisioning an embarrassing Dunkirk-like evacuation to Japan. MacArthur’s guidance to his commander on the ground: “You can make all the reconnaissance you want. You can put your engineers to work if you desire in preparing intermediate trenches, but I will give you the order to retire and there will be no Dunkirk in this command.”

Despite this seemingly dire situation, MacArthur

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8 Ibid.
acted as the confident, almost arrogant commander. He wrote to President Truman on July 20: “With the deployment in Korea of major elements of the Eighth Army now accomplished, the first phase of the campaign has ended and with it the chance for victory by the North Korean forces.”

MacArthur concludes this early statement by saying, “We are now in Korea in force, and with God’s help, we are there to stay until the constitutional authority of the Republic of Korea is fully restored.”

MacArthur decided that Inchon would be the site of an amphibious invasion that would cut the North Korean Armies in half. Inchon is just below the 38th parallel, not far from where North Korean soldiers began their campaign southward. The Allied forces succeeded spectacularly, overcoming massive 31-foot tides and enemy opposition while sustaining only 222 casualties. The immediate effect of the Inchon invasion was twofold: It took the pressure off southern Allied units as North Korean forces were diverted to Inchon, and it shifted momentum in favor of the Allies. Finally, United Nations Forces had seized the initiative and were on the offensive. General MacArthur was, once again, the hero of the hour. He had saved the Allied effort in Korea and the North Korean armies crumbled before him. For MacArthur, complete victory was on the horizon, and he neglected to see, whether by ignorance or hubris, the significant Chinese forces on the north side of the Yalu River.

After his amphibious victory, MacArthur wished to maintain his momentum and drive spectacularly into North Korea in order to affect a “politically advantageous peace.” Washington wanted to give diplomacy a chance, so the Joint Chiefs of Staff instructed MacArthur to wait at the 38th parallel until the United Nations authorized a campaign to the north. MacArthur worried, however, that unless he pressured the North Koreans by expanding immediately into their territory, they would not sue for peace. In fact, MacArthur stated that “the inertia of our diplomacy was failing utterly to

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11 Ibid.
utilize the victory [at Inchon] as a basis for a swift and
dynamic political action to restore peace and unity in
Korea.” MacArthur was impatient and had already lost sight
of his original goal, which was to drive the aggressing North
back above the 38th parallel. The war that MacArthur was
waging and the conflict envisioned by the Joint Chiefs and the
President were two different things, as is evidenced by
MacArthur’s impatience to drive across the 38th parallel.
According to Manchester, “The war they [the Joint Chiefs and
the President] foresaw would resemble the wars of Fredrick
the Great in that it would be a struggle for limited objectives.
But MacArthur assumed that his purpose was to defeat the
enemy.” Indeed the General himself wrote in his memoirs:
“The American tradition has always been that once our troops
are committed to battle, the full power and means of the nation
would be mobilized for victory—not for stalemate or
compromise. And I set out to chart the strategic course which
would make that victory possible.”

Perhaps this is really one of the key reasons that Korea
turned into disaster for the Allied forces. In theater, there was
a general who was seasoned in two of the greatest wars
humanity had ever seen, whose concept of conflict is total,
complete, capitulatory war. This kind of war MacArthur knew
well – armies against armies, division against division,
400,000 men committed per side for one decisive battle. That
kind of war did not allow the enemy sanctuary, nor did it shy
from using atomic weapons, if necessary to gain tactical
advantage. To MacArthur, fighting toward this objective of
complete overarching victory, the 38th parallel would simply
be a line on a map, and the potential Chinese threat would be
another challenge to overcome. The administration, however,
had a “police action” in mind – an action that did not evolve
into a world conflagration. Seven thousand miles away, it was
an action rather than a war, an action with the initial limited

12 Willoughby, Charles and John Chamberlain. MacArthur
13 Manchester, 556.
14 MacArthur, Douglas. Reminiscences. (New York: Bluejacket
objective of repelling the North Koreans, where the fact that both China and the Soviet Union were actively combating American forces seemed to be glossed over. The President and the Joint Chiefs knew they could not have open warfare against those two massive countries in Korea during the 1950s. So, in their minds, less was justified in the Korean War. The war effort had to be balanced against the possibility of open provocation.

On October 1, 1950, while waiting for the U.N. to approve his sojourn into Northern Korea, MacArthur issued a statement to the commanders of the North Korean Armed Forces. In the statement he said “The early and total defeat and complete destruction of your armed forces and war-making potential is now inevitable.” In the article *To the Yalu and Back*, retired Colonel Stanlis Milkowski details four assumptions that guided planning during the post-Inchon incursion above the 38th parallel. Of the four, the last is the most erroneous. MacArthur and his staff assumed “there would be no interference by the Soviet Union or China with UNC (United Nations Command) operations. MacArthur had identified the remnants of the North Korean Army as the enemy center of gravity, which was true as long as his fourth assumption remained true.”

MacArthur’s statement and the assumption inherent in his planning process is evidence that MacArthur did not take the Chinese threat seriously. But the Chinese already were planning involvement. Chinese Field Marshal Peng Dehuai, a close confidant of Mao Zedong, reportedly told the Politburo that “sending troops to aid Korea is necessary….If the American military places itself along the Yalu River and in Taiwan, it could find an excuse anytime it wants to launch an invasion.” In addition, Chinese diplomats warned the United States indirectly that there would be repercussions if the United Nations began a northern

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campaign. For example, “On Saturday, September 30th…Chou [Enlai] has broadcast a warning that the Peking regime would not ‘supinely tolerate’ a crossing of the Parallel, that Mao’s troops ‘would not stand aside’ if MacArthur swept into North Korea.”18 And again on Wednesday, October 4, “Chou had summoned K. M. Panikkar, the Indian ambassador to Peking, and told him, somewhat enigmatically, that should the U.N. commander cross the parallel, China ‘would send troops to the Korean frontier to defend North Korea,’ though this step ‘would not be taken if only South Korean troops’ moved north.”19

MacArthur did not see his decision to use U.N.C. troops north of 38th parallel as exacerbating what can only be described as a delicate situation. He wrote “It is perfectly clear now that whether our troops crossed the 38th parallel or had remained south thereof, the Chinese forces would have been utilized to rectify the situation resulting from the North Korean defeat.”20 That debate is for other scholarly works, but as it applies to this paper, based on the evidence above, the presence of U.N. troops and the decision of MacArthur to send American and other Western troops to the Yalu river certainly did not help the situation and may have indeed been the catalyst that forced the Chinese Politburo into action, to the great detriment of U.N. forces.

As is recorded historically, in the middle of October, Chinese forces began crossing into Korea. Predominately infantry and artillery, they were rapidly thrown into action against the Allies. Some estimates place over 900,000 Chinese soldiers in the initial stages of the North Korean counter-offensive. This massive infusion of manpower drove the Allies back through the territory they had so recently occupied. In the fierce North Korean winter, the Chinese and North Korean forces mounted offensive after massive offensive. By January of 1951, a little over two months after the Chinese entered the war, the Allies were pushed back below the 38th parallel.

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18 Manchester, 586.
19 Ibid.
20 Willoughby, 380.
Why General MacArthur made that crucial decision to pursue the North Korean forces all the way to the Yalu River is a decision that has been hotly debated in the 54 years since the war’s end. Some say that those outside of the Allied Korean Command structure failed to offer proper directives to MacArthur himself. General Willoughby, who was MacArthur’s chief of intelligence in Korea, contends that MacArthur made Washington well aware of the fact that the Chinese had 868,000 soldiers just across the Yalu and insists: “Either Washington or the U.N. could have stopped our troops at any point in North Korea if they had taken the mounting Chinese threat seriously. Instead, each preferred the opiate of wishful thinking, the myopic resignation of the ostrich.” Of course this is directly contradicted by a statement made by MacArthur to President Truman, in which he said that, as of October 15, 1950, the Chinese only had about 125,000 troops along the Yalu River. To be fair, the warnings issued by Chou Enlai to the Indian Ambassador were disregarded in Washington as a “bluff” and the CIA and other foreign intelligence assets failed to instill in the President and others the grave threat that the Chinese posed, as well as their intention to enter the war.

Nonetheless, there is much evidence that MacArthur himself did not foresee Chinese intervention. An article published in Time puts it differently: “Where MacArthur’s intelligence failed, however, was in not estimating correctly the number of Chinese that had crossed the Yalu, the fighting quality and discipline of the Chinese troops, and the heavy concentration at a point in their line against which MacArthur put his weakest forces, the Korean II Corps.” Lastly, in a meeting between President Truman and himself, Truman asked about the chance of Chinese involvement in the war. MacArthur responded: “Had they [the Chinese] interfered in the first or second months, it would have been decisive. We

21 Willoughby, 396.
23 Manchester, 586.
are no longer fearful of their intervention.” The fateful meeting on Wake Island was on October 15, 1950 – only four days before the first Chinese soldiers crossed into Northern Korea.

In addition, within the military planning process, contingency plans are a necessary part of the overall strategic concept of operations. I have not been able to find any evidence of any contingency plan that accounted for vast numbers of Chinese reinforcements entering the battle field. Had MacArthur been taking the Chinese seriously, as a leader of the United Nations Armed Forces, he would have directed the preparation of contingency plans based on scenarios of Chinese infantry involvement in the Korean conflict. Another way to look at this situation is that MacArthur’s supply lines into North Korea were stretched very thin. This is shown by the necessity of airdropped supplies for both the Eighth Army and X Corps while they were heavily engaged with the Chinese. As a tactician and an infantryman who was heavily experienced, MacArthur would have known that one’s frontline units are only as strong as the supply lines that feed them, clothe them, and get them ammunition. Had MacArthur been at all worried about massive Chinese involvement, his advance into North Korea would have been far more cautious, giving him plenty of time to build strong supply lines and to stockpile the necessities of war closer to the front.

Thus far, it has been demonstrated that General Douglas MacArthur was at times a brilliant tactician, as seen in the Inchon landing, and a brilliant statesman and administrator during the occupation and subsequent rebuilding of Japan. It has also been demonstrated, however, that MacArthur was arrogant, had little outside control imposed upon his decisions in the Far East, and believed in waging total war within the context of Korea. It was this deadly combination of factors that lead to the rapid defeat of U.N. forces after the Chinese

25 Wiltz, 172
intervention and the subsequent stalemate that settled near the 38th parallel – ironically where the whole conflict began. MacArthur’s arrogance and his unquestioning staff allowed the belief that the U.N. forces were unstoppable and that victory would be established by Christmas. MacArthur’s belief in total war led to the pursuit of North Korean forces to the Yalu River; the little outside control exercised by MacArthur’s superiors ensured that his forces marched to their destruction. In addition, the combination of the above-stated factors led to an inability to see or plan for Chinese involvement in the Korean conflict.

These are many lessons that can be learned from the Korean War and more specifically from the leadership style of General Douglas MacArthur. MacArthur was at times a brilliant tactician and leader, though all people make mistakes, misjudge situations, or misread circumstances. MacArthur’s authoritarian style of leadership led to some early victories, such as the Inchon landing which probably saved the Allies from an embarrassing early defeat in Korea. His leadership began to break down as the war continued, however, and MacArthur’s perception of the battlefield outran the actual reality on the ground. The only way to circumnavigate the failures of MacArthur’s leadership style is to foster a command environment in which multiple able bodied leaders are able to express opinions and in which command decisions are based on consensus, not one man’s idea of the world.

In conclusion, though General Douglas MacArthur made an overarching strategic mistake while prosecuting the Korean War, he is still one of America’s most decorated generals and his successful reconstruction and rehabilitation cannot be overlooked. Leaders everywhere can draw on the lessons of MacArthur’s failings in order to prevent similar shortcomings. Hubris, assumptions, and combative independence are traits that aspiring leaders would do well to avoid.
Bibliography:

Primary Sources:
“General MacArthur Protests.” Saturday Evening Post 222 (July 30 1949): 4
MacArthur, Douglas. A Soldier Speaks: Public Papers and Speeches of General of the Army

Secondary Sources:
“Case of the Enigmatic Caesar; Review of the Riddle of MacArthur: Japan, Korea and the Far East.” Saturday Review of Literature 34 (February 3 1950): 9
“Challenge by Colleagues.” Newsweek 37 (January 4 1951): 18
“How much Worse would Korea be a la MacArthur?” Saturday Evening Post 224 (April 12th 1952): 10
“How not to handle Orientals: MacArthur tries to make policy.” Christian Century 67 (September 13 1950): 1067


“The Presidency.” Time 56 (October 23 1950): 18


**Kiss Me, Shakespeare:**

Cole Porter reached his pinnacle with *Kiss Me, Kate*

Mary Elizabeth Godfrey

**Introduction**

“To set Shakespeare is to risk fiasco,”\(^1\) perhaps because of the musicality inherent in the text. It is no wonder that Cole Porter was hesitant to agree to the project proposed by Sam and Bella Spewack, in spite of the success of their earlier collaboration, which had produced the 1938 hit *Leave it to Me*. When the Spewacks told Porter that the new play would be based on an early comedy by Shakespeare, Porter resisted, thinking that American audiences would not support such a thing. The Spewacks persisted, however, and the trio was reunited.\(^2\) In the end, Porter created a perfect musical in which his songs went beyond providing tuneful interludes to becoming an integral part of the plot. As evidenced by the witty and inspired book of the Spewacks, his own extensive knowledge of Shakespeare’s work, and the ability to draw from his cosmopolitan experience, the music of *Kiss Me, Kate* is something quite special.

**The Man**

As was his habit, Porter began each song with a title to fit the plot. After finding a melody, he wrote the lyric, starting with the last line in an effort to give it a strong finish. “I do the lyrics the way I’d do a crossword puzzle,” Porter said.\(^3\) He was able to draw on a personal knowledge of French, German, Spanish and Italian, and he kept at hand a variety of rhyming dictionaries and reference books.\(^4\) The result was often a memorable song that sounded effortless. Even with that, Porter had “[begun] to fall out of fashion in the forties—his wartime shows were formula things that generated neither critical respect nor lasting hit songs—but he made a triumphant return to form in 1948 with *Kiss Me, Kate*.”\(^5\) *Time Magazine* devoted an article to the musical a month after it opened on December 30, 1948: “*Kiss Me, Kate* proves better than any of his previous work. He is one of the most thoroughly trained musicians among U.S. popular composers.”
The review abounds with adjectives such as “gilt-edged,” “stylish,” and brimming with “real comic invention, multisyllabic rhymes, innuendoes about l’amour, digs at social foibles, and easy allusions to famous people and far-off places.” Porter must have had a good feeling about *Kate* as he treated 97 friends to the opening night performance.

By that time, Porter had had his somewhat tragic horseback riding accident of 1937 and was in a chronic pain that would plague him for the rest of his life. To keep composing, Porter had his piano elevated so that he could work from his wheelchair. Recovery included several years on crutches, but by the time of *Kate*, Porter was able to get around with only a cane. In the years preceding *Kate*, Porter’s work was being eclipsed by others. He constantly compared his past work to that of the team of Rogers and Hammerstein. At a low point personally and professionally, he needed a success.

**The Exposition**

“Another Op’nin’ Another Show” is a hardy call that rings out backstage between actors on opening night. These famous words were written for *Kiss Me, Kate* and are the first heard in the show. The story of *Kate* is one of the acting company led by Fred Graham. They are planning to open at Ford’s Theatre in Baltimore, Maryland, which immediately foreshadows disaster. This opening number serves as exposition for the situation, which is, in fact, a frame upon which Porter and the Spewacks hang the story of Shakespeare’s *Taming of the Shrew*.

Shakespeare’s play is also set in a frame – the gulling of Christopher Sly for the amusement of the nobility. The frame is not completed at the end of the play, possibly because “his disenchantment […] would disturb the mutual triumph of Kate and Petruchio, who are rather clearly going to be the happiest married couple in Shakespeare.” The farcical elements that inform the manor in *Shrew* are transferred to the acting company in *Kate*; and as in the original, the musical ends with the marriage of Kate and Petruchio while the audience must draw their own conclusions about the parallel happiness of Lilli and Fred.
Rising Action

The music in Act I shows a number of musical influences, but ultimately can belong to no one but Cole Porter. “Another Op’nin’ Another Show” has several undeniable similarities to Irving Berlin’s “No Business Like Show Business” from his smash hit musical *Annie Get Your Gun.* From the subject matter to the peppy leaps within the vocal line, these two songs have a number of similarities. Ironically, Cole Porter’s favorite singer was Ethel Merman – the original Annie. Porter used her in many of his shows because, as she said, “I can boff out those lines the way he wants them.” As Schiff points out, the musical style of “Another Openin’” uses the traditional Jewish dance form of the Frelakh. Porter himself was not Jewish, which put him in the minority in the musical theatre business, but he believed that success depended on “writing Jewish.” Using this dance form was one example of his knowledge of Jewish folk music; later songs in minor keys also echo Hebraic tones. Like Berlin, Porter knew how to be adaptable to whatever the popular idiom happened to be. However, Porter was able to do this and still stay undeniably Porter.

The Ballads Begin

“Why Can’t You Behave” is the ballad in which Lois reprimands Bill for his behavior (which she, it seems, actually finds attractive). While Lois and Bill are the supporting members of the frame story, Porter here foreshadows and showcases the parallels to their characters of Bianca and Lunentio in the show-within-the-show. Porter’s ballads are often sardonically poignant and follow an AABA format. “Why Can’t You Behave” is no exception. Classic Porter sarcasm is evident in lyrics such as “There’s a farm I know near my old hometown/where we two can go and try settling down./there I’ll care for you forever, well at least till you dig my grave.” The juxtaposition of the pastoral love with the sassy “dig” makes this ballad quite tasty. The actress playing Lois/Bianca must have a big vocal range. Even as a young composer, Porter challenged his singers to vocal acrobatics and this ballad is no exception. The range of this ballad covers more than an octave.
Wonderful!

“Wunderbar” is a perfect example of Porter’s worldliness transposed to song. This charming waltz is often compared to a song from a Viennese operetta, which must have been a favorite of the Porters when they were in residence at their Italian villa. Fred and Lilli are old lovers, while Shakespeare’s protagonists do not have a past upon which to reflect. Still, Shrew’s Katherine is so instantly smitten when Petruchio bursts into her orbit that imagining that the song belongs to them also is not too much of a stretch. The lyrics of the song also showcase Porter’s ability to insert foreign words such as “Jungfrau” and “chalet” into the music in such a way as to sound completely accessible, which could also be a factor in his popularity. Allowing his audience to feel as worldly as the singer surely makes Porter’s music more entertaining.

The Comic Relief

After two love songs in a row, and before a third, American gangsters are introduced by the Spewacks. They provide comic relief in addition to reminding the audience that the players are actually in Baltimore, not Italy. After some brief “business,” the show again becomes Porter’s. The first three songs have been wonderfully varied, and there are fourteen more to come. Porter said of his music: “I simply can’t analyze it. I can analyze the music of others. The work for Dick Roger’s melodies, I think, is holy. For Jerome Kern: sentimental. For Irving Berlin: simplicity. For my own, I don’t know.”

The Aside

A cliché of the American Operetta is the “I love you, you love me, but I can’t tell you, song.” “So in Love” is the gorgeous love song that Lilli sings in an aside: Fred does not hear her from his adjoining dressing room. The song expresses emotions that are in stark contrast to the way the newly-engaged (to someone else) Lilli acts in public. “So in Love” also shows Porter’s distinct use of Latin rhythms. Cushman calls it “a distilled beguine, with its masochistic lyric underlined by its insistently torrid music.” Its pulsing rhythms are almost an echo of those of the earmark Porter hit “Night and Day” from 1932’s The Gay Divorce. Another possible influence for the song, according to David Schiff, is
Beethoven’s “Ich Grolle Nicht.” Not only are these songs related by a soaring vocal line over a rhythmic accompaniment, but also by the way the lyrics deal with the subject of love. On the surface, both songs reference the night: for Porter, “In love with the night mysterious,” for Schumann, “falls into the night of your heart.” Each of the lyrics talk of a strength coming from the singer: an “I Will Survive” vibe that almost challenges the lovers whom each song is addressing by calling them on their wicked ways. Lilli sings “So taunt me and hurt me, deceive me, desert me,” while Schumann’s lyric says somewhat blatantly, “I saw how wretched you are.”

**The Lists Begin**

“We Open in Venice” is the first example in this musical of Porter’s famous list songs. As usual, he has something to offer beyond a mere catalogue. In this case, the players compare the town of Cremona to its antithesis Parma, which can only be described using the additional device of internal rhyme. While there are “lotsa laughs” in Cremona, Parma is “that dopey, mopey menace.” Cremona offers “quail,” while Parma is “heartless” and “tartless.” “Dough” can be had in Cremona, while Parma is described as “stingy, dingy.” The troupe looks forward to “bars” in Cremona, while Parma is “beerless, cheerless.” All of this punctuates the circular nature of the song, which is delivered in boisterous good spirits.

Cushman cautions that “A list-song, if it’s to avoid monotony, has to be sped along by its music as well as by its lyric.” However, in the 1999 revival cast’s rendition of the song, at each repeat, the cast got a little slower to showcase the actor’s “fatigue.” This is an interesting take but not necessarily the traditional one. The score does not dictate the tempo changes between verses; however it is up to the creative team to keep the song from getting dull as it goes on for four full repetitive verses.

**Marry Me**

“Tom, Dick, or Harry” is a clever song in which Shakespeare’s three suitors (Gremio, Lucentio, and Hortensio) parallel Lois’s “real” admirers, whom the character refers slangily to as the men of the title. It is a sparkling dance number, but Porter wasn’t satisfied with it and wanted to cut it. The Spewacks protested, and “the performers concocted a
jazz finish for it.” Porter enjoyed the arrangement so much that he agreed to keep the piece.  

**Show Me the Money**

“I’ve Come to Wive it Wealthily in Padua” is the second list song in the musical. In this one, Porter uses a stately Elizabethan dance beat. As Petruchio, using language from *Shrew,* declares his intentions of claiming a wife to deepen his purse, we hear through Porter’s clever lyrics how boastful is Petruchio and what he is willing to face in order to gain a dime (even though, as his father’s heir, he presumably doesn’t need more money). *Shrew*’s Petruchio gives a list of braggadocio of his own, which Porter makes his own with some intensely funny rhymes to describe the woman he is willing to tame in order to increase his wealth: “Do I mind if she fume and fuss, if she fume like Vesuvius, If she roar like the winter breeze on the rough Adriatic seas, […] If she fought like a raging boar, I have oft stuck a pig before” Again, Porter’s urbanity and exposure to the greater world inform his lyrics to make them more than simple lists that rhyme.

**Tell it, Sister**

When Kate sings “I Hate Men,” she sounds as frustrated as any young woman who has been passed over – not for the first time – in favor of her younger sister. Her pride leads her to “protest too much” in this third and most feminist list song in *Kiss Me, Kate.* Porter pokes fun at the foibles of the straight world: “mother ‘had’ to marry father” and “don’t forget ‘tis he who’ll have the fun and ye the baby.” Perhaps this song comes closest to aping Shakespeare’s use of bawdy innuendo. Petruchio’s speech to the tailor in *Shrew* includes such references as “gown,” or “cunt,” “fashion,” or “fascinum” (Latin for penis); as well as the more accessible “demi-cannon,” “up-and-down,” and “tart.” Elizabethan audiences presumably would have been shocked at such language being uttered by a female character; 20th Century Americans are delighted by Porter’s naughtiness. Kate’s list of all types of men is delivered in a repetitive form that can be lengthened or shortened, depending on the needs of the performance. In the original libretto there are only two verses, but the 1999 revival featured four. The additions to the lyrics were written by Arthur and Lois Elias for the new production.
This piece also allows the actress to really own the song because the solitary chords under phrases allow for a *colla voce* feel, with music interludes between the verses.

**The Plot Thickens**

In *Shrew*, it Bianca who says “I never yet beheld that special face/Which I could fancy more than any other.” 26 Porter takes that line and makes it a question, and transforms the thought into a song of courtship for Petruchio. It has only one verse, but it is sung twice and separated by a bridge during which the characters – Petruchio and Fred – realize their love. The bridge is classic Porter: “I wrote a poem […] I wrote it with my tongue in my cheek […] to my surprise/It suddenly applies/To my darling – to you.” The first rendition of the verse ponders a question; the second is filled with longing. The mood is enhanced by the use of the sultry Latin club beats of which Porter was so fond. Cushman observes that Porter was able to capitalize on the mid-thirties popularity of South American music. He further opines that Porter’s use of exotic rhythms reflect his world travels “not so much in ethnic specifics as in assurance.” 27 Porter’s obituary praised the song as “the kind of grammatical challenge that Mr. Porter relished, a song written entirely in the subjunctive.” 28

**Stop the Show!**

Porter must have also had a wonderful time writing “Cantiamo D’Amore.” While the song has a practical purpose – allowing for a scene change – the author was able to use his marvelous classical education. The opening line, “We sing,” is delivered in sequenced fourths that form a bell-like chord before the resolution on “of love.” The line brings to mind the openings of the great epics: the *Iliad*’s “Sing, O Goddess,” or Milton’s “Sing, heavenly muse” 29 (*Paradise Lost*, line 6). Of course, it’s a parody – nothing of great import is happening here. It’s a festival, a party, a celebration of Bacchus. The acting company has “Opened in Venice,” and they are letting off steam. They are also energizing the audience, who immediately afterwards will be hearing Shakespeare’s language from *Shrew*’s Act III verbatim before the *finale ultimo*, “Kiss Me, Kate.” In “Cantiamo…,” Porter perfectly captures the spirit of Elizabethan celebrations along with Shakespeare’s love of Italy, which provided the setting for all
or part of thirteen plays. Elizabethans would be familiar with “morris-dances, sword-dancing, wassailing, […] lords of misrule, mumming, disguising, masques – and a bewildering array of sports, games, shows and pageants.” 30 Porter took the opportunity to inject some all-out fun in this unusual production number.

A Fine Mess

Act I ends with Petruchio demanding “Now, kiss me, Kate,” while Lilli/Katherine, who are at this point inseparable, counters in bravura coloratura that demands absolute vocal control as well as incredible range: the score ranges from a low Eb to a high Bb. Porter creates a fine mess on which to end the act, and ensures that no one will leave during the interval.

Act II

While Hattie sings the opening bars of Act I, it is her love interest, Paul, who has the honors for Act II. Porter’s main job is to get the audience back in their seats and engaged in the show, and this number does just that. A heavy emphasis on the off beat gives the number a bluesy, Mississippi Delta feel, while the lyric plays with the theme “hot,” which can refer to temperature or to the sexual index of a person. “Too Darn Hot” exemplifies Porter’s references to sex, which were “naughty, sexy, freer love. It was not sentimental.” 31 By the time the chorus has joined in for some high-energy dance, the emphasis has escalated in tempo and intensity which drives the number into ‘twenties’ style Swing.

Please, No Regrets!

“Where is the Life that Late I Led” is the title of the next list song. The language of the song reflects the language of Shrew, which contrasts the “determinate, literal language traditionally [spoken by] men and the figurative, indeterminate language traditionally spoken by women.” 32 The title not only highlights Petruchio’s lament of his “unhappy” marriage and loss of his playboy days, but it is also one of Shakespeare’s favorite lines. We hear it in Shrew as well as in Henry the IV, part II. 33 which follows Shrew by about four years. In the latter play, Pistol is trying to cheer Falstaff after they have heard of the death of the king. Pistol completes the line by saying “Why, here it is; welcome these pleasant days!” That
line provides some hopeful foreshadowing; Petruchio, too, seems to be playing with Katherine during the wedding “feast.” The stage directions indicate that the line is to be sung, and Porter makes the most of that in his version. His verses of lament for his particular lost ladies are sandwiched among almost march-like verses of general regret, all stamped with Porter’s relentless skill in rhyme: “And Carolina? Where are you, Lina? / Still peddling your pizza in the streets o’Taormina?” is, in Cushman’s words, “famously fiendish.” Holden continues: “No one from the golden age of Broadway came close to Porter in the acuteness with which he dissected human mating habits and their accompanying obsessions.”

This song is also interesting because the orchestra becomes more than accompaniment. It is like another character in dialogue with Petruchio: each of his lost loves has a matching theme in the pit.

**The Good Time Girl**

“Always True to You (In My Fashion)” is sung “backstage” and follows some business in which the audience learns that Lilli’s fiancé, General Howell, has been a previous lover of Lois’s; additionally, he has invited her to get in touch “after a decent interval” with a promise of more jewelry. Lois attempts to set Bill’s mind at rest in her second solo number, which re-emphasizes the flirtatious nature of “Tom, Dick, or Harry.” According to Schiff, this list song is wholly Porter; it is the singular one in which the composer is not referencing any particular style. Its bawdiness is almost on a par with “Let’s Do It.” Lois enjoys the attentions of a vet who “begins to pet;” a pass by the boss of Boston Mass; an attack by “Mack” who may give her a Cadillac; and a tycoon, an oilman, a Hindu priest, a lush, a plutocrat, and Clark Gable. With all of that, she is true to Bill “in my way.” In keeping with the upbeat nature of list songs, this one definitely has the big band brassy swing flavor of the 1940’s.

**Reporting for Duty**

The next song is a duet between Lilli and her General. It is one that does not necessarily advance the plot. As a result, it is sometimes cut from productions. It is intentionally sappy, utilizing every cliché in the book. They call each other “lovebird, creampuff, poopsy,” and other saccharine terms of
endearment. By the end, the audience wonders how Lilli can consider this man over the much more interesting Fred. The song sounds like it belongs to the patriotic Musical Comedy genre. Much like Cohan’s *Johnny Jones*, there are patriotic march beats that bleed into a softer melody.

**It Ain’t Poetry, but it Rhymes**

Bill Calhoun “wrote” the next song in honor of Lois Lane, referring to her by her stage name, “Bianca.” He tries it out on the stagehands to “see if it’s worthy of her.” As Bill does not, presumably, have much education, the song is terrible, and that is part of its charm. The obvious parallels to their characters of Lucentio and Bianca are rampant. This song serves as a crossover story-telling device for both the frame characters and the sub-story characters, while showcasing Porter’s ability to make social references to make the songs topical. Porter mis-pronounces “Bianca” to rhyme it with “Sanka” and the then-new movie *Casa Blanca*. Lois, the good-time girl with the heart of gold, overhears part of the song and is smitten anew.

**Aside Redux**

The gangsters, who have been repeating lines all night learned in the library of the Atlanta Penitentiary, are about to depart following the death of Mr. Hogan, who held Fred’s IOU. Lilli, too, is about to leave with General Howell. Fred in despair reprises “So in love.” As he did not hear Lilli’s rendition, she does not hear this one. At this point, things look grim for the lovers, and Porter has just the thing to lift the mood.

**Back to Basics**

The revue and vaudeville tradition of stopping the action for some slapstick comedic routine had been somewhat weeded out with Jerome Kern’s Princess Show philosophy. “Brush Up Your Shakespeare,” however, uses the vaudeville formula while staying within the confines of the Princess Show philosophy. Porter again has a blast in this sixth and final list song: the Gangsters treat the audience to a crash course in the Classics. One “must know” Homer, Sophocles, Shelley, Keats, and Pope, among others, to impress girls. But the poet to “start ‘em simply ravin’” is “The bard of Stratford-on-Avon.” The rhyme is intentionally terrible, and from there,
the references are “low” enough – “Kick her right in the Coriolanus,” for example – not to be condescending. Even people who are not familiar with the play titles – and Porter mentions 14 of them, will get the jokes. This stems again from the musical comedy tradition that Cohan started: the “characters were American, the speech vernacular, and the songwriting direct and easily memorable.” Further, the rhythm sounds like it belongs to a traditional German drinking song. One can almost hear the “oom-pah-pah” of the Hofbrauhaus in the orchestration.

The song is immensely popular both in and out of context. Alex Ross covered a season at Glimmerglass during which the entire program consisted of Shakespearean plays set to music: operas and Kiss Me, Kate. Ross has a short list of favorite operas but says that, “If, at the end of the weekend, most patrons went away humming "Brush Up Your Shakespeare" rather than anything in Wagner or Bellini, that was only fitting; somehow I doubt that Shakespeare would have been much of an opera guy.”

All’s Well that Ends Well

After the comic interlude, the actors are ready to conclude their performance of Shrew. Unfortunately for the company, Lilli has quit the show and left the building. On stage, Fred ad- libs madly, saying “I know she [Lilli as Kate] will not come.” All are shocked, therefore, when the actress makes her appearance and sings “I Am Ashamed That Women Are So Simple.” It is the only song in all of Kate that takes nearly all of its lyrics from Shrew. The only deviation is on the bridge of the song, which is still a paraphrase “So wife, hold your temper and meekly put/your hand ‘neath the sole of you husband’s foot.” Before this section, the music mirrors Shakespeare’s ability to make iambic pentameter sound like effortless speech; there is no disturbance from natural speech patterns in either text. However, the music changes with the bridge. Porter abandons iambic pentameter in favor of more frequent accents, and the music reflects this change, becoming almost martial before the release at the end. There, he adds a second “ready” in the last line. The extra syllables add emphasis and allow for a lovely musical accent. Kate/Lilli is
tamed – or is she? She has certainly made her choice, but has she merely found a way to get her way?

**Falling Action**
The finale of the show is a reprise of *Kiss Me, Kate*, during which we see Petruchio and Kate married, a mirror image to the end of Shakespeare’s play. However, the audience is left with the job of deciding the fate of not only Lilli and Fred, but also of Lois and Bill and to some extent Hattie and Paul. This lack of return to the frame story’s overarching storyline is a clever way to end the show, because it gives the audience room to predict their own endings.

**Dénouement**
Ironically, the show that Porter most resisted doing became his greatest and most important work. The intelligence of the score and design make *Kiss Me, Kate* not only a viable extension of Shakespeare’s original play, but also a score that reflects Shakespeare’s intent while showcasing the genius of the constructor through his incredibly witty inner rhymes, but also through the references in both lyric and compositional style. As Richard Rogers said, “Few people realize how architecturally excellent is his music. There’s foundation, a structure, and an embellishment. Then, you add the emotion he’s put in and the result is Cole Porter.” ⁴⁰ For most of us, however, his music simply is fun to listen to. We don’t worry about form or rhyme; we simply enjoy the incredible variety and the connections we feel to his music. Like his fellow genius Shakespeare, Porter wrote for people from all walks of life, and *Kiss Me, Kate* is fittingly regarded as the pinnacle of a remarkable musical career. Shakespeare would be proud.
Bibliography


Herendeen, David. Class lecture, Music Theatre Literature, Oklahoma City University. 26 February 2009.


Kiss Me, Kate!. Directed by George Sidney. 1953; Burbank, CA: Metro-Goldwyn-Mayer, 2003. DVD.


Notes

7. Ibid.
8. Ibid.
9. David Herendeen. Class lecture, Music Theatre Literature, Oklahoma City University. 26 February 2009.
11. David Schiff,. "One Swell Party."
12. qtd in “The Professional Amateur.”
13. David Schiff,. "One Swell Party."
16. Harold Bloom. Shakespeare 29
18. David Herendeen.
20. David Schiff,. "One Swell Party."
22. Cole Porter and Samuel and Bella Spewack. xv.
28. “Cole Porter is Dead: Songwriter was 72.”
31. David Herendeen.
34. William Shakespeare. *The Taming*. IV.i. 140
37. David Schiff. "One Swell Party."
39. Alex Ross. “Mark the Music.”
40. qtd in “Cole Porter is Dead: Songwriter was 72.”
Finding Your Soul Mate Is Easier than You Think
Chad Carman

Everybody wants to find his or her perfect soul mate. That one person who, at the very thought of them, sends shivers down the spine. Everybody wants to know someone with whom they can share an interment, meaningful moment. Yet, how does one go about finding this perfect person? This is an age-old and worldwide problem faced by many people. However, thanks to the rise in technology over the past few decades, it is becoming ever easier to find that ‘needle in a haystack.’ Online dating companies with compatibility tests and the ability to rate and match like-minded people are one such example and are becoming increasingly popular.

These online companies ask prospective members to join their community and create a personal bio or “profile.” Then the Web site matches those who are deemed “compatible” through their own specific and original system. Once matches are made, conversations develop between these members and, often times, lead to dating and relationships. While many people believe that online dating doesn’t really work or that it is dangerous, I believe it is a much easier and more effective method of dating for those who are older in age or simply do not have the time and resources to date traditionally.

There are three major arguments for the use of online dating: (1) there is a much greater frequency for their use; therefore, it is easier to create larger online database of single people; (2) many of these companies use scientific reasoning to find matches that are based on compatibility; and (3) there is a large success rate compared to alternative methods of dating for individuals who are most likely to use these services.

Online dating is becoming more and more popular each year. According to the Pew Internet & American Life Project, a top research institute that studies the social impact of the internet, of the roughly 10 million internet users surveyed, “Three out of four online Americans who are single and looking for romantic partners have used the internet for at
least one dating-related activity” (“Online Dating”). Coco Masters, a writer for *Time* magazine, claims that the industry accounted for “$649 million in revenues in 2006” (“We Just Clicked”). Sites such as eHarmony are having success rates of “17 million members . . . $200 million in annual revenues and 30 percent yearly growth” (“We Just Clicked”).

One major reason online dating has become more popular can be attributed to the relatively low cost to its users. Most of the popular dating sites allow people to receive and review personal matches free of charge. When a person decides on individuals they deem worthy of contact, they may then pay a fee for a period of time that allows them to make contact with the matches of their choice. Many times, a few months’ subscription can cost a person roughly the same amount as a few nights’ bar tab. A price for a one-month subscription runs from $59.95 for eHarmony, to $19.95 for FriendFinder, to $34.95 for Match.com. With the rapid success rate of many of these companies, this is a relatively small fee to pay. There is a much greater chance of meeting somebody through the online community. With the rise in the digital age and the relatively low cost of internet and computer technology, it is easy to see why so many people are stretching out over the internet to find somebody.

Another reason for the popularity of online dating includes the relative ease with which one can become involved in it. There has been a rapid increase in our technologically-based society. As a result, it is easier to check one’s email to see what new matches have been listed than it is to go out to a bar for a night. Often times, the working adult or the single parent has little opportunity to find a reasonable alternative to online dating. They are simply far too busy dealing with their everyday lives, which may include working or children. Online dating, therefore, is a more convenient alternative to the stereotypical use of bars or nightclubs as one’s primary avenue for meeting singles.

Due to this immense growth in popularity, there are new opportunities for dating Web sites popping up every day. Forbes.com lists 11 of the top rated online dating communities that include the likes of Match.com, eHarmony.com, and Matchmaker.com – along with some lesser known sites such
as Friendfinder.com and Perfectmatch.com. Along with this list, *Forbes* gives an in-depth review of each, listing the cost associated with the Web site along with the “good” and “bad” of the respective companies. With top-rated magazines such as *Forbes* reviewing these communities, it is hard to deny that online dating will become more and more common as time goes on.

And online dating isn’t just popping up in the United States. Many American-based online companies – such as eHarmony and Match – are working vigorously to research the possibilities of populations of people in China, India, Japan, and many European countries. According to Coco Masters, “If a country [like America] with little tradition of matchmaking can embrace a version of it online, then it follows that cultures long used to a third party's hand in love affairs would do the same” (“We Just Clicked”). There is an extremely large market in these foreign countries. Masters states that, in China alone, “60 million Internet users are of marrying age” (“We Just Clicked”). While many of these countries are used to the concept of being matched by parents or local community members, the US companies are basing their matches on science.

A crucial component of successful online dating is commonly attributed to the scientific compatibility advertised by many of these communities. All of these sites claim to have their own separate sets of compatibility wizards. These match you with whom you are most likely to have things in common. eHarmony.com’s section claims that it matches people based on “29 Dimensions™ that help predict great relationships” (Why/Science). According to David Carman, who successfully found his soul mate on eHarmony, “They ask the questions in such a way that they can statistically figure out if you are consistent in your [sic] answers or not, so when they match you, they are pretty accurate in the matches.” Match.com claims it can “use this [scientific] information to find those members who meet your criteria for a match, and who also have specified that they are looking for someone like you” (Help/FAQ). In *Forbes’* review of Match.com, it states that Match.com “has made a science out of online dating, literally, with a personality test and physical attraction test”
After analyzing the results from these tests, Match.com compares them with other member’s results and then matches them.

For those people who consider themselves limited on time or resources for dating, the scientific matching principle is a big factor. Those with limited resources will always take the path that is most proven. Most users believe that, if there is a community that can match two people based on scientific compatibility, then it would be in their best interest to use those limited resources available through that community.

The scientific basis for matching also directly addresses some of the fears associated with online dating, including the fear of false information and the fear of those only looking for sex. Many skeptics are often worried that people are portraying themselves in a false manner or manipulating information in a way that would otherwise deter onlookers. For this reason, many companies also have their own set of guidelines for safety when partaking in an internet endeavor. eHarmony lists seven “Safety Tips” for “safely navigating online relationships:” Always Use Your Best Judgment, Be Cautious When Sharing Personal Information, Do Your Own Research, Make Your First Date Safe and Successful, Take Your Time, Always be Respectful and Kind, and Report Concerns About a Match to eHarmony (eHarmony). In addition, these guidelines also serve as deterrence for those only looking for sex. It is recommended that people list whether they are looking for a long-term commitment or a physical relationship. There are certain online communities devoted wholly to sexual actions, which further shows that online dating can be a solution for many people.

The great efforts taken to make this a safe experience combined with scientific matching shows why these individual companies have a high success rate when it comes to match-making. Research by Harris Interactive “finds that, on average, 236 eHarmony members marry every day in the United States as a result of being matched on eHarmony” (eHarmony: Press Releases). The people who use dating Web sites, such as eHarmony or Match.com, are generally older, more time-constricted individuals and usually searching for long-term, meaningful relationships. My parents, for example,
who divorced in their forties, were beyond they age where they felt comfortable going out to bars, going on blind dates, group dates, or many other forms of dating that are common amongst people half their age. They tried singles groups at their churches, but most of the people they met had little to nothing in common them. As a result, my mom and dad seemed to go about life somewhat by themselves if I wasn’t there.

My mother was the first to fill try eHarmony.com. After she found her new husband via the site, my dad decided to give it a try. Although, according to him, she had nothing to do with his decision to pursue online dating. Consequently, he also found his perfect “match” online and re-married shortly after I graduated high school. They are happier now than ever.

This is often the case with online dating. According to Dr. Jeff Gavin, an authority on internet dating agencies at the University of Bath, “A new study of online dating site members found that when couples who had built up a significant relationship by e-mailing or chatting online met for the first time, 94 percent went on to see each other again” (“Internet Dating”). Of those researched by Dr. Gavin, many of the couples questioned had meaningful relationships that lasted at least seven months, and many had in-depth relationships that lasted longer.

In conclusion, the prevalence of online dating communities, the scientific basis of these communities, and their high success rates provide adequate proof that these sites are a better alternative to conventional dating methods. Those involved, like my parents, seem to relish in the fact that they were able to meet their soul mates in a manner that would otherwise never have allowed for their encounter. Online dating communities provide time-constrained people with a calm, comfortable environment with which to establish long and meaningful relationships. It would not be surprising to see online dating become one of the major institutions for finding that perfect somebody.
Works Cited

Pathogenic basis of cross reactivity in Autoimmunity
Chandra Kroll

Abstract
The purpose of this paper is to identify the proposed mechanisms involved as pathogenic etiological agents in the pathogenesis of autoimmune disorders. This will be approached by looking how molecular mimicry determinants induce cross-reactive T cells to elicit immune responses that become self destructive. Specific autoimmune disorders presented will include myocarditis, Multiple Sclerosis, and Systemic Lupus Erythematosus, as well as others and the distinctive viral influence of the Epstein-Barr virus. Because of the dynamic processes elicited during the induction of T-cell meditation that could be initiated by cross-reactivity, much is to be examined in how molecular and cellular events work cooperatively together as well as in what manner of time and order.

Role of Infections in Autoimmunity
Autoimmunity can occur when the immune system initiates a response against a foreign antigen that cross reacts with self antigens. Infections may activate self-reactive lymphocytes, thereby triggering the development of autoimmune disease (1). This is recognized in clinical manifestations of autoimmunity following infections by certain bacteria or viruses, and implicated in animal models. Stimulation of viral and bacterial infections contributes to autoimmunity in several ways, including increased cytokine production. Cytokine production (produced by dendritic cells (DCs)) is initiated when pathogen-associated molecular pattern molecules known as PAMPs bind to pathogen recognition receptors known as PRRs on lymphocytes. Resting immature DCs interact with toll-like receptor (TCR) ligands and are expressed by many cell types. TLRs are linked to signal transduction pathways, which activate genes that promote inflammation and resistance to viral infection (1). This occurs when the TLRs recognize a variety of PAMPs including but are not limited to microbial nucleic acids, and lipopolysaccharides. When this occurs it activates kinase
cascades that result in cytokine production (interleukins- IL-1, IL-6, and tumor necrosis factor-TNF’s specifically) by the tissue’s antigen presenting cells (APCs)(2). The IL-1 family plays a role in inflammation and host defense, the IL-6 displaying pro- but also anti-inflammatory effects and playing a central role in hematopoiesis as well as in innate and adaptive immune responses, and tumor necrosis factor alpha (TNF-α) being among the first cytokines whose dysregulation was proposed to contribute to the pathogenesis of various autoimmune disorders (3). One of the greatest successes in autoimmune disorder treatment includes the use of TNF blockers. These have been extensively studied and are currently commonly used for treatment and found effective against RA, Crohn’s disease and psoriasis (3).

Certain infectious agents, or other prompt reactions, initiate the inflammatory response and are induced by the IL family. Out of the IL family, the IL-1 gene family has identified up to eleven members alone, with only five being studied up to date (3). Therapeutic benefits have been accomplished with IL-1 antagonists due to IL-1’s brusque inflammatory components involved in pathogenesis. These diseases include Systemic onset Juvenile Idiopathic Arthritis (SoJIA), gout, type II diabetes, as well as a series of hereditary diseases causing periodic inflammatory symptoms and grouped under “familial autoinflammatory syndromes” (3).

Differentiation of immature DCs into mature DCs also can select autoreactive lymphocytes (3). Clinical autoimmunity arises from the altered balance between the auto reactive cells and the regulatory mechanisms designed to counterbalance them (3). Many recent collaborative efforts look at using cytokines as therapeutic targets to prevent auto inflammatory and autoimmune pathology by controlling dendritic cell activation to balance tolerance and immunity. Although many TNF blockers are used in autoimmune disease treatments, there are still many investigations looking at implementing interleukins and other cytokine blockers. Currently, the IL-12/23 blockade is used as treatment in Crohn’s disease, multiple sclerosis, and psoriasis. As well as type I interferons (IFNs) blockers in SLE, Sjogren’s
syndrome, autoimmune myositis, and perhaps early stages of psoriasis (3).

In some cases, APCs can stimulate self reactive T cells that result in self tissue damage.

Microbial peptides can also result in self tissue damage by producing peptide molecules that are structurally similar to self antigens that may cause a cross reaction inducing the immune response to attack against those self antigens. This is a major hypothesized mechanism of how an infection caused by environmental elements such as bacteria or viruses may play a role in developing autoimmune disease and is termed molecular mimicry (4). While in other instances, microorganisms may activate the APCs to express costimulators, therefore when these APCs present self antigens, the specific T cells are activated rather than being rendered tolerant (2). Normally, when self antigens are presented to T cells by the APCs, they should become anergic, die, or suppressed, thus preventing autoimmune responses. Although specific pathogen peptides have been identified to mimic self proteins and remain of interest to immunologists and cell biologists, the actual development of most autoimmune disease remains unknown -- other than autoimmunity possibly resulting from failure of self-tolerance induced by multiple factors such as genetic inheritance and environmental triggers. When T cells revolve from tolerance, whether that be disruptions in peripheral tolerance maintenance, most autoimmune diseases are thought to arise from the breakdown of immunological tolerance in CD4 cells (5).

**Regulatory T Cells Intermediary Character & Possible Unparalleled Bungle…**

When regulatory T cells recognize certain peptides complexed with the MHC on APCs and are activated they mediate the adaptive immune response. Unfortunately, no consistent infection has been identified in causing a molecular mimicry response; however a lot of work has been done on T cell receptor degeneracy. This degeneracy in T cell recognition allows for effective T cell responses against the common vast number of potential peptide sequences from various antigens. T cells that undergo peripheral tolerance
should not respond to self antigens. If mature T cells do encounter a self antigen without co-stimulation, they should go through apoptosis. Appropriate peripheral tolerance induces T cell anergy by recognizing their specific antigens complexed with APC’s, however are not co-stimulated to proceed to the full activation step until they encounter their specific antigen. Transgenic technology of mice has proven that forced expression of high levels of B7 co-stimulators artificially provide second signals to break anergy resulting in autoimmune reactions against antigens in that tissue (1). It is also known that inhibitory molecules persistently regulate auto-reactive T cells; therefore, any malfunction in the inhibition could also cause auto-reactivity.

The plasticity T cell time line starting in 1993, established that diverse peptides and peptide-MHC complexes could stimulate a single T cell clone. How the TCR structural plasticity accommodates a variety of different peptide antigens has been determined by three large conformational changes of the TCR CDR loops that are induced upon binding (6). They have also found that TCRs can effectively "scan" different peptides bound within a large, low-affinity MHC structural framework by those that provide the slight additional kinetic stabilization required for signaling (6).

In 2002 and 2003, a model was attributed to how the same TCR could adopt more than one formation stimulating multiple ligands (7). Kranz’s studies looking at T cell receptors (TCR) deemed that TCR’s are selected for with flexibility in order to respond to the degeneracy of multiple ligand-binding sites, which could also account for the risk of cross-reactions leading to autoimmunity. Although not certain, Kranz attributes the TCR conformer model, which includes that conformational rearrangements occur only after pepMHC binding, accounts for T cell plasticity, cross-reacting (including binding degeneracy), and molecular mimicry (T).

Cross-Reactivity & Molecular Mimicry

When antibodies bind antigens that are structurally similar to what they would originally bind a cross-reaction occurs. Cross reactivity is often associated with molecular mimicry, which is hypothesized to occur when peptides from pathogens resemble self peptides. Molecular mimicry was
first established in the 1980’s when a viral peptide induced an autoimmune disease. An epitope between the Hepatitis B virus polymerase and the encephalitogenic epitope of myelin basic protein (MBP) for the rabbit could induce an experimental autoimmune encephalomyelitis (EAE)-like disease when used as an immunogen (3). The immunogen activated autoreactive CD4+ T cells specifically. Although molecular mimicry occurs through similar amino acid sequences, because major histocompatibility complexes (MHC) can bind hundreds of varying peptides, TCRs may still be able to cross react via class II molecules.

A cross reactive type response can also occur when infections injure tissue that may release self antigens that are normally part of healthy tissue the immune system does not normally see. When this occurs, the sequestering of an immune response may result in an autoimmune reaction. There have been several occasions in which certain proteins have been found to induce cross reactive effects and a few specific examples will be discussed in detail.

**Cross-Reactivity in Myocarditis**

Although it is believed that viral infections can induce myocarditis, a study by Cunningham looks at specific antibody mediated signaling involved in autoimmune myocarditis. Although myocarditis is diagnosed by measuring elevated anti-CM autoantibody levels (which have been shown to target proteins on the heart cell surface to induce protein kinase A (PKA) activity (ultimately launching myocarditis), how autoantibodies are generated toward cardiac myosin remains a particular interest because of its lack of clarity. It is also ambiguous whether the disease is mediated by cellular or humoral immune responses against CM (8).

The presence of monoclonal antibodies (mABs) specific for cardiac myosin (CM) confirmed a cross-reactive mimicry that stimulated the β -adrenergic receptor (β-AR) on the surface of CM. This was shown by the presence of mAB specific for CM and was confirmed by passive transfer of the purified Ab (IgG) from CM-immunized rats into other animals inducing a phenotypic cardiomyopathic heart disease in the recipients (8). The IgG present was specifically linked to cellular apoptosis in heart tissue. Generally β -ARs on human
heart tissue control contractions and heart rate. Therefore it is believed that anti-CM-Abs are linked to target peptides of the β-AR on the CM, which has been shown to provoke cardiomyopathy and heart failure. Cunningham’s study illustrated that the pathogenic peptide S2-16 targeted the β-AR receptor of the heart cell surface to induce the PKA activity thus inducing apoptosis during the development of heart failure (8). They were able to instigate β-AR’s effects on PKA activity by administering inhibitors of the β-AR including anti-CM, anti-Ig G, and others explicitly for the β-AR pathway.

Rats were administered antibodies once a week for 18 weeks then their hearts were removed and weighed (8). Ab titers were measured by ELISA and concentrations were measured by Bio-Rad protein assays and PKA activity by protein kinase assays. Immunoreactions were quantified by using western immunoblots, and antibody binding was visualized by tissue immunostaining.

**Molecular Mimicry in Multiple Sclerosis**

Multiple sclerosis (MS) affects at least one to two million people worldwide. MS and type I diabetes have resulted from damaged endogenous tissues caused by regulatory T cells. Currently the treatment for patients suffering from MS mainly consists of regular infusions or injections, which may or may not help elevate and prevent some of the devastating physical manifestations. Injectable treatment combines a number of interferon therapies (including interferon beta-1a, interferon beta1-b, and or glatiramer acetate (which is made of four amino acids)) (9). Unfortunately, some patients, especially those who receive injections for long durations of time tend to produce neutralizing antibodies reducing the effectiveness of the treatment. Depending on the individual and duration of the disease, treatments help reduce relapse, slow the progression of physical disability, and may or may not show to be effective after the first attack of the disease. Two new recent drugs that can be taken orally have found to reduce relapse in up to 80 percent of MS patients. These include a chemotherapy Leustatin drug Cladribine and an immunosuppressive drug Flinolimod, which has found to
prevent relapse in 80 percent of sufferers for one year after treatment (10).

MS continues to confound scientists because of its complexity reaching beyond a single origin, and multitude of possible initiations. MS’s devastation arises from the inflammatory demyelinating disease that affects the CNS which happens to be one of the most common demyelinating diseases. Although many viruses have been shown to be associated with MS, a single agent is yet to be identified because so many infectious agents resemble a CNS antigen. Several immunologists have resorted to the molecular mimicry hypothesis as grounds to instigate the disease. Because MS ranges in diversity and severity in those expressing the disease one hypothesis is that molecular mimicry may be mediated through human leukocyte antigen class I and class II restricted T cells and antibodies (11). Both helper and cytolytic T cells have been found to be involved in MS. Significant numbers of CD8+ T cells are found in MS lesions and MS is believed to be mediated by autoreactive CNS-specific CD4+ T cells (11).

Interleukin -23 (IL-23) promotes the development and expansion of activated CD4+ T cells that produce IL-17, IL-17F, IL-6, and TNF which are collectively called Th17 (3). IL-23 is a specific cytokine identified to be secreted by DCs upon exposure to gram negative bacteria. Genetic analysis of Th17 cells (with their differentiation inhibited by IFN-gamma, IL-4 and IL-2) identified a unique expression of pro-inflammatory cytokines and revealed a unique role in different mouse models of autoimmune inflammation (3). IL-23 and IL-17 are elevated not only in MS, but other human diseases such as psoriases, and Crohn’s disease signifying that these cytokines could be responsible.

A study in 2001, found that completely unrelated peptide sequences may lead to cross reactive T cells. They found this by using synthetic combinatorial peptide libraries in the positional scanning format (PS-SCL) together with novel biometric prediction approaches to describe the recognition profiles of individual autoreactive T cell clones (12). Improvement of patients with MS and chronic lyme’s disease was shown by administering altered peptide ligand of one of the candidate’s myelin basic protein (MBP) epitopes in MS
(amino acids 83-99) in clinical trials and have shown that a modified MBP may not only have therapeutic efficacy, but also bears the potential to exacerbate the disease (12).

The disease of mononucleosis implicated by the viral infectious agent Epstein-Barr virus (EBV) has been found to increase the risk of the MS disease later in life. EBV seroprevalence rates as well as EBV antibody titers and EBV specific T cells are higher in MS patients compared to controls and healthy individuals and is true for both adults and pediatric patients (13). The specific number of these titers is not yet revealed due to the internet access published ahead of print. EBV has also been found in B cells of the CNS of MS patients.

**Epstein-Barr virus’ Molecular Mimicry: Genetic and Environmental Dispositions**

Although numerous infectious agents including viruses have been proposed to be linked to autoimmune disease, EBV has been a widely studied and plausible candidate emphasized as a mediating environmental factor in autoimmune diseases, including systemic lupus erythematosus specifically (SLE). EBV is a human DNA herpes virus and affects more than 90 percent of the population (13). Like MS, SLE also is difficult to manifest a finite causation because of the multiple predispositions including genetic background, environmental cues, and the complexity of the disease. Etiologically, the EBV virus has shown molecular mimicry between its proteins as well as self antigens. The diseases associated include systemic lupus erythematosus (SLE), rheumatoid arthritis (RA), and primary Sjogren’s syndrome (pSS) and these are characterized by high titers of anti-EBV antibodies and impaired T cell responses to EBV antigens (E). High titers of these anti-EBV antibodies are found in peripheral blood of patients with diagnostic manifestations in both SLE and RA patients.

EBV acts as a good candidate because of its ability to remain in the host for long durations of time through its latent and lytic cycles as well as its immunomodulating effects. For any virus to be suspected as an etiological agent in autoimmune disorders, it must be able to induce the production of antibodies observed in the clinical
manifestations of the autoimmune disease and alter immune responses within the host. EBV unambiguously exerts a wide range of immunomodulating effects, including inhibition of apoptosis, inhibition of the anti-EBV effecting interferon $\gamma$ within B cells, and changing the production of pro-inflammatory cytokines such as TNF-$\alpha$, IL-1 and IL-6. (14). Also, EBV produces a viral cytokine that shares properties of IL-10 contributing to the limitations of host immune responses (14).

In some of Dr. Judith James latest work not yet accessible online, she investigated SLE-specific differences in EBV gene expression, by comparing levels of eight EBV genes between SLE patients and controls using both ex vivo-infected and un-manipulated peripheral blood mononuclear cells (PBMCs) and found that PBMCs from SLE patients had greater expression of latent genes as well as increased expression of both latent and lytic genes after infection (15). This may suggest that EBV may participate in SLE etiology through several mechanisms and may contribute to the altered infections’ increased levels of EBV and the molecular mimicry seen in sera from SLE patients (15).

**Discussion: The Difficulty in Ascertaining Finite Resolution**

The problem with cross-reactivity and molecular mimicry involves many factors that are yet to be determined. Although much work has been done to identify specific agents as attributions to autoimmune type responses, as more evidence leads to a possible causation, others may suggest it could be attributed to yet other possible factors. Although there are many further studies still needed in order to implement specific treatments, at least certain viruses and microbial peptides are being recognized to target. Such as using therapies targeting EBV load and the virus’s latent outbreak for those genetically disposed to SLE, RA and pSS.

Given that T cells play a role in most autoimmune disorders, there is still a lot of work being done to determine the target mechanisms within the cells and tissues. One of many complications include distinguishing the differences between pathogen derived molecules and endogenous peptides complexed with the MHC in T cell activation. Peptide
combinational libraries have helped determine the degeneracy in T cell recognition. This also enables the potential which is currently being researched to determine peptide sequences that can be used as treatment for T cell mediated autoimmune diseases as well as designing vaccines as treatment.
References:


A prominent figure dance company for 36 years, the Pacific Northwest Ballet continues to prove its place among the best in ballet in the United States. World-famous dancers and choreographers as well as talented musicians and scenic designers work together through the Pacific Northwest Ballet Company to create performances of world-class quality. From the start of the company in Seattle in 1972, PNB grew through the guidance of early leaders, but really began to take shape through the knowledge and leadership of Kent Stowell and Francia Russell. Now under the direction of Peter Boal as Artistic Director, PNB continues to stretch its wings to reach dance enthusiasts around the globe. The fame and reputation of the Pacific Northwest Ballet can be contributed to its history of employing great directors throughout the life of the company. The dancing and choreography of PNB has been at the forefront of the ballet world, where they are comparable to such giants as the New York City and San Francisco ballets.

This paper serves to connect important details in ballet’s history to educate and inform others of the growth and development of the art form as contributed to and by the Pacific Northwest Ballet, its founders, directors, repertoire, original works and the Pacific Northwest Ballet School. The facts and historical clues throughout this research will only skim the surface of the small upper tier of the ballet world, showing how the great ballet dancers and directors of the last century have all contributed to the present state and future of the world of ballet dancing.

It was 1972 when the Seattle Opera Association first developed the company as the Pacific Northwest Ballet

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Association. Former San Francisco Ballet Manager\(^3\), Leon Kalimos and famous ballerinas Janet Reed and Melissa Hayden were among the first to start the company and develop its programs. Having such famous and well-experienced leaders in its early days was only a small step for the organization. Kalimos was well known throughout the west for his longtime work with the San Francisco Ballet.\(^4\) In addition, Janet Reed became Ballet Mistress for the company and school from 1974 – 1976, having been a principal dancer with the San Francisco Ballet and Ballet Theatre (now American Ballet Theatre),\(^5\) as well as the City Ballet (now the New York City Ballet) under the direction of George Balanchine. Reed came to the new PNBA with experience as Ballet Mistress of the New York City Ballet, though she worked at PNB only for two years.\(^6\) Immediately after Janet Reed left the new ballet company in Seattle, just-retired principal dancer Melissa Hayden took over as the Ballet Mistress. A former Balanchine muse, Hayden stayed with the PNBA from 1976-1977.\(^7\)

In these early years, still a part of the Seattle Opera Association, the company managed to gather a small, but solid group of supporters for the association from throughout the Washington area. Performances of *The Nutcracker*, choreographed by Lew Christensen in 1975, served as one major contribution to the early success of the company. Christensen, recognized as a part of the infamous Christensen Brothers, was a premier danseur from 1935 – 1937 under the direction of Ballet Master George Balanchine of the


\(^4\) Winn, Steven. “Passings: They gave us the art, soul and strength. A tribute to those that left us.” *San Francisco Chronicle*, 12/26/06.


Metropolitan Opera’s American Ballet (now American Ballet Theatre). Next, having danced with Lincoln Kirstein’s touring Ballet Caravan from 1936-1940, Christensen was sent to join the forces during WWII. Upon his return in 1946 he was named Ballet Master for Ballet Society- (again, the former New York City Ballet) where he also danced leading roles for Balanchine and Kirstein. Christensen then became the San Francisco Ballet’s associate director, working alongside his brothers Harold (Director) and William (Artistic Director and Ballet Master) at the San Francisco Ballet. From there, Lew choreographed over 110 works for the SFB. With such a name and reputation, Christenson’s 1975 Nutcracker for the Pacific Northwest Ballet Association brought needed attention to the new company.

Nineteen seventy-seven marked the year the Pacific Northwest Ballet Association signed the incorporation papers to become its own organization under the new name Pacific Northwest Ballet. The artistic focus of the company and school changed yet again when Kent Stowell and Francia Russell were appointed Artistic Directors in 1977. Both had previous long and successful performance careers, including a distinguished reputation for their teaching and choreography throughout the ballet world.

Stowell began serious ballet training with William Christensen at the University of Utah Dance Department, where Christensen was director. In addition, Stowell later trained with Lew Christensen, George Balanchine, and renowned former Royal Danish Ballet principal-turned-

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instructor at SAB, Stanley Williams. Then in 1957, Stowell became a member of the San Francisco Ballet where he rose to principal in his first two years with the company. It was in 1962, at the age of 23, that Stowell joined the New York City Ballet with Balanchine. Here with the NYCB, Stowell danced in many of Balanchine’s works, partnering with every ballerina within the company, according to his biography. It was here that he met Francia Russell, a principal and later Ballet Mistress for Balanchine, who Stowell was to marry. Russell and Stowell married in 1965. The couple remained prominent in the teaching and performing realm of ballet.

Francia Russell, originally born in Los Angeles, California in 1938, began her dance training at the San Francisco Ballet, where her sister also studied. Russell’s father thought she also should study ballet. Throughout her early life, her family relocated many times. This gave Russell an opportunity to receive diverse training at many different institutions by several significant instructors. When the Russell family moved to Europe, Russell studied with Mathilde Kschessinska, the famous Russian ballerina who created the role of Kitri in Gorsky’s 1902 Don Quixote and was the first ballerina to do the 32 fouettes made famous in Swan Lake. The next move took her to London where the 12-year-old Francia studied with acclaimed dancer and instructor Vera Volkova -- former pupil of Agrippina Vaganova and influential Russian born ballet teacher and technician. It was

then, at age 14, that her family moved to New York where she studied with Benjamin Harkarvy and at the Joffrey. Though it was her dream to dance at Ballet Theatre, she was instead admitted to the School of American Ballet. At age 18, and after only three weeks at the school, Balanchine took her into the company. For six years Russell danced as a part of Balanchine’s City Ballet as corps member, then as a soloist. After a year dancing for Jerome Robbins in Ballets USA and a slight knee injury, Russell decided to branch out from ballet. She went to college and took a job as an editorial assistant. In 1964, Balanchine offered her a position as Ballet Mistress. She accepted the position, though she did not want to continue performing for Balanchine, as he had hoped. While at NYCB, Russell met Kent Stowell. The couple married in 1965.

After the couple’s marriage, Stowell taught and choreographed at Indiana University. He then moved to Munich in 1970 to dance and choreograph for the Bayerische Staatsoper -- now known as the Munich Opera Ballet -- while Russell moved to Germany to work as Balanchine’s representative abroad. Continuing to further develop choreographic and teaching skills, Stowell was appointed Ballet Master and choreographer for the Frankfort Ballet in 1973. It was in Germany that the couple first worked together. Russell and Stowell were appointed co-directors of the Frankfort Ballet in 1975 where for two years they choreographed and staged 80 performances and 60 appearances in Operas. Stowell choreographed a full length Swan Lake, while Russell jointly restaged the ballet’s Balanchine version. While still in Germany, the couple received an invitation from Leon Kalimos to move to Seattle, Washington. There the couple would become the Artistic Directors of the then Pacific Northwest Ballet Association. The year was 1977, and the couple packed up their three young sons and moved to Washington State.

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16 West, Martha Ullman. “Francia Russell: Holding Balanchine’s torch high-Former New York City soloist’s dedication to producing the works of Balanchine with her company, Pacific Northwest Ballet.” Dance Magazine, 9/94
Arriving at the new ballet company, Kent Stowell and Francisca Russell began to transform the dreary and ill-organized company into the now world-renowned ballet company and school. Along the way, the couple had to overcome many obstacles in order to gain the funding and recognition they sought for the company. Within the first year, Stowell wanted to create a buzz and excitement around the ballet *Coppelia*, which required funding for new sets and costumes. As later told to Seattle Opera Director, Glynn Ross, Stowell told a “bald-faced lie”\(^{17}\) to receive grant money. But, in the end, PNB received the money and turned *Coppelia* into a success. The annual budget of about $600,000 was increased to $1 million for the following year. This allowed the company to gain recognition in the area, which led to more grants and donations that helped the company grow.\(^{18}\)

In an ongoing attempt to create a stir in the ballet world, Stowell attempted to revamp the *Nutcracker* for the Pacific Northwest Ballet. Russell, meanwhile, thought back to her days of college when, just after performing with Jerome Robbins, she had worked as an editorial assistant at Publishers Weekly -- the same year Maurice Sendak published *Where the Wild Things Are*. She recalled having instantly thought of the author and illustrator for the position of new sets and costumes for PNB’s new *Nutcracker*.\(^{19}\) The production presently is performed each year and produces about one third of the company’s yearly income.

The Russell and Stowell collaborative team remained strong in Seattle for 27 years before the couple retired together in 2005. The transition to retirement began one year in advance of their final season with the company in 2004. The

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\(^{17}\) Bargreen, Melinda. “Retracing the First Steps of PNB.” *The Seattle Times*, 11/09/97


\(^{19}\) West, Martha Ullman. “Francia Russell: holding Balanchine’s torch high-Former New York City soloist’s dedication to producing the works of Balanchine with her company, Pacific Northwest Ballet.” *Dance Magazine*, 9/94
search for a new artistic director for the world-renowned company was a large undertaking. Throughout their leadership as Artistic Directors, choreographers and teachers, Russell and Stowell transformed the once small and nameless company into one of the world’s largest ballet companies with some 46 professional dancers, presenting around 90 performances a year, including a large full-length repertoire. In addition, the Pacific Northwest Ballet School, under Russell’s direction, contained a base of over 850 students. The school is modeled after the School of American Ballet, employing a complete training technique. Additionally, Stowell is attributed to having created more full-length ballets than any other American artistic director of a major company. Likewise with her work at the PNB School, Russell continued to travel to other companies throughout the world to restage Balanchine Ballets. Russell was one of the few people granted permission to restage Balanchine Ballets. She set the works on several companies including the Fort Worth Dallas Ballet, Milwaukee Ballet, as well as PNB, to name a few. She also became the first person authorized to travel internationally to set a Balanchine Ballet in 1988 at the Kirov Ballet in Leningrad (now St. Petersburg), Russia. As from previous evidence, it was important that the future of the PNB be carefully researched in order to find just the right person to continue the company’s success after Russell and Stowell. 

In was in 2005 that Peter Boal was named the new artistic director of the Pacific Northwest Ballet and ballet school. Boal was raised in Bedford, New York and began his dance training at the age of nine at the School of American Ballet. Going through the ranks of SAB, Peter joined the New York

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21 Kitzman, Judy and Callahan, Susan. “Pacific Northwest Ballet Announces Retirement of Longtime Directors.” Dance USA, 2/11/04
City Ballet company in 1983, and was later promoted to soloist in 1987. He was promoted to principal only two years later at the age of 24. Boal also was a teacher at SAB from 1997 to 2005 during his 21 full years of professional dancing with the NYCB. Boal also has performed with several other companies and directors in addition to the New York City Ballet, such as Ballet Arizona, The Metropolitan Opera, the Suzanne Farrell Ballet and many international companies in Norway and France. The new leadership with the Pacific Northwest Ballet has proven successful as the company’s repertoire and performance count continue to grow yearly. By bringing in new guest artists and choreographers, the PNB is branching out, reaching more audiences than ever.

From its beginning in 1972, the Pacific Northwest Ballet has grown from an idea to a nationally recognized ballet company. Through all the leaders, starting with Manager Leon Kalimos and dancers Janet Reed and Melissa Hayden, to the major contributions of Kent Stowell and Francia Russell, and now to Peter Boal, the one link that can be connected to each is the early training they received from other renowned teachers in the ballet world. A common theme from most of the directors and dancers throughout the history of the company is the major impact of George Balanchine with his School of American Ballet as well as the New York City Ballet. Many of the dancers and directors from the school received at least some training and performance time with


George Balanchine in New York. It was also Francia Russell who really began to help the school at PNB, which based technique and training ideas on the structure and technique of training at SAB under Direction of George Balanchine. Without such education and well-developed dancers, the Pacific Northwest Ballet would not be experiencing the success it is today. With informed and well-trained artists, the ballet continues to reach success and strive for new and impressive works from current repertoire to the classics as staged by Francia Russell and choreographed by Kent Stowell. The future will remain brighter than ever if the company continues to improve upon its successes with its talented and educated teachers and directors. It is clear that a solid foundation supported by talent and knowledge with determination can truly create and maintain solid success.
Works Cited


Ballet, San Francisco. Christensen Brothers. 09 November 2008
<http://www.sfballet.org/about/history/christensenbrothers.asp>.


<http://www.danceusa.org/PressArchives/pnwballet0402.html>


"Janet Reed." Online, Encyclopedia Brittanica. 2008. 08 Nov. 2008


Community and School:
Western Oaks Middle school is sixth grade through eighth grade. It is located in the Putnam City School District in Bethany, Oklahoma at 7200 NW 23 Street. It is a Title 1 school with 619 students with a student-to-teacher ratio of 12.9. There is an average of 24 students per classroom. Approximately 50 percent of the students at Western Oaks have free lunch and 12.5 percent receive reduced-cost lunches. The ratio of male to female is almost 50:50 at 1:1.2. The ethnic breakdown of Western Oaks is as follows: three percent of the students are Asian, 12.5 percent Hispanic, 17 percent African America, 60 percent Caucasian and 7 percent Alaskan/American Indian/other. Western Oaks is located in a “central city” but is technically located in Bethany, Oklahoma city limits. Bethany has a population of approximately 21,000.

Classroom:
Western Oaks Middle School is comprised of two buildings: the sixth grade is a self-contained building for core classes and two foreign language teachers who serve the entire student body. The 216 sixth-grade students are divided into two learning communities: The Tomahawks and The Chiefs. The classroom size is ample for our needs. The desks were arranged in rows upon my arrival, but I quickly moved them into groups of four. There is a whiteboard at the front of the class on the North wall and one on the East wall. There is a vast amount of maps in the front of the room. In two opposite corners, we have a classroom library that allows students to check out a wide variety of reading material as well as six globes and a multitude of geography-related posters on the wall. There is also a cart containing 30 Writers that can be used for word processing-type activities. The students have lockers in the hallway so there is no need to keep their coats and backpacks in the classroom. The school provided each
student with a textbook to take home as well as a set of classroom textbooks. This was done to reduce the need for children to lug around heavy books, and to thwart excuses for not completing assigned homework. There are three areas where there are filing cabinets for educational resources. One larger cabinet holds the materials for special projects and for teacher-created centers. There are only two computers in the room and a projector which allows for integrating technology. A social contract of descriptive words, which the students helped to prepare, is available at the front of the classroom for students to use at their discretion. The bathroom is three classrooms down the hall from my classroom. The classroom is next to an exit to the outdoors. Students need very little time to move from core class to core class. Our schedule allows for all core classes to be presented during first through fourth hour and elective classes, which are housed in the main building with the seventh and eighth grades, to be fifth and sixth hour. There is ample time available for students to arrive at an elective class punctually. With the foreign language teachers next door, students have ready access to help should they need assistance with their Spanish homework. The students are a tight-knit group and always feel comfortable learning with each other, which is good for a students’ overall learning experience.

*Students*: Students are in sixth grade and are 11, turning 12-years old. I have four classes with my largest class of 26 students. Ten of the students are males, sixteen are females. I have six Hispanic, 14 Caucasian, three African American, one Asian and one Indian. Of the six Hispanic students in the class, only three of them needed very limited adaptations in language development. However, the other three are students that are still progressing in academic language and, therefore, are attending an English Language Learners (ELL) class for additional support. Other activities may need to be used to help support learning, as well as learning some phrases of the students’ primary language. The students enjoyed the research aspect of the unit because they were allowed to incorporate a creative final product or a technical PowerPoint. There is a wide variety of learning styles in the classroom. All of my
students learned best when oral lessons were coupled with tactile work. A wide variety of learning modes should be explored to give a more balanced method of teaching. In order to assist all students with learning of responsibilities, there was a set location that included assignments that may have been missed previously in class. There also was a way for students to access the school’s parent conference Web site, which gave students access to their grades and lists of assignments. Western Oaks also incorporates something called “HOST” time as well as “WARRIOR” time where they work on character building activities, tutoring, “DEAR” time and free time so that the students may also catch up.

*Instructional Implications Addressed:*

As a result of the variety found within my classroom, I moved students into cooperative groups with a variety of abilities. For example, I grouped the students who frequently volunteer in class and those that rarely speak-up together. This was done to promote those that often answer questions to be required to work with others so that when groups were asked to present information, they had to work together to pick a spokesperson and which information to be discussed. This action worked quite well after the first day. They quickly learned to share equally in their small groups and then vocalize their findings as a cohesive unit. This process also was advantageous to the students that rarely speak out in class. They were thrust into communicating with their team members about a subject they all could handle. They worked it out that when they were required to speak to the class, they took turns, and by the end of the unit, they were vocalizing more freely, even when it wasn’t a small group presentation. My cooperating teacher was so excited to see those that usually did not vocalize and participate, choosing to answer and offer opinions or findings. I also found that students classified as ELL were learning meanings to vocabulary from their peers in discussion times. There are currently 26 students in the class that I selected to present in my TWS. They were chosen because they were the only class that had perfect attendance during the unit. Because of the majority of the class that functions on a medium to higher level, my instruction varied with them. They were able to participate in
group discussions with little prompting from me. They were very spirited in their discussions. I also feel that while they were a majority of on target or higher functioning class, they were able to have more opportunities for small group time and were able to stay on topic with limited reminders.

**Disaggregation of Students High, Medium and Low**

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<th>Student</th>
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**Unit Learning Goals and Objectives**

As a district, I was told that Putnam City has combined the Priority Academic Student Skills (PASS) objectives for sixth and seventh grades. Sixth grade is the study of world cultures, and seventh grade is the geography of those cultures. They have divided it by hemispheres: the sixth grade studies the world culture and geography of environments located within the western hemisphere and 7th grade studies the eastern hemisphere. To view the PASS objectives that I accessed to plan my unit of instruction on the Rainforest of South America, visit the Oklahoma Department of Education Web site.

**District Goal:** Understanding the geography of the western hemisphere and the world culture associated with people and environments of the western hemisphere.
Content Knowledge:

Goal 1: TSWBAT: Assess facts of South America and the rainforest and its inhabitants.

Goal 2: TSWBAT: Identify and locate the tropical rainforest and its layers on a map of S. America.

Skill/Performance Objectives:

Goal 3: TSWBAT: Develop and use map skills to find political and physical features of S. Am. and use latitude and longitude.

Goal 4: TSWBAT: Illustrate and create the varied physical features found in South America.

Goal 5: TSWBAT: Describe the various physical features of the Rainforest and its inhabitants.

Reasoning Objectives:

Goal 6: TSWBAT: Use deductive reasoning to identify animal inhabitants of the rainforest using physical characteristics.

Goal 7: TSWBAT: Recognize key facts regarding the rainforest.

Goal 8: TSWBAT: Determine and arrange qualitative and quantitative facts over the rainforest.

Goal 9: TSWBAT: Identify and illustrate researched data on the rainforest.

Goal 10: TSWBAT: Research and present facts collected of an animal of the S. American Rainforest.

Goal 11: TSWBAT: Discuss, evaluate and develop solutions of the worldwide implications associated with the deforestation of the rainforest.
<table>
<thead>
<tr>
<th>Type of Assessment</th>
<th>Learning Objective</th>
<th>Format of Assessment</th>
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</thead>
<tbody>
<tr>
<td>1. Pre Assessment</td>
<td>TSWBAT: Recognize and identify facts about S. Am., the rainforest and its inhabitants.</td>
<td>20 question test Multiple Choice T/F</td>
</tr>
<tr>
<td>2. Formative Assessment</td>
<td>TSWBAT: Illustrate and create the varied physical features found in South America.</td>
<td>Cooperative group project hand constructing an example of the landforms of S. America</td>
</tr>
<tr>
<td>3. Formative Assessment</td>
<td>TSWBAT: Use deductive reasoning to identify animal inhabitants of the rainforest using physical characteristics</td>
<td>Find Me game - where animals and their characteristics were each placed on a self-checking note card and students reasoning to match them</td>
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<tr>
<td>4. Formative Assessment</td>
<td>TSWBAT: Determine and arrange qualitative and quantitative facts over the rainforest.</td>
<td>Qualitative and Quantitative fact sheet</td>
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<td>5. Post Assessment</td>
<td>TSWBAT: Recognize and identify facts about S. Am., the rainforest and its inhabitants.</td>
<td>20 question test Multiple Choice T/F</td>
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</tbody>
</table>
Pre-assessment:

The pre-assessment strategy included a twenty-question test. I gave the students a multiple choice and T/F test that was based on statistical information over the Amazonian Rainforest and South America. Students were encouraged to think about the possible answers and to eliminate any that they did not feel would be an accurate fact of the rainforest and South America. I also used this statement of encouraged: “It’s okay to not know it all on a pre-assessment. The goal is to do activities that will help you to gain the knowledge necessary to answer the same questions at the end of the unit.” This statement seemed to lower students’ anxiety about the pre-test.

Formative assessment:

In general, the formative assessments were something that I did daily when I had students in class. Every time we had a discussion in class, I was kept a checklist of the times students’ called out answers or made a point during discussion. When keeping this list, if I had not heard from a child during instruction, I made it a point to go around the room and engage them in a conversation about the topic at hand and their thoughts on the matter. The first real formative assessment came in my instruction when my classes brainstormed in small groups and then completed the K-W of a K-W-L chart for both S. Am. and the rainforest and presented their findings during discussion. They were able to provide popcorn answers about what they knew about each of the two. This was an important step for me because the students were able to help in the guidance of which direction they wanted to go with what we were required to learn. In addition, we watched a video where they were to observe the information and determine qualitative and quantitative fact statements about S. Am. and the rainforest. Students who needed adaptations wrote fewer fact statements. This allowed for greater variety in responses and for students to really show what they learned. These assessments both helped to assess interests as well as the schema. My formative assessments consisted of observations done during class and small group discussions – exercises that will assess retention of material taught. I will also be formatively assessing my students during each learning activity to monitor for comprehension. I
assigned a creative presentation of an animal found within the rainforest or S. Am. They did a Web-quest and presented with a PowerPoint or a creative depiction of their choice. The assessments aided me in adapting my lessons and accommodating for better student learning.

Post-assessment:

The post assessment will consist of the same multiple choice pre-test that the students took to see if the information presented during lessons was effective in increasing their expertise of the subject matter. As in the pre-test, students who need additional support are given extra help from the cooperating teacher or me. If 80 percent of the students score 80 percent or better on the test, I will know the students have mastered the topic. If 60 percent of students score less than 80 percent, I will need to spend more time on the topic. I will need to conduct more formative assessments to make sure that students comprehend the information during instruction, and more time on topics individual students do not understand during free time. Additional materials and extensions, which focus on other learning styles and various levels of intelligence, are possible adaptations in re-teaching this unit to students who need additional instruction.
Attachment

Instructional Design

Disaggregation Chart of Pre-Assessment and Post Assessment

<table>
<thead>
<tr>
<th>Test Question</th>
<th>District Or Unit Objective</th>
<th>Missed on Pre-Assessment</th>
<th>Percent of students who have prior knowledge of the skill</th>
<th>Missed on Post Assessment</th>
<th>Percent of Students who have mastered skill</th>
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**Pre-Assessment Analysis**

Based on the disaggregation of the data presented in the chart above, each question on the pre-test showed improvement after instruction and is reflected on the scores of the post test. I learned that they all were familiar with the fact that rivers had many tributaries, as seen in question 13. I also note that several of the objectives were mastered with 100 percent. Based on a class size of 26, each child will count as 3.8 percent of the whole class. I set my personal goal, as an educator, to get 80 percent of the students – which would be 20 students – to achieve an 80 percent on the exam, and if 60 percent of students – which is 16 students – score less than 80 percent, then I will know that I need to spend more time on that topic. Based on those numbers of the pre-assessment, I spent my time focusing on those skills. There were only six questions that I could state were mastered as prior knowledge, or a very good guess.

Overall, I felt this unit was a success. The students made gains from assessment to assessment. They had fun with the activities. Never did I hear groans or question about why we had to do this during the activities. The students were always excited to enter the room. Often, they asked me, “What are we doing today?” I had requested them to bring me toilet paper rolls, paper towel tubes and empty wrapping paper tubes for a final activity to end my time there. Since they had been taking CRT’s during my last week and a half, our unit is basically over at this point. I will organize centers with which they could use to have fun and continue their learning since there is not a sixth grade CRT for geography. My final Friday, they will have a Rainforest Party with Rainforest punch, cookies and rain sticks made from the tubes they brought, aluminum foil, rice, popcorn, beans and wax paper. They don’t know it yet, but they have been asking throughout the unit, “What are we doing with those paper tubes?” I think they will be excited to create another item of their own. They will be asked to design the construction paper covering that will encapsulate the rain stick to reflect something they learned or enjoyed about this unit.

The following unit is part of a four-week instructional unit for sixth grade students. South America and its
Inhabitants of the animal world is the main area of focus. Over the four-week period, students will gather and interpret data about South America and all of the animals that are native to the rainforest. Here is a sampling of the learning objectives, instructional activities and the assessments used during the course of the unit.

<table>
<thead>
<tr>
<th>Time</th>
<th>Learning Objective</th>
<th>Instructional Activities</th>
<th>Assessment(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1</td>
<td>TSWBAT: Recognize and identify facts about S. Am., the rainforest and its inhabitants.</td>
<td>Pre-Test 20 question multiple choice and true false test</td>
<td>Pre-Assessment for baseline of prior knowledge</td>
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<tr>
<td>Day 2</td>
<td>TSWBAT: Understanding the geography of the western hemisphere and the world culture associated with people and environments</td>
<td>Brainstorming prior to KWL Chart</td>
<td>Formative Assessment done by listening to students brainstorming with their groups, and when they filled in their KWL</td>
</tr>
<tr>
<td>Day 3</td>
<td>TSWBAT: Describe the various physical features of the Rainforest and S. America</td>
<td>We watched a video describing the varied landforms of S. America</td>
<td>Formative Assessment was done by showing them pictures after the video where they had to identify the correct landform</td>
</tr>
<tr>
<td>Day 4</td>
<td>TSWBAT: Illustrate and</td>
<td>We used salt dough and the students worked in</td>
<td>Summative assessment</td>
</tr>
<tr>
<td>Day</td>
<td>TSWBAT: Determine and arrange qualitative and quantitative facts over the rainforest.</td>
<td>Qualitative/Quantitative Fact Finding Mission</td>
<td>Formative assessment done by checking for understanding of facts found in video</td>
</tr>
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<tr>
<td>8</td>
<td>TSWBAT: Use deductive reasoning to identify animal inhabitants of the rainforest using physical characteristics</td>
<td>Find Me – Animals were written on one card color coded for self-checking characteristics on another and locate correct animal</td>
<td>Formative assessment done as students used deductive reasoning to identify animals and their characteristics</td>
</tr>
<tr>
<td>Day 9</td>
<td>TSWBAT: Identify and illustrate researched data on the rainforest.</td>
<td>The students did a webquest search of a selected S. American/Rainforest animal from the Find Me Game.</td>
<td>Formative assessment was used to determine if the students were able to locate and collect information on the data sheet pertaining to the specifics of their animal.</td>
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<tr>
<td>Day 10</td>
<td>TSWBAT: Develop and use map skills to find political and physical features of S. Am. using latitude and longitude.</td>
<td>Map activity. They used a student atlas to locate geographical features of S. America and then identified the latitude and longitude of a select few.</td>
<td>Formative assessment was used to determine if the student could locate features on the map and then determine the latitude and longitude of those features.</td>
</tr>
<tr>
<td>Day 18</td>
<td>TSWBAT: Discuss, evaluate and develop solutions of the worldwide implications associated with the deforestation of the rainforest.</td>
<td>Small/Large group discussion. As we met for class, I posed several questions about the footprint man was leaving on this earth as well as recalling facts learned in the video from the first week about water, oxygen and resources of the rainforest. We broke</td>
<td>Formative assessment was used by determining participation and presenting the group findings on the issue they were asked to present.</td>
</tr>
</tbody>
</table>
into small groups discussing the issues presented and back into large groups for presentation of their findings.

| Day 19 | TSWBAT: Research and present facts collected of an animal of the S. American Rainforest. | PowerPoint or Creative Alternative presentations of the animal they selected. | Summative; they provided a product of a powerpoint or creative outlet of choice |
| Day 20 | TSWBAT: Recognize and identify facts about S. Am., the rainforest and its inhabitants. | Post Test was the same 20 question multiple choice and true false test | Post Assessment was summative because they were scored on their content retention |

**Instructional Design Plan**

This unit was designed to build upon knowledge already acquired and to increase awareness and connection to the activities from the previous day. It would not make sense to add in a lesson on the fur-trading of Alaska just because we were talking about animals being smuggled out of South America at alarming rates. The activities that I planned practiced a wide variety of learning strategies. I required them to perform different tasks. We had kinesthetic, auditory and visual activities. I also incorporated activities that tapped into their critical thinking abilities. I believe that all of the activities were well within range for the sixth-graders to perform. I would say that they fell within the zone of proximal development. The activities required explanation, but they were able to perform them with limited guidance from me while accessing themselves and their peers. We also had many opportunities as a large group to hold discussions.
ranging from animal smuggling, renewable resource usage, and deforestation of rainforests. As individual small groups, they made a list of things that each person could do to limit the footprint they are making in this world. They also came to the conclusion that at the rate that we are losing rainforest trees, the oxygen supply will become more and more limited. It was also evident by getting them to think critically on several issues, that they were involved in their own learning. They were searching things in the news at home to bring back to discuss as a class. They also became involved in their own learning when they did research on their own time to gain a better understanding of their individually-chosen and researched animal. We used a variety of technology. I had a projector with internet access, overhead projector, computer lab time, laptops for each child in the classroom – united streaming videos really made some of the issues come to life for each of the students. They were able to see the Amazon River flow, and hear the sounds that the animals made in their natural environment. I also used an interactive PowerPoint with a jeopardy-like game, which I created for them. The adaptations within the classroom really were limited during this class. I had three ELL students, but only two of them functioned on a limited level. When I assigned them groups, they were with higher level students that encouraged participation. I also would read and describe things for them or let them restate the task to check for their individual understanding of the assignment at hand. In two of my other classes, I did have students with challenges. I had a student with autism and one that was hearing impaired. In order to accommodate those students with different needs, I did several things. My hearing impaired student is a high-functioning student. But to make her feel more connected with me as her educator, and her feel as a valued member of my class, I pulled out my sign language book and learned several ways that I could communicate with her when her translator was not present that day. With the student with autism, he tended to get off topic quite frequently and preferred to work alone due to his integration problems with other students. He has been quite slow to warm up but I did receive a hug from him after our PowerPoint presentations. I was quite elated. To modify
for him on the PowerPoint presentation, I typed in the questions that he was supposed to answer on the correct slides and they opened text boxes for him to type his answers. He was free to search and place his pictures. I created for him a step-by-step card that he could refer to for the correct sequence of keystrokes to copy and place pictures. He did very well with his PowerPoint as well as creating a poster to display a painting he made of the Macaw; his animal of choice. I feel that by allowing the students a choice they are more invested in the assignment. They have more control in it if they are interested in what they have chosen. You can see their eyes light up as they become excited on a certain issue or topic.

**Analysis of Learning Results**

In this section, I will be writing about the entire lesson planning process and the decisions I had to make along the way. Consider safety, equipment, special concerns, timing, etc.

I feel that my lessons both engaged and excited students in aspects of South America and the rainforest. I approached the K-W-L chart, pre-assessing what students already knew and what they wanted to know. This is how I set up the instruction for the unit. While there were a couple of lessons that were not necessarily weak, they maybe could have received a more in depth or different approach with some of the other classes. With this class, I rarely needed to make adaptations, although I had a few times where I tried to re-read the unit instructions to help students better understand them. One factor that weakened the final lesson plan was the involvement of parents and them not really understanding why their child needed to bring an empty cardboard tube. Parents are an integral part of their child’s education and this could have been resolved with a note home.

I worked with the cooperating teacher and the geography teacher from the other team. We had a lateral meeting every other day during my time there. I worked in conjunction with them on the creating of lessons. When we worked together, we had to share some of my self-prepared materials on different days. Several of the creative portions of my lessons
were items that I will leave there as a service project for my cooperating teacher.

I do think time was an enemy during my second placement. I think that had I been given more time with the students, accounting for the time when I was first there during the placement while they were finishing Canada, then we had a week for Spring Break and four days for Benchmarks and now with the interruption of our classroom time with CRT’s, I feel that I could have done a better job. With the students changing classes every 50 minutes, and ‘housekeeping’ duties of roll call and signing student agendas with daily assignments written in them, etc. I feel that in order to get through all that I wanted to cover and all my students wanted to learn, I had rush presentations and turnaround time for their activities. I think we would have felt a bit more knowledgeable about the skills we were learning and practicing if we could have done them at a slower pace. I would have liked to have had the opportunity to incorporate travel brochures as well as the animal inhabitant research. I would have had the students select a country in Latin America and research it as if they were trying to get their peers to visit. But due to other grades utilizing the computer labs and the mobile laptop labs in preparation for CRT’s online, we didn’t have the time that we would have liked.

I was very pleased with the results of the individual students. They each showed an increase from the initial pre-assessment to the post assessment. When I disaggregated the data of the two identical assessments, I did found that only five students did not score an 80 percent or higher on the test. With those five, it came out to only 15 percent. So, 85 percent did score an 80 percent or higher on the exam. I was very pleased with that. While I was happy with the group as a whole, I also brought each student up one at a time and praised their efforts during my time there. I had them recall how grumbled they were when they first took the pre-assessment and how disappointed they were with their scores. I showed them the post test and explained their percentage of increase and how that correlates to their direct effort.

I do feel that the multitude of assessments, both formative and summative, were capable of showing the students that
their better grades were directly related to their attitude and participation in classroom activities. Motivation is so difficult at this level, and I feel that they were really excited about pleasing me. I had several of them tell me, “We want your teacher to see how good we are doing with you.”

Reflection of Teaching and Learning

In this section of my student teaching TWS, I will discuss the entire teaching and learning process. Although it was a difficult task to take on, as well as difficult to put into words on paper, it really did provide me with the black and white proof that the items we teach need to be informational and fun. We can’t just teach something that is fun and expect that our students will be able to acquire a skill. Our lessons need to be meaningful and thorough. Our students need to be able to see the value in the lesson and the material being presented. My students were moved by the link between the deforestation of the rainforest and how that will directly affect them in the future in regards to oxygen supplies, medicines that can be found within the rainforest flora and the fresh water supply the rainforest provides the world. This class also wanted to delve into the issue of global warming when we touched on the effects of El Niño on the ocean waters and the livelihood of many of the people, especially in South America. They seemed to be divided with more of them supporting the belief that it was a cyclic occurrence and that this all happened in the past before the ice age and would all happen again once we were gone.

I believe that was pretty analytical thinking on the part of a sixth-grader, with minimal input from me. In this placement, I acted more of a guide to them during their journey of exploration. When I was in the first placement, my first-grade class needed more involvement. I enjoyed the different learning abilities that the sixth grade afforded me. I was able to sit back in our large group discussions and toss out questions that would spark some thought provoking ideas. They ran with it. It was awesome to watch. You could hear the buzz and excitement in some of their voices as they learned and discovered things they were interested in within the realms of South America and the Rainforest.
They loved their fact finding missions with the computers. I provided them with school appropriate websites to access so that they could find details and present their findings with their small group. There were a lot of “look at this” or “oh, cool, check this out” comments. I really saw how more engaged they became when the topic direction was guided by them. They were the masters of their own ships on several tasks. These are the ones they responded to with exceptional enthusiasm.
## Attachment

### Learning Gain Worksheet

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<th>Student</th>
<th>Pre-Assessment Score</th>
<th>Post Assessment Score</th>
<th>Point of Gain/Loss</th>
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</tbody>
</table>
Credits and Thanks

Chad Carman’s mentor is Pierre Cyr, Department of English.

Jessica Casselman’s mentor is Dr. Helen Gaudin, Department of Biology.

Leia Eubanks mentor is Stacey Rogers, School of Dance & Arts Management.

Mary Elizabeth Godfrey’s mentor is Dr. Cory Gavito, School of Music.

Chandra Kroll’s mentor is Dr. Kent Buchanan, Department of Biology.

Chris Morrow’s mentor is Dr. Richard Johnson, Department of Political Science.

Zachary Newland’s mentor is Dr. Richard Johnson, Department of Political Science.

Rebekah Potter’s mentor is Dr. John Starkey, School of Religion.

Jenny Rice’s mentor is Stacey Rogers, School of Dance & Arts Management.

Andria N. Robbins and Laura L. Sabolich placed first in the social sciences category at the 2009 Undergraduate Research Day. Their mentor is Dr. Amy E. Cataldi, Department of Psychology.

Kate Stringer placed first in the music category at the 2009 Undergraduate Research Day. Her mentor is Dr. Cory Gavito, School of Music.

Sara Treadwell’s mentor is Dr. Alan Seals, Department of Economics.

Mischa Yandell’s mentor is Dr. Lois Lawler-Brown, Department of Education.