INDUSTRIALIZATION AT THE CROSSROADS OF TRADE AND CONFLICT

By

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Abstract

This paper will examine the liberal peace theory as postulated by Immanuel Kant in *Perpetual Peace*. Specifically this paper will examine the theories surrounding how democratization, membership in intergovernmental organizations and free trade influence and reduce the likelihood that conflicts between states will reach the point that violence is utilized as a means of solving them. In addition, through the use of empirical data this paper will analyze in what manner, if any, an advanced economy influences the manner in which democratization and trade reduce the likelihood for violent conflict; with an advanced economy being defined as one that is heavily industrialized. This paper will demonstrate the pacifying role that the very act of industrialization plays in world affairs and provide clues in which manner these four variables may be used to bring about a lessening of the threat of global war.
Industrialization at the Crossroads of Trade and Conflict

Introduction and Background Information

Since the end of World War II the world has experienced an unprecedented level of economic growth. Millions have been lifted out of poverty by the increasing industrialization of nations ranging from Brazil to China. However, the threat of war still looms over the heads of many in the world. Though multiple theories have been proposed on what factors limit the likelihood of violent conflict between nations, few of these take into account the direct effects of the increasingly industrial global landscape, and how this may influence the likelihood of conflict between the various nations of the world. However, before new work can be done examining this factor, it is crucial to examine the current ideas dominating the landscape.

The previous work in the field of international interactions can by and large be broken into three main streams of thought: liberalism, realism, and Marxist ideologies. The first of these, liberalism, first appeared in its infant stages during the period of the enlightenment in Europe. Liberalism focuses around the connections between the states and how these connections can foster peace between nations. Many of the Liberal ideas have become entrenched in western society, such as democratic values, the importance of international institutions and the value of free trade (Barbieri 2005). These three aspects of Liberalism are best ensconced by Kant, and will be examined through the lens of Kant's essay, Perpetual Peace.

The next of these ideologies is Realism, which focuses on the nature of the international system as inherently anarchic. In Realism anarchy is meant to refer to the fact that there is no outside power that can enforce its will upon the state, the state is the largest and only significant player in the international system (Leashing 2007). This structure of independent states first came around with the Peace of Westphalia in 1648. The two main characteristics of the agreement that brought about this
peace would come to define the international system for centuries to come. First, nation-states had
defined territory, and second within their defined territory nation-states were free from interference
from outside powers. According to Realism, these nation-states are by nature self interested and will do
whatever they can and must to defend themselves and increase their own individual prosperity. As a
result, this constant vying for increases in defense and prosperity naturally leads to war between states.
This is due to the realist argument that states will attack their neighbors in order to ensure their own
continued security to gain access to further territory and resources (Barbieri 2005). This constant back
and forth fairly aptly describes Europe pre-WWII, with the great nations constantly fighting each other in
order to increase or secure their own relative position in the international system (Findlay 2007). The
key point of realist thought is that international organizations, trade, and democracy are not capable of
guaranteeing peace. Realists will argue that since nation-states will always put their individual best
interests as their main priority it makes no difference which type of government any nation operates
under, it will operate in roughly the same manner. Second, international obligations and trade relations
will also not help to foster peace between nations. This is due to the fact that if at any time an
advantage can be had by rejecting the organization, or by ending trade contacts, then the nation will do
so in order to secure its international position (Barbieri 2005).

The final means of examining international relations is through the Marxist lens. With this view
point the states operate in such a manner as to better the dominant class. This view point pays far less
importance to trade than a Liberal view. A Marxist would argue that trade may actually exacerbate the
likelihood of conflict since trade can cause great imbalances in society and between nations. When
these imbalances reach a tipping point then a conflict is highly likely to occur due to anger from the
dominated classes (Barbieri 2005).
Though all three ideologies have their reasoning for why they are the correct theory, this paper will operate under the Liberal assumption that international organizations, democratization, and trade do promote peace in the world. This viewpoint helps explain much in the modern world, but in order to fully understand its roots it’s crucial to go back to the enlightenment thinkers who first arrived at these ideas.

One of the most influential men in this field, and particularly influential to the modern institutions of the world, is Immanuel Kant. In Kant’s essay, *Perpetual Peace*, he outlines the three key points required for there to be a lasting, aka perpetual peace, over the entire world. Kant’s three points are, “The civil constitution of every state ought to be republican,” “The public right ought to be founded upon a federation of free states,” and “The cosmopolitical right shall be limited to conditions of universal hospitality” (Kant).

The first of these points has in the modern age come to refer to the requirement of all states in the international system being democratic states. The argument for this that Kant puts forward is that by having a Republican government, the whole collective of the population is involved in the decision to go to war, and as such the individuals bearing the cost of the war, the average citizens, are the ones making this decision (Kant). Kant wrote in the 18th Century, a time in which Europe was dominated by Kings and Queens. Kant felt these leaders were too far separated from the people to fully appreciate the decision of whether or not to go to war. They were not the ones at the forefront fighting, and they were not the ones whom needed to make sacrifices in order to fuel the war effort from rationing food, to rationing other luxuries. The Kings and Queens lived much as they had lived whether a war was occurring or not, thus their decision to fight was detached. The common man though would be the one bearing the full brunt of the hostilities. This meant that those that had to fight the war, would make the
decision of going to war. Kant felt this would severely limit the nation-state’s willingness to go to war. In the modern age this theory is referred to as the “Democratic Peace” (Russett 2001).

The second of Kant’s pillars has come to be interpreted as Intergovernmental Organizations, or IGOs, such as the United Nations. By having various governments come together to decide the best course of action for the global community, it was thought that war could be mitigated through promoting mutual interests. It is hardly ever in a nation’s best interest to go to war if there is some other manner in which a dispute can be solved. Wars are costly in both resources and loss of life, as such, by providing a new avenue through which to resolve potential disputes before they turn violent Kant thought that the eruption of armed conflict would become increasingly rare. It is this concept that guided Woodrow Wilson when he lay out the groundwork for the League of Nations, and it is this concept that eventually motivated the formation of the United Nations following WWII (Russett 2001).

The final pillar of Kant’s warless world is concerned with increasing hospitable interaction between the diverse peoples of the globe. Today’s scholars have interpreted this as an argument for the facilitation of free trade. It is argued that by allowing free trade more people are allowed to be made better off through peaceful means. Business instead of war would guide the global acquisition of resources. Next, by facilitating trade and contact between the diverse peoples of the world the global community gets to interact with one another, and get to know one another. The thinking being that one is much less likely to attack someone with whom they have personal contact with, than they are a stranger with whom they have no bonds. Thus trade facilitates the creation of bonds between the worlds’ people allowing them to get along more harmoniously (Russett 2001).

These three concepts have guided much of American policy since the end of World War II. The United States has consistently championed the claim for the increased democratization of the world in line with Kant’s first pillar, for instance in post WWII the US helped to rebuild Europe as a purely
democratic region. The United States laid the groundwork for the United Nations in order to facilitate the second of Kant’s pillars (Findlay 2007). Finally, the United States has always been a champion of free trade, always attempting to open up new markets to its products, with such American brands as Coca-Cola being world renowned. Thus the 20th Century was in many ways defined by the Kantian principles. Yet, though the post WWII 20th Century was defined by these principles, the question remains; do they truly bring about peace?

It is of no debate that since these post WWII institutions were put into place no other major wars on the scale of WWII have occurred. Realists would argue that wars were less frequent in this time period for two main reasons. The first is the development of nuclear weapons. With the United States and the USSR both in possession of nuclear weapons, war would have been catastrophic. This policy of Mutually Assured Destruction kept the two main powers of the system at this time from going to war, since any war would have annihilated both nation-states (21 debated, 2004). Second, the rest of the countries in the world didn’t fight because they were roughly divided into one of the two sides, both covered by one of the great powers nuclear umbrella (Findlay 2007). This, it is argued, is what kept overall conflict to a minimum level. This argument, though appearing sound at face value ignores strong empirical evidence that there is a connection between the liberal Kantian principles and the maintenance of a peaceful global community.

A book which examines the Kantian principles and the affect they have on a global peaceful community is *Triangulating Peace*. This study undertaken by Russett and Oneal will form the foundation for my own later empirical research. This study covers in detail the relationship between democracy, trade, and international commitments in the maintenance of a global peaceful environment.

*Triangulating Peace*, through the use of empirical data and well thought out models demonstrates that increased levels of democracy do have a negative correlation on the likelihood of a
violent conflict occurring. This provides strong evidence that the democratic peace does exist. An important caveat to the nature of the democratic peace is that it only occurs among paired democracies. The evidence concerning the democratic peace implies that democracies as a whole are not simply more peaceful than autocracies. Instead they are only more peaceful when both members of the dyad are democratic (Levy 2004).

There is a possible reason for why the democratic peace operates only among paired democracies. The concept is that in paired democracies the debates concerning issues of mutual interest are more open. Democracies have their political debates in public view; the things they choose to do are bound by public opinion and as such are covered in detail by the media. Due to this fact when two democracies are engaging they are each more likely to believe that what the other leader is saying and will know beforehand his or her political limits. There will be no reneging on deals made; as such there is a more prominent environment of trust in all negotiations conducted which facilitates peaceful interactions (Braumoeller 1997). Autocracies on the other hand do not hold their political discussions in the open, as such there is less trust when they are negotiating with other nations since the exact thoughts and limits on the autocratic leaders are not known. This lack of trust makes a peaceful solution far less likely, increasing the likelihood of a violent conflict.

This democratic peace may also be explained away by the economic gains made in the industrialized countries. One study examines the difference between dyads composed of democratic industrialized nations, as characterized by Western Europe and dyads composed of less economically advanced democratic dyads. This study shows significant evidence that the advanced democracies, aka those of Western Europe, have a much stronger correlation between their peace and democracy. Whereas, those democracies which are less advanced economically show a higher propensity to use conflict to resolve their disputes. The argument made is that economic development plays a large role in
how willing states are willing to use violence to resolve their disputes with one another (Mousseau 2000). This study is particularly interesting in how it relates to the influence that general industrialization may have on the factors that influence the international system.

The next pillar that Triangulating Peace examines is the affect of membership in IGOs has on the likelihood of conflict. This once again agrees with the concept of a Kantian peace, with the results demonstrating that within a dyad the more mutual organizations two nations are involved in the lower the likelihood of conflict between the pairs in the dyad. Though relevant to the study of Kantian principles and their relevance to avoiding conflict between states, this paper does not involve itself with the role of intergovernmental organizations for reasons that will be examined later. There are various reasons for why membership in these organizations may lower the likelihood of conflict, some discussed by Kant and previously stated. Other hypothesized reasons are that these organizations may provide something as simple as a location for national leaders to meet and discuss issues, thus allowing the members to peacefully come to agreements on various issues that cause disagreement (Russett 2001).

The final aspect of the Kantian pillars that Triangulating Peace, addresses is the affect trade has on the likelihood of conflict occurring between states. When examined trade is shown to be statistically significant in lowering the likelihood of violent conflict between states (Russett 2001). This is further strong evidence that the final Kantian pillar hold true. Trade between nations has an appreciable effect on lowering the likelihood of two nations engaging in violent conflict. However, this claim is one of the most contentious of the variables. Some say trade connections are the most important aspect of the Kantian peace while others claim that trade has no appreciable impact on the likelihood of a violent conflict occurring. As Kant said, trade increases the contact between peoples of diverse cultural and national backgrounds. This may mitigate harsh feelings allowing the diverse nations to discuss issues more calmly with less animosity, promoting a “global culture” (Russett 2001). However, such a
statement is difficult if not impossible to measure and analyze. Thus, more material concerns are often proposed for the relation.

The most generally accepted concept behind why trade would lower conflict is that it builds mutual economic dependency. By continuing to trade extensively for various goods, both nations are able to achieve larger overall economies than they could on their own, as described by Adam Smith (Smith). As this trade continues both of the nations begin to depend on this trade and construct institutionalized channels through which to deal with conflicts related to this trade. This dependency means both nations are hesitant to do anything that would disrupt this trade, such as engage in a violent conflict. This dependency gets to a point that both nation-states eventually view the positive benefits of the trade that is taking place as far more worthwhile than any possible gains that could occur due to a violent contact. Since both trade and war cannot occur at the same time in any expedient manner, a militarized conflict would cause great harm to this trade. Furthermore, in order to facilitate this trade, new institutions need to be developed to help manage this trade. These institutions then become apt at diffusing conflict peacefully. Since one of the potential causes for war, as stated above, is the desire to increase national power through resource acquisition, it is easy to follow through on this postulation that if the same resources could be obtained in a more expedient and cheaper manner than a military threat or endeavor then a rational state would readily do so (Russett 2001). Another argument for trade and peace is that the vast majority of business is by its very nature peaceful. Stores require peaceful times in order to sell their goods, and people need to feel at peace in order to shop. As such, promotion of trade interests leads to corporations who by their very nature desire a peaceful environment, they will then use their economic power to help promote further peaceful endeavors (Mertz, 1984).

However, there are arguments against the influence of trade. Many realists will claim that the studies that find a statistical significance with trade are by their very nature flawed and they will either
offer a different form of regression by which to test the data (Kim, 2005) or they will propose a different method by which to test for which variables should be regressed (Goenner 2005).

Some studies describe a higher dependency as having a positive coefficient. The reasoning is that when two states are actively involved with one another through trade, differences can and will arise over the distribution of the benefits. The argument, following Marxist ideology, is that one party naturally benefits more proportionally than the other party. This imbalance naturally leads to conflicts between the parties in an attempt to rectify what the party receiving the smaller percentage of benefit sees as an injustice (Barbieri 2005).

To the other extreme one argument made concerning trade is that as trade increases, then this brings prosperity, as prosperity is brought, then democracies are allowed to form more readily (Weede 1996). This argument though lacking a formal empirical analysis is relevant to this paper due to its involvement of democracy, trade, and most importantly the variable of economic development as represented as prosperity.

Hypothesis

The previous section by no means addresses all of the theories within this field, simply some of the most popular and relevant for the world today. Currently the two most popular theories regarding conflict are those of Liberalism and Realism. Realism had long been the most popular of the theories concerning international behavior, with individuals such as Machiavelli being one of its largest proponents (Russett 2001). Since the beginning of the Westphalia System, nations have clearly operated in a manner which serves their individual best interests. They would invade another nation when it served prudent, and frequently engage in battles. Realism perfectly matched the Europe of the day, with kings, queens, and in Machiavelli’s case, Princes, leading the affairs of Europe.
However, when the ideas of liberalism first came to fruition, they were not meant to describe the world as it currently was, yet instead the world the way it could potentially be while still taking into account the manners in which people and states react. Adam Smith perhaps put these new ideals best, stating that humans are naturally self-interested, yet through self interest all of society would gradually work towards progress and the betterment of all of society (Smith). In a similar manner, Kant outlined a way in which human beings could maintain their self-interest and individuality, while progressing towards a more peaceful world. This concept was in stark contrast to the emperors through the years, some who claimed to be wishing to bring world peace in the guise of all falling under a common flag. Arguing that only when everyone was under one common rule, and controlled could peace and prosperity happen. The concepts of Liberalism were in stark contrast, saying freedom, choice, and the fact that cooperation yields tangible benefits, would allow war to become obsolete.

Democratic government would allow those that fight the wars to vote for whether or not they happen. Here self-interest would prevent conflict, since individuals naturally do not wish to endanger their lives, the lives of their children, or squander their national resources in an endeavor they feel is not absolutely necessary. This fact has been demonstrated time after time in democratic political debates, with sides having a lively debate on the merits and detriments of engaging in war. These opposing views help to make engaging in war for democracies far more politically costly than in any autocratic regime.

Kant states that involvement in international organizations would lower the likelihood of conflict between states. In Triangulating Peace this is demonstrated to indeed be true, though it would be useful to reanalyze this data, it will not be done in this paper for two key reasons. First, and most importantly, finding the sum of mutual IGOs that both sides belong to was all but impossible using the data set that was assembled through EUGene. Second, though this particular data set may not have been available some other measure of IGO activity could have been used. However, the only data found
was one of overall IGO involvement, not of mutual membership in IGOs between the two dyads. These two figures represent drastically different figures and work to test different hypothesis. The data used by Russett and Oneal tests for whether belonging to the same organizations does facilitate peace through contact between the nations, and providing a possible peaceful outlet for disputes. The data that was available was an overall IGO membership for each state. This doesn’t test for contact between the dyads since both states may potentially have a large number of memberships, yet belong to different groups. This overall IGO measurement is more similar to a measure of openness, or how engaged in the global community the individual country is. Though it may have interesting results, the point of this paper is to examine the effects of variables on unique dyad pairs on the likelihood of violent conflict, not to view overall trends to openness that cross dyad pairs.

Finally, and of crucial interest to this paper, is Kant’s insistence on trade as decreasing the likelihood of trade between nations. Russett and Oneal found that trade did have a negative correlation on the likelihood of conflict. Of particular importance is the caveat by Mousseau that economic development has a hidden negative correlation towards the likelihood of a violent conflict when his study showed that more economically developed democracies are more peaceful than less economically developed democracies. This particular paper raises an interesting concept of the relationship between dependency, democracy, and economic development.

Mousseau is not the only one to have raised the prospect of an intersection between the three. Thomas Friedman, The New York Times Correspondent, and the scholar Michael L. Ross, both took a unique interest in this particular intersection when it involves countries with large oil deposits. The data from the study demonstrates that as the prevalence and price of oil rises, there is a negative correlation with the level of democracy within the nation (Ross). Thus, more oil that can be sold for more money, means movement away from democratization and freedoms. The reasons proposed for this are
numerous. One idea is that large oil deposits that can be sold for large quantities of money help to fill the coffers of the government which owns the deposits. Because of this, the government is able to engage in two behaviors that lessen the push for broadened freedoms and possible democratic reforms. The first is the removal or severe lowering of taxes on citizens (Friedman 2006). The American Revolution was run about the slogan, “No Taxation without Representation.” As such these oil rich, and thus money rich countries run this mantra in reverse, “No Taxation, No Representation” (Friedman 2006). This alone seems unlikely to be the sole reason for this lessening of freedoms, so in addition to the first point is the greatly enlarged state coffers allow for the ruling class to hire additional security forces. These additional security forces are then better able to monitor the citizenry, break up dissent groups, and keep a general tab on the activities within the society, making sure that no one engages in behavior that may threaten the position of the government (Friedman 2006). As can be seen in totalitarian societies past and present, a robust and well funded police force is essential to maintaining control.

A final possible reason for the decrease in personal freedoms, in addition to the first two reasons, may simply be that freedom simply becomes no longer as important to the overall well being of the state. When flooded with money from large oil deposits, this money can be used to build roads, provide services, and fund defense. As such, less importance is placed on the freedoms necessary in order to empower the citizens of the nation so that they are economically productive. If all of the state’s vital needs can be provided by selling a resource and the ruling class can live comfortably through this money, empowering the populace to be more productive in order to provide the money for these state needs through tax revenue seems as a secondary concern (Friedman 2006).

Though the main focus of the study was oil, there is evidence that this process can occur with any nation that experiences a surplus of natural resources. When this occurs there is a noticeable drop
in manufacturing sectors in each of these nations. The main focus of the national economy becomes the collection and export of the particular natural resource they are gifted with at the expense of their other industries. In this sense these countries are observed to “de-industrialize.” This process has been referred to as “Dutch disease,” with various reasons as to why this occurs being proposed. From increases in the exchange rate making industrial goods less globally competitive, to simple comparative advantage encouraging the nation to focus on what they can provide that no other nation can as efficiently.

Though, the process of becoming more autocratic would lead one to believe that violent conflicts become more common as the conflict lessening effect of the democratic peace would be weakened. This should not be the case in such a situation. In fact, these nations should theoretically become less likely to engage in violent conflicts as this process continues. This is due to an increasingly significant effect of the trade they engage in. As these nations switch to purely export oriented economies and de-industrialize, two complementary effects take over. First, these nations need peace in order to easily and efficiently export their natural resources. Though a dispute may yield a temporary boost to revenue through a price shock, in the long term conflict is against the states interest. A full out war would cut off their only true source of national revenue; this would starve the government and endanger the regime in charge. As such, true conflict would want to be avoided. Second, the money flowing in creates great wealth for the nation, or at the very least those in the ruling class. Since the nation de-industrializes, or simply doesn’t participate in any further industrialization, the only place to purchase manufactured goods is from other nations. This further lessens the likelihood that these nations will engage in a violent conflict, since such a violent conflict could and most likely would cut off a readily available source of manufactured goods. Thus nations going through this process may be less democratic, but have higher dependency on trade due to their need for national revenue, and their wish
to purchase goods. Thus, although the autocratic score may increase, the effects of trade will theoretically more than make up for this slack.

With these considerations in mind, I will run a regression similar to that present within *Triangulating Peace*. It will be similar to the regression within this book for two key reasons. First, it provides a readily available model and data structure by which to test the caveats to the regression I am adding. Second, by running a regression that is based on a regression that is already run and extensively edited, I can be readily sure of any errors in the data, model, or possibly software used. This will allow me to jump right into analyzing the results I am presented with.

The regression I will run will examine the relationship between democracy, industrialization, and dependency, with particular focus on the intersection between industrialization and dependency. I will examine what statistically significant effect, if any is present when trade is made to account for the level of economic development or industrialization in a country. I expect to see a variation in dependency based upon the level industrialization within the dyads that is statistically significant, and overall lowers conflict. Secondly, due to Mousseau’s research I will also attempt to see if the level of overall economic development has its own influence on whether or not a nation engages in conflict, with the consideration based upon this study that increased level of development lowers the likelihood of conflict.

**Explanations of Data Used in the Regressions**

The data used for this logistic regression was acquired with the use of EUGene, a data management tool designed for quickly constructing data sets used for empirical analysis of nation-state data. The data set drawn from the EUGene data base was constructed in such a manner as to provide as close an approximation to the original Russett and Oneal data set as possible while still accounting for new measures needed that were not available within the original data sets. To do this a non-directed
dyad-year data set was created using only politically relevant dyads. The main caveat of *Triangulating Peace* is that it examines only politically relevant dyads. Unlike some research that looks at the examinations between all nations, this book only examines those groups of two nations that either are contiguous on land or across a small distance of water, or in which one of the members is a great power. A great power being defined as a state that has the ability to extend its economic and military power. Thus, the United States, the USSR, and other European powers would be considered great powers whereas nations unable to do such are only paired with their neighbors. In this way the authors had hoped to control for pairs that would skew the results due to them having no likely political interaction.

A non-directed dyad-year data set constructs a data set, listing both nations’ country codes, ordered by interaction through each distinct year, with the data requested listed for both nations. In order to match the data tested in *Triangulating Peace* the years selected were 1885 to 1991.

The significant variables in this study start with the variable “dispute1.” This value is the Correlates of War Militarized Interstate Disputes (MIDs) as used by Russett and Oneal. Like them, I lagged the variables by one year in order that the effects influencing the MID were measured, instead of the effects of the MID influencing the variables. Since they are lagged one year it is reasonable to assume that these values are the result of, or at least influenced by the variables in the prior year. This is as sure of a way that cause and effect can be established by using this data set. It is important to note that this is a dummy variable, with 1 representing a MID and 0 representing the absence of a MID.

The next variable of importance is the value “allies3.” This variable matches the “allies” variable from *Triangulating Peace*. It too is a dummy variable, with a 1 representing some type of peace agreement between the two nations, being a full out treaty, to an entente.

Next is the “distance” variable, this is a relative measure of the distance between capitals of the dyads and potentially relative cities and ports. It does not precisely measure up with the measure of
distance as measure in *Triangulating Peace*, yet it will assist in controlling for the effect of distance on the likelihood of conflict. It’s not disputed that the farther away two nations are, the less likely they are to engage in conflict, thus this must be controlled for in all regressions.

The next variable is “demlow,” this mirrors the previous regression in that it runs from the value -10 which represents a total autocracy, to 10, which represents a total democracy. Furthermore, as in the *Triangulating Peace* the lower of the two nations’ dem score is the one chosen as this variable. The argument being that it is the least democratic member of the dyad which makes a MID more or less likely. This assumes the absence of an alternative “autocratic peace” which there is strong evidence against that suggests there only exists a democratic peace (Levy 2004). Thus, I will use “demlow” just as Russett and Oneal.

Finally, the variable “dependlow” is used to measure the effect of trade on conflict as a value of dependency. The “depend” values that play a part in determining this variable were gained directly from EUGene as part of a Russett, Oneal data set. This value is calculated by determining the overall trade going between these dyads, and then dividing this number by each nation’s respective GDP. This measure shows how important this trade is to that particular nation’s overall economy. “dependlow” is then calculated by taking the lowest of these two values. It should be noted that this value often belongs to the more prosperous of the two in the dyad, for instance in almost all instances that the United States is involved, this value belongs to the United States. Thus, this can almost be said to be a measure of the dependence of the wealthiest and most likely, the more powerful of the two members of the dyad. In addition, this measure does its best to not only represent overall trade numbers, but is an attempt to demonstrate the overall level of interdependence. It is this interdependence of nations that is often argued to have the most important effect on conflict (Keohane 1977).
In order to verify that data set is correct and in order to have a comparison once my alterations to the regression are made, I first run these variables on their own. The printout from this logistic regression in STATA is included below:

```
. logit disputed allies3 distance demlow dependlow
```

| Iteration 0: | log likelihood = -6139.8827 |
| Iteration 1: | log likelihood = -5992.6056 |
| Iteration 2: | log likelihood = -5619.7961 |
| Iteration 3: | log likelihood = -5616.6112 |
| Iteration 4: | log likelihood = -5616.5989 |

Logistic regression  
Number of obs = 38040  
LR chi2(4) = 1046.57  
Prob > chi2 = 0.0000  
Log likelihood = -5616.5989  
Pseudo R2 = 0.0852

| Coefficient | Std. Err. | z | P>|z| | 95% Conf. Interval |
|-------------|-----------|---|------|-------------------|
| disputed    | -4.024571 | .069781 | -5.77 | 0.000 | -4.1925 | -3.85658 |
| allies3      | -0.003432 | .000036 | -25.45 | 0.000 | -0.0037 | -0.00316 |
| distance    | -0.0573101 | .0054646 | -10.49 | 0.000 | -0.06802 | -0.04659 |
| demlow      | -0.0005615 | .0000885 | -4.28 | 0.000 | -0.0011 | -0.00006 |
| dependlow   | -2.534212 | .0350179 | -46.06 | 0.000 | -2.64204 | -2.42637 |
| _cons       | -2.534212 | .0350179 | -46.06 | 0.000 | -2.64204 | -2.42637 |

As can be seen from the printout above, the result of this logistic regression closely aligns with the original regression as done by Russet and Oneal. The coefficients are slightly different, yet still all are in the appropriate direction, with p-values of <.000. The slight difference in coefficients can easily be explained by slight differences in the sample used for this regression, and that used by Russett and Oneal. These differences are required however in order to properly test the hypothesis. Since the coefficients are relatively close, go in the proper direction, and are highly statistically significant this data set will be used in order to test my hypothesis.

First, in order to properly test the hypothesis there needs to be some measure of industrialization that can be used to measure various nation-states by. This value must be accurate first and foremost, and second must be available for the entire data set. Thankfully, the COW project has such a measure within the National Material Capabilities measure. This measure is designed to measure
the overall capabilities of each nation, for each year that it is in the database. This measure is composed of six distinct aspects that are mathematically factored together in order to yield a single score. These six individual aspects are: energy consumption, iron and steel production, military expenditure, military personnel, total population, and urban population. The only two measures which may potentially be of use in determining the level of industrialization are energy consumption and iron and steel production. However, energy consumption is not considered to be an accurate category due to significant portions of this data missing, thus iron and steel production will be used.

Iron and steel production increase as a natural part of industrialization, the more industrialized a nation the more iron and steel that are needed for the various aspects of its economy. Thus this measure can provide not direct evidence, but indirect evidence of the level of industrialization that a nation is at in a given year. However, it is crucial to account for the difference between highly industrialized small countries, and sparsely industrialized large countries. Thus, to take this distinction into account, I have divided the total iron and steel production by the nation’s total population. This will give a per capita iron and steel production and as such should be a fairly accurate measure of industrialization. This variable is named “irstpop.”

In order to do a regression to see whether industrialization has any effect on the occurrence of MIDs it is important to first decide which “irstpop” value to use, since there are two for each dyad, each representing a separate nation. In order to cover all the bases I will create three new variables “irstpopdepend,” “irstpoplow,” and “irstpophigh.” “irstpoplow” and “irstpophigh” are self explanatory with the former being the lowest “irstpop” value in the dyad and the latter being the highest. “irstpopdepend” is a more complicated variable. This variable is the “irstpopdepend” of the nation with the highest level of dependency. The reasoning behind this variable is that since “dependlow” is the significant dependence in the dyad, it is this country that has the biggest influence on whether or not
conflict will occur. Thus, as the least dependent country is being influenced about whether or not a MID will occur, if this value is significant it will show that they do actually take into account the level of industrialization the other nation has reached.

Below, the original logistic regression will be rerun three times using each of these three new variables once; we will then analyze the results.

```
. logit dispute allies3 distance demlow dependlow firstlow
```

```
Iteration 0:  log likelihood = -6139.8827
Iteration 1:  log likelihood = -5692.2097
Iteration 2:  log likelihood = -5618.9464
Iteration 3:  log likelihood = -5615.6367
Iteration 4:  log likelihood = -5615.6242

Logistic regression                         Number of obs   =       38040
                                               LR chi2(5)     =     1048.52
                                               Prob > chi2    =  0.00000
                                               Log likelihood = -5615.6242
                                               Pseudo R2      =  0.0834

```

|        | Coef.  | Std. Err. |      z  |     P>|z| | [95% Conf. Interval] |
|--------|--------|-----------|--------|--------|-----------------------|
| dispute | -.4019448 | .0697949 | -5.76  | 0.000  | -.5387403 -.2651493  |
| allies3 | -.0003421 | .0000137 | -25.00 | 0.000  | -.0003689 -.0003153  |
| distance| -.0585426 | .0055405 | -10.37 | 0.000  | -.0684019 -.0487833  |
| dependlow| -28.53146 | 6.51101  | -4.38  | 0.000  | -41.2928 -15.77011   |
| firstlow| .3393237  | .2383574 | 1.42   | 0.155  | -.1278483 .8064956   |
| _cons  | -2.555237 | .057255  | -44.63 | 0.000  | -2.667455 -2.44302   |
```
. logit dispute1 allies3 distance demlow dependlowirsthighb

Iteration 0:  log likelihood = -6139.8827
Iteration 1:  log likelihood = -5682.0683
Iteration 2:  log likelihood = -5602.1094
Iteration 3:  log likelihood = -5594.6912
Iteration 4:  log likelihood = -5593.4993
Iteration 5:  log likelihood = -5593.4709
Iteration 6:  log likelihood = -5593.4709

Logistic regression
Number of obs = 38040
LR chi2(5) = 1092.82
Prob > chi2 = 0.0000
Log likelihood = -5593.4709
Pseudo R2 = 0.0890

| dispuet | Coef.  | Std. Err. | Z     | P>|Z|   | [95% Conf. Interval] |
|---------|--------|-----------|-------|-------|----------------------|
| allies3 | -0.4078889 | 0.0699234 | -5.83 | 0.000 | -0.5449362 to -0.2708416 |
| distance| -0.0003222 | 0.000141 | -22.86 | 0.000 | -0.0003498 to -0.0002945 |
| demlow  | -0.0508686 | 0.0055999 | -9.17 | 0.000 | -0.0618858 to -0.0400914 |
| dependlow| -23.424447 | 6.390796 | -3.98 | 0.000 | -37.93999 to -12.88844 |
| firsthighb | -6.289389 | 1.322331 | -4.76 | 0.000 | -8.881111 to -3.697668 |
| _cons   | -2.404414  | 0.0588661 | -40.85 | 0.000 | -2.519889 to -2.289139 |

. logit dispute1 allies3 distance demlow dependlow firstpopdepend

Iteration 0:  log likelihood = -6139.8827
Iteration 1:  log likelihood = -5679.2991
Iteration 2:  log likelihood = -5603.3373
Iteration 3:  log likelihood = -5600.3106
Iteration 4:  log likelihood = -5600.3012

Logistic regression
Number of obs = 38040
LR chi2(5) = 1079.16
Prob > chi2 = 0.0000
Log likelihood = -5600.3012
Pseudo R2 = 0.0879

| dispuet | Coef.  | Std. Err. | Z     | P>|Z|   | [95% Conf. Interval] |
|---------|--------|-----------|-------|-------|----------------------|
| allies3 | -0.4105532 | 0.0690494 | -5.87 | 0.000 | -0.5476514 to -0.2734549 |
| distance| -0.0002213 | 0.0000141 | -22.89 | 0.000 | -0.0003438 to -0.0002938 |
| demlow  | -0.0522447 | 0.005568 | -9.38 | 0.000 | -0.0631579 to -0.0413316 |
| dependlow| -26.3909 | 6.385464 | -4.13 | 0.000 | -38.90618 to -13.87562 |
| firstpopdepend | -7.163942 | 1.471093 | -4.87 | 0.000 | -10.04723 to -4.280554 |
| _cons   | -2.414938  | 0.0588798 | -41.01 | 0.000 | -2.530341 to -2.299338 |

The first regression utilizes the value “firstlow,” where it is found that this variable is not statistically significant, the p-value is .155, it is generally considered in statistics that any value over .05 is not considered statistically significant. Thus, this regression is thrown out as not adding any new value.
to understanding. However, both of the two other regressions show statistical significance. "irsthigh" and "irstpopdepend" both have a p-value of less than 0.001.

First, "irsthigh," this measure being statistically significant shows that the more industrialized one of the partners in the dyad is, the less likely conflict is to occur. This at first seems like an important find, yet in reality this general fact is not disputed. The most industrialized nations within the world do engage in conflict less readily in the modern era. Western Europe being the main case in point, these nations all are highly industrialized yet do not fight. Regardless, this data does coincide with the evidence put forth by Mousseau that industrialization and advanced economies have a separate impact from that democratization and trade in preventing conflict. Though that is difficult to see since this data doesn’t show the industrialization level of the "irstlow" dyad partner.

Second, "irstpopdepend" is shown to be statistically significant in reducing conflict. This implies, as stated earlier, that the least dependent member in the dyad (as stated; most often the wealthiest) considers the level of industrialization when "deciding" whether or not to force is required. This too at first seems significant, but just as in "irsthigh" this most likely just once again showing that industrialized nations are not likely to fight each other, for various possible reasons. Since the one with the lowest dependency is often the wealthiest, it would stand to reason that the country with the lowest dependency would also be as, if not more industrialized than that with the higher dependency. Thus “irstpopdepend” can be explained as simply measuring the interaction between industrialized nations, further providing evidence towards the idea that they do not fight each other and are less likely to fight each other than other nations controlling for variables such as democracy level; once again adding evidence to the study by Mousseau.

Since the level of industrialization does seem to have an effect, we will examine it even further, this time in light of the information concerning natural resource based economies. In order to test this,
first a variable must be created that will account for the difference in levels of industrialization. This variable will be called “irstdifference” and be an absolute value of the difference in two countries’ “irstpop” variable. Thus, a 0 will mean no difference in industrialization, whereas a positive number will be a difference in the levels of industrialization. The next variable to be created will be the value “irstdepend” this will be the “irstdifference” times the “dependlow” it will be used to measure significance that “irstdifference” has on “dependlow.” Its full usefulness will be explained later.

The regression run using these new variables is shown below:

```
. logit dispute1 allies3 distance demlow dependlow irstdifference irstdepend
```

| Iteration 0: | Log likelihood = -6139.8827 |
| Iteration 1: | Log likelihood = -5676.8878 |
| Iteration 2: | Log likelihood = -5596.0038 |
| Iteration 3: | Log likelihood = -5583.5368 |
| Iteration 4: | Log likelihood = -5579.7296 |
| Iteration 5: | Log likelihood = -5576.0492 |
| Iteration 6: | Log likelihood = -5573.63 |
| Iteration 7: | Log likelihood = -5573.5879 |
| Iteration 8: | Log likelihood = -5573.5853 |
| Iteration 9: | Log likelihood = -5573.5853 |

Logistic regression

<table>
<thead>
<tr>
<th></th>
<th>Number of obs = 38040</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LR ch12(6) = 1132.59</td>
</tr>
<tr>
<td></td>
<td>Prob &gt; ch12 = 0.0000</td>
</tr>
<tr>
<td></td>
<td>Pseudo R2 = 0.0922</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Log likelihood = -5573.5853</th>
</tr>
</thead>
</table>

|         | Coef.  | Std. Err. | z      | P>|z|   | [95% Conf. Interval] |
|---------|--------|-----------|--------|-------|----------------------|
| dispute1 | -0.4079357 | 0.0700164 | -5.83  | 0.000 | -0.5451653 to -0.270706 |
| allies3  | -0.003063 | 0.000144  | -21.28 | 0.000 | -0.0030346 to -0.000281 |
| distance | -0.0484035 | 0.055739  | -8.68  | 0.000 | -0.1093281 to -0.087488 |
| demlow   | -0.1130968 | 0.430335  | -2.52  | 0.012 | -0.2831121 to 0.056973 |
| dependlow| -0.012043  | 0.181738  | -0.57  | 0.000 | -1.308225 to -0.651707 |
| irstdifference | -0.1134221 | 0.051985  | -2.75  | 0.006 | -0.280788 to -0.046753 |
| irstdepend | -2.373110  | 0.057789  | -41.06 | 0.000 | -2.486385 to -2.259853 |

Note: 190 failures and 0 successes completely determined.

Two things are noticed; with these new variables included the “dependlow” variable is no longer statistically significant with a p-value of .129 which is greater than .05. Furthermore, both of the new variables are statistically significant with “irstdifference” having a p-value of less than .000 and
“irstdepend” having a p-value of .006, well below the cut-off of .05. Thus, when these two variables are added the “dependlow” on its own stops being significant, replaced by the new variables.

The meaning of this can be explained by using some basic algebra:

\[ M_{ID} = \beta_1 (dependlow) + \beta_2 (irstdifference) + \beta_3 (dependlow \cdot irstdifference) \]

\[ M_{ID} = (\beta_1 + \beta_2 (irstdifference))dependlow \]

\[ \beta_1 = -11.30968 \ & \beta_2 = -163.4221 \]

\[ M_{ID} = (-11.30968 - 163.4221 (irstdifference))dependlow \]

This formula shows is that what matters when determining the value of the “dependlow” coefficient is a negative coefficient of -11.30968 that stays constant across the board, and the coefficient -163.4221 times the value of “irstdifference” or in other words the absolute difference in industrialization. Thus, this model shows two things: First, an increase in dependency does result in a reduced likelihood for conflict between nations. Second, the pacifying effect of dependency gets stronger as the industrialization levels of the nations within the dyad differs by a larger and larger amount. To demonstrate this effect the coefficient for “dependlow” in the formula above is calculated using the min, median, max, and mean of the “irstdifference” variable, in that order, below:

\[ M_{ID} = (-11.30968 - 163.4221(0))dependlow \]

\[ M_{ID} = (-11.30968)dependlow \]

\[ M_{ID} = (-11.30968 - 163.4221(.187896))dependlow \]

\[ M_{ID} = (-42.0160389)dependlow \]

\[ M_{ID} = (-11.30968 - 163.4221(18.14018))dependlow \]
As can be seen by calculating these four values for the coefficient of the “dependlow” variable when taking into account the level of industrialization, it can be clearly seen that the greater the difference in the level of industrialization, the greater the effect a given level of dependency has on the promotion of peace.

Conclusion of Findings

Now that the data has been gathered, regressed, and analyzed, what does it mean for all practical purposes? Most importantly, does it support the arguments made in the hypothesis?

In order to answer this question the regressions involving the “irstpop” variable must be observed, in particular, the “irsthigh” and the “irstpopdepend.” Both of these variables were found to be statistically significant in relation to their role on a dispute occurring in the following year. Yet, they are both formed differently and represent slightly different measures. If we first examine the impact of “irsthigh” it states that the higher the largest value of industrialization is, the less likely conflict is to occur between the dyad. Thus, any member in the dyad being industrialized reduces the overall likelihood of a MID occurring. This seems to imply that general industrialization reduces conflict. If “irstpopdepend” is examined it states that if the most dependent nation in the dyad is more industrialized, then a MID is statistically less likely to occur between this pair of states in the next year.

Both of these variables provide evidence that overall increasing levels of industrialization make war less likely to occur. However, this peace obtained from industrialization is distinct from the peace facilitated by democratization. The “demlow” variable remains significant through both regressions with
the coefficient hardly changing. Thus they are not measuring the exact same thing, namely the industrialized western nations. Democratization and industrialization are providing unique influences towards peace, yet are by no means responsible for the same “peace” between industrialized democratic nations. This data strongly demonstrates that the there is a unique benefit that is conferred on a rising level of economic development, as in implied in Mousseau’s study.

In order to answer the main question of this paper, the relationship between economic development and trade, the final regression that was run shall be analyzed. The final result of this regression yields the formula:

\[
MID = (-11.30968 - 163.4221(irstdifferenc))dependlow
\]

This formula, derived in the previous section, shows quite plainly that dependence across the board is significant while still accounting for the other Kantian variables. But much more interestingly it shows that if there is a wide difference in industrialization the effect of a given amount of dependency will be much larger than if both states are at similar or the same level of industrialization.

This data closely matches what could could occur due to the fact that one of the nations is demonstrating the effect of the so called, “Dutch disease.” This hypothesis fits rather nicely with the data. As states become more and more based on an economy being fixated around the sale and exportation of a natural resource, they become progressively less industrialized, or at the very least, stop continuing to industrialize further. This would very clearly result in a large difference in industrialization between nations, with the industrialized nations buying the raw materials be it oil, natural gas, or any other number of goods from the less industrialized producer nation. Two nations trading in this manner would logically have a higher dependency coefficient than nations of comparable industrialization levels. Once again, the reasoning behind this goes to Adam Smith, and his concept of the division of labor (Smith). Instead of applying to individuals, this concept can be seen as applying to
the interactions between these two states. The producer state needs the industrialized state for the money it gets from the transaction, and for manufactured goods, since the producer state’s own industrialized sector has withered and is no longer capable of producing these goods. On the other hand, the industrialized nation is very clearly getting raw materials that it could otherwise not get on its own, or that it could not produce on its own for cheaper. Industrialization requires raw materials in order to continue production, and as such the industrialized state begins to depend more and more on the less industrialized state and vice versa. The less industrialized state gets the raw materials, the more industrialized state purchases them, uses them in the production of various products, and then the less industrialized state purchases these products in order to sustain or increase their standard of living. This cycle becomes self reinforcing, increasing the effect of dependency as time goes on.

In contrast, when two states are both highly industrialized or both highly underdeveloped, the effect of dependency would theoretically be not nearly as strong. This is due to the fact that the states in a dyad such as this are both capable of producing comparable goods at comparable prices. This is due to the fact that two underdeveloped states are not able to trade long distances unless it is with a great power. This means their main trade will be with either a great power, which will be highly industrialized and yield the “first difference” benefit, or it will be with a close neighbor. Since close neighbors often have similar environments both in climate and natural resources, the goods they can trade with one another are highly similar. Thus, trade will help lessen the likelihood of a MID but it wouldn’t bring about the same level of dependency as diverse products would offer. Furthermore, if two highly developed nations are trading, they can most often produce similar goods due to similar know how and levels of technology. Also, they are likely to have similar wage structures, since industrialization leads to an overall increase in wages. As such, the only trading partners that would yield a substantially different product would be a less developed nation. Some evidence of this can be seen in developing nations that produce goods for the developed nations due to lower wages in these countries than in the developed
ones. Furthermore, some nations have a product that is simply hard if not impossible to get elsewhere and that is incredibly important to industrialized nations, namely oil. The United States and many oil producing nations arguably have a relationship of this nature, in which the United States purchases oil, which is so vital to the United States economy that the dependency coefficient rises considerably.

The data is further interesting what is not happening, which one ideology would expect based on the data. The Marxist ideology would assume that as this difference gets larger, then the likelihood of a MID occurring would increase. They would argue that since the more industrialized nation would get the majority of the benefit due to first, their disproportionate power, and second, their control over access to the more valuable manufactured goods, that this would result in class tensions between the haves and have-nots that would result in conflict between the two nations. This however is empirically shown to be false. Instead, it appears that all parties are benefiting in so far as the likelihood of the dyad engaging in a MID drastically decreases as the disproportion increases. One side, or the other, or both is able to realize some appreciable benefit from such transactions so as to very noticeably increase the weight that dependency has on the relationship. Neither side is threatening violence in such a situation.

Regardless of the complete reasons for the data showing what it does the results of this data analysis do have meaningful impacts towards the field of international relations. First, it demonstrates that industrialization and democratic institutions both provide distinct benefits towards the promotion of peace between states in the current global structure. This is good because it allows for some breathing room in the application of efforts to industrialize the world, and to democratize the world. Since both confer benefits individuals in foreign policy have some leeway in which manner they encourage and support states as they develop and modernize going into the 21st century. Though Mousseau argues that that developed democracies behave differently from developing democracies, with developed democracies being less likely to engage in conflict. This is not because developing
democracies are inherently “not as good” as developed democracies; it is because both democratization and industrialization confer distinct benefits towards peace. With the effects of democratization becoming progressively better year after year for new democracies (Hensel 2000). Thus, as these states do develop the industrialization effect will begin to take effect. This is important because it means that states don’t need to develop and become democracies simultaneously in order to enjoy benefits of being less likely to engage in violent conflicts.

Furthermore, of particular importance is the role of China in modern American foreign policy. China is very clearly not currently moving towards being a democracy with any great haste. Thus America does need to worry if a potential conflict is imminent. As the data suggests, although being a democracy would confer a very significant decrease in the likelihood of conflict in the US-China dyad, the simple act of industrializing seems to confer a positive benefit towards the likelihood of peace continuing in this dyad under the current world structure. With the main caveat being under the current world structure, in the years leading up to WWII, it was the most industrialized nations that began the conflict. This data however is lacking from the analysis, due to problems with data collection during the time. The same data is missing from Triangulating Peace. Though, WWII is such a unique and important moment of the 20th Century that it has its own studies leading to its various causes that will not be gone into further detail here. Suffice to say, excluding WWII, industrialization lowers the likelihood of conflict.

Thus in closing, global industrialization should continue to be one of the main goals of the international community. It not only has the power to lift millions out of poverty and give them a fair shot at life across the globe, it also has empirically been shown to play a role in lessening the likelihood of war between states. Though underdeveloped states may not be likely to engage in MIDs with more developed states, the likelihood of conflict is unaffected if both states are undeveloped. As such the continuing push for democracy and for industrialization that has characterized the policy of the United
States should continue. Not only that the citizens within these diverse countries may experience the benefits of increased political and social freedom that democratization brings, and may experience the rising living standards that come from an industrialized advanced economy. But also so that the world is made a less violent place through both of these conflict mitigating mechanisms, so that one day Kant’s “Perpetual Peace” may become a reality.
Works Cited


