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Interdependence, ‘the spirit of commerce’, and natural resources

Are they compatible?

Bachelor’s thesis – Project on The Democratic Peace Thesis

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Introduction

Much of the academic debate on the causes of peace and war centers around three main liberal explanations: democracy, economic interdependence, and international organizations contribute to the realization of peace. Immanuel Kant was one of the first liberal philosophers on peace and war, and his work is still a starting point for theorists and researchers. From Kant onwards, a lot has been written about the explanations of, and the approaches to peace and war.

Making a connection between the explanations of regime type and economic interdependence is the first point of this research. After the empirical finding that democracies promote peace (as a phenomenon), because they do not fight one another, a lot of research centers around the underlying causes of this phenomenon. Hereby, the lack of specificity and explanation of the mechanisms are often viewed as the theoretical 'puzzle', the starting point of research. However, this research focuses on the liberal economic explanation for peace: economic interdependence, or mutual economic dependence between countries promotes peace.

The focus of this research is on the (lack of) specificity of liberal economic interdependence theory. If more intense mutual trade relationships promote peace, does it make any difference for this theory which commodities are traded? In other words, does the nature of the traded goods play a role in interdependence theory? Where liberal theory essentially is silent on this issue, the realist objection to interdependence theory centers around goods with a specific nature: goods that are vital for every state.

Just like the phenomenon of the democratic explanation of peace (democratic peace theory), it is quite easy to prove or disprove the phenomenon of economic interdependence and peace. Where many researchers agree on the presence of the phenomenon, at the same time it is quite obvious that countries want to secure the production of certain commodities at home, for example when it comes to food and fuels supply. Especially energy, with its unequal natural distribution around the globe, is important for economies to survive, and for people to live. Therefore, energy can be considered as 'vital good'.

This research focuses on the role of natural resources in interdependence theory. Interdependence, 'the spirit of commerce', and natural resources: are they compatible? Where interdependence theory argues that mutual economic dependence promotes peace, and where 'the spirit of commerce' (a term of Kant) refers to trade relationships, the driving force behind interdependence, the central question is: Are these elements compatible with trade in natural resources? This is a relevant question, both from the perspectives of theory and policy. If the peace-promoting effect of interdependence theory is not applicable to trade in natural resources in particular, the general theory of economic interdependence needs to be revised. At the same time, it makes current trends toward self-sufficiency in certain commodities much more understandable. On the other hand, the effects of trade in natural resources are in line with the general theory, another explanation has to been found for the propensity of many states to be self-sufficient with regard to certain commodities.

The results are based on a regression analysis on the basis of a data set of 512 dyadic observations of conflict (ranging from threat to war) between 1992 and 2001. The results first of all show that the direction of the general explanations of democracy and interdependence are in line with the theory, but that the direction of trade in natural resources is not the other way around (as hypothesized). Furthermore, with the current best possible measure for natural resources dependence, there is no statistical significance for this predictor, and neither for the model as a whole.

Liberal theories on peace and war

In international relations, there is a lot of theory and research on peace and war. Liberals and realists, among others schools, argue about the underlying causes of peace and war. Liberalism comes up with a comprehensive approach to the issue of peace and war, with three components. The first is institutionalism, or international organizations. The second approach is democracy, or republicanism. And finally, (economic) interdependence is the third liberal theory on the realization or maintenance of peace (Hayes, 2012, p. 769; Heywood, 2011, p. 62). Together, these liberal approaches form the 'Kantian tripod' or 'Kantian triangle (Hayes, 2012, p. 769), resulting in the 'Kantian peace' (Hayes, 2012, p. 769; Russett & Oneal, 2001, p. 35).

In his famous work, 'Perpetual Peace' (1795/2004), the German philosopher Immanuel Kant described how peace could become reality in international relations. The first section contains six preliminary articles aimed at the perpetual peace among states, and they are directed at states. First of all, a peace treaty may not allow any secret reservation that can be used as a reason for future war. Secondly, any independent state should not be acquired by another state through inheritance, exchange, purchase,

or gift. Thirdly, standing armies should one day be abolished. Fourthly, national debts with regard to foreign state affairs are forbidden. Fifthly, state interference with the constitution and government of any other state is forbidden (the idea of sovereignty). Finally, hostilities should take place within a certain framework of mutual trust, in order to prevent the impossibility of trust in the future peace (Kant, 1795/2004, pp. 55-59; Kant, 1795a).

In the second section, Kant discusses the three definitive articles on perpetual peace among states. Firstly, every state should have a republican constitution, with the underlying principles of freedom, dependence, and equality. Secondly, Kant argues for the law of nations that is based on a federalism of free states. And finally, the law of world citizenship should be limited to the conditions of general hospitality (Kant, 1795/2004, pp. 64, 69, 74; Kant, 1795a). Where liberal institutionalism and democracy have had attention at this point, economic interdependence has not been explicitly discussed. This issue, the relation between 'the spirit of commerce' and peace is discussed in the first supplement: 'The spirit of commerce, which is incompatible with war, sooner or later gains the upper hand in every state. As the power of money is perhaps the most dependable of all the powers (means) included under the state power, states see themselves forced, without any moral urge, to promote honorable peace and by mediation to prevent war wherever it threatens to break out. They do so exactly as if they stood in perpetual alliances […]. In this manner nature guarantees perpetual peace by the mechanism of human passions. Certainly she does not do so with sufficient certainty for us to predict the future in any theoretical sense, but adequately from a practical point of view, making it our duty to work toward this end, which is not just a chimerical one' (Kant, 1795/2004, p. 88; Kant, 1795b).

Almost all liberal peace theorists, from all the various approaches, mention Kant and his ideas on perpetual peace (Hermann & Kegley, 1995, p. 511; Hayes, 2012, pp. 767, 769; Maoz & Russett, 1993, p. 625; Gartzke, 2007, p. 167; McMillan, 1997, pp. 35-36; Gartzke, Li & Boehmer, 2001, p. 391; Lee & Pyun, 2016, p. 328). However, most of them pick one particular element of liberal theory to explain patterns of peace and conflict, meanwhile criticizing other explanations. Russett and Oneal (2001) use a different approach, and discuss the cohesion between the three elements of the 'Kantian triangle' (Russett & Oneal, 2001, p. 35). According to them, the three elements are mutually connected, while on its own delivering an independent contribution to peace, and their effect on peace is reciprocal:

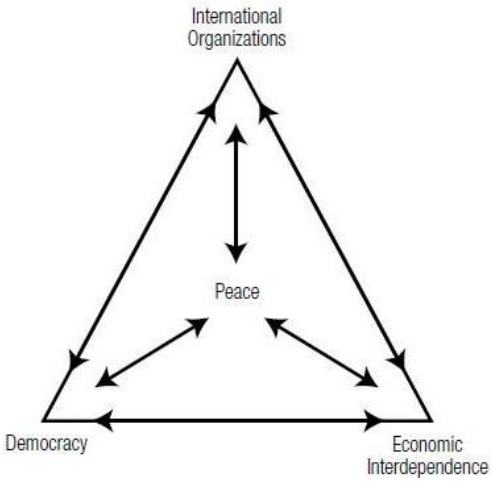

Figure 1: The Kantian Triangle (Source: Russett & Oneal, 2001, p. 35, retrieved from https://studyblue.com)

every element is reinforced in times of peace (as in Figure 1). Not all the arrows along the lines are equally strong, some are even speculative (Russett & Oneal, 2001, pp. 35-38, 193).

Here, I will leave liberal institutionalism (international organizations) aside. The focus will be on the connection between democratic explanations and interdependence, and their effect on peace. Russett and Oneal explain almost all the arrows in the figure, except two, and one of them is the arrow from interdependence to democracy. However, they offer some possible explanations in favor of this arrow. Firstly, with the idea that trade and free markets are prosperity-promoting, that countries with a higher prosperity have a higher likelihood of being democratic, we have an indirect, positive effect from interdependence on democracies and consequently (again) on peace. Furthermore, the arrow could be explained from the idea that trade can change ideas for the positive (in terms of democracy) (Russett and Oneal, 2001, pp. 198-199). Despite the explanations, Russett and Oneal consider them as unsatisfactory to settle the question. The most important reason for this is that, contrary to most other relationships in the triangle, this arrow should not be investigated at the dyadic level, but on the individual country level. It can be inferred from their decision that Russett and Oneal held the view that more research (on the level of individual countries) is necessary before settling the question of this arrow (Russett & Oneal, 2001, p. 199).

Regarding the arrow from democracy to interdependence, or the strengthening of the latter by the former, Russett and Oneal consider this as proven, although evidence is not unanimous (Russett & Oneal, 2001, pp. 218-223). The main explanation for this relationship is that for a democracy to trade with other democracies, peacefully and in confidence, they don't have to fear that the benefits that the trading partner receives will end up in strengthening a future adversary (Russett & Oneal, 2001, p. 38).

From the democratic peace to interdependence

In linking democratic peace with interdependence, it is first of all important to realize and emphasize that the two parts, including liberal institutionalism, are originally a unity in working toward the realization of (liberal) peace (Kant, 1795/2004; Russett & Oneal, 2001; Doyle in McMillan, 1997, p. 35; Oneal & Russett, 1999, pp. 1-2). Where Rosato argues that democratic peace theory probably is 'the most powerful liberal contribution to the debate on causes of war and peace' (Rosato 2003, p. 585), Oneal & Russett (1999) correct him and others. According to them, democratic peace theory alone is incomplete, because it ignores the pacifying effect of two other elements of Kant's 'program for peace'. Moreover, the term 'democratic peace' alone hides the theoretical discussion this distinct

peace and the causes of it (Oneal & Russett, 1999, pp. 1-2). However, one of the reasons that explanations for peace are in most research approached from one of the 'Kantian legs' (Russett & Oneal, 2001, p. 193), is that statistical research has its limitations. Statistical research is limited in the sense that only a few relationships, with only a few variables, can be researched at one time. This can be problematic, since any particular relationship from the Kantian triangle cannot be considered as insulated from the others (Russett & Oneal, 2001, p. 39). Despite this potential problem, research on a particular relationship can be very useful, because the outcomes on the various relationships can be complementary in researching the theory holistically. However, as I will discuss below, research shows that in the reality of liberal scholarship on peace, the various elements of the theory have often been played off against each other, at times resulting in three different, rival theories. Here, I will focus again, in more detail, on democratic explanations for peace as well as explanations from economic interdependence. The democratic peace thesis is one of the most prominent subjects of study in international relations (Hayes, 2012, p. 768). In 1964, Babst found empirical evidence for the democratic peace thesis. His hypothesis that independent states with freely elected governments would not fight each other was based on the assumption that the general public, if it has the choice, doesn't want war (Babst, 1964, p. 9). Babst found that independent nations with elective governments did not fight each other in the researched period, 1789 to 1941. To be considered a freely elected government, Babst argued that a state should have a legislature, chosen at a regular interval by the electorate from at least two opposing choices, and it should have controlling power. Furthermore, administrative control of the government should also occur in this way. Thirdly, there should be a secret ballot, accompanied by 'some freedom of speech and press'. Finally, the country must be independent at the start of the war in order to make the choice of the people relevant (Babst, 1964, pp. 9-10). Babst's finding, the correlation between regime type and peace, marked the starting point for more research on the phenomenon of the democratic peace.

Maoz and Russett discuss the normative and structural causes of the democratic peace between 1946 and 1986. They start with mentioning two important findings: democratic states are as war-prone as non-democratic states, and democratic states have not fought each other for the last two centuries (Maoz & Russett, 1993, p. 624). They mention two other potential explanations (although not elaborated upon afterwards): rich states with heavy trading do not fight each other, and alliances cause the absence of conflict (Maoz & Russett, 1993, pp. 625-627). The conclusions are that the democratic peace is no coincidence, that regime type makes sense, and that structural and normative explanations are good explanations, with the latter as the strongest one (Maoz & Russett, 1993, 636-637).

When it comes to the underlying causes of the democratic peace, Hayes has laid out two important explanations for the phenomenon. Hayes argues that despite (or because) a lot of large-N statistical studies on the democratic peace have been done, there is little attention for 'causal forces'. Large-N quantitative studies can reveal correlation, but not so much causation. Therefore, Hayes focuses on two mechanisms, norms and structure (Hayes, 2011, pp. 767-768). First of all, democratic political norms could explain the democratic peace. Proponents of this explanation argue that democratic states have certain peace-promoting domestic norms which they 'project' or externalize into the international political system, such as the rule of law, peaceful conflict-resolution, and compromise. Consequently, when states find likeminded state in the international arena in this regard, there will be cooperation rather than conflict (Hayes, 2012, p. 774). Structural explanations on the other hand view domestic political structures as most important in governing violence between states. There are various approaches to the structural explanation. For example, the political accountability model argues, the importance of transparency in democracies, audience costs, and the separation of powers all stem from a structural approach in explaining the democratic peace (Hayes, 2012, pp. 771-772). When discussing the problems with the normative and structural explanations, Hayes argues that the two mechanisms are artificially separated, but that the two should be integrated in research. Furthermore, that these explanations pay little attention to the construction of threats, although exactly that is at its core about that, Hayes argues (Hayes, 2012, p. 776). All in all, Hayes argues: 'The central explanations of the field, norms and structure, have also contributed to the general weakness of mechanistic understanding.' However, the use of the constructivist approach could bring more clarity to the understanding of the mechanisms of the democratic peace (Hayes, 2012, pp. 782-783).

The idea that there is evidence for the phenomenon of the democratic peace, the idea that peace prevails among democracies, is widely accepted. However, regardless the consensus there might be on this issue, ideas about the underlying causes of the phenomenon are highly contested. As we saw, Hayes is critical about the normative and structural explanations. Another critic of the normative and structural (or institutional) logic is Rosato. According to Rosato, the democratic nature of states can in itself not explain the phenomenon of the democratic peace (Rosato, 2003, p. 585). Rosato tests the two logics and discusses the flaws in the normative and structural explanations, and concludes that 'these logics do not operate as stipulated by the theory's proponents'. In order to offer a comprehensive critique, Rosato comes up with a positive approach to the democratic peace phenomenon. The potential explanation he provides is that, based on two observations, American dominance could be the explaining factor. The first observation is that the democratic peace is actually a post-Second World War phenomenon, and that it is restricted to Western Europe and the Americas.

The second observation is that the United States is and has been the dominant power in these regions, thereby emphasizing the idea of a regional peace (Rosato, 2003, pp. 585-586, 599).

Like Rosato, Gartzke argues that although the democratic peace is an existing phenomenon, but that the explanation of it has to be found in liberal political economy. Gartzke's theory of 'liberal peace' is based on capitalism and common interstate interests. He argues that at least three different attributes of mature capitalist economies can cause peace. First of all, in advanced economies, land has become less important, because the focus is on intellectual as well as financial capital. Therefore, territorial expansion is less attractive, and resource competition is cheaper to solve via markets than through military action. Secondly, he argues that especially after the Second World War, there is 'substantial overlap' in the foreign policy goals of developed states. Striking is that he equals 'developed nations' with 'liberal states': 'Whether this affinity among liberal states will persist in the next century is a question open to debate' (Gartzke, 2007, p. 166). And finally, Gartzke sees the rise of global capital markets as another part of the explanation of the democratic peace, because these markets create a new mechanism in competition and communication. According to Gartzke, his notion of a capitalist peace is 'hardly new', because for example Montesquieu, Mill, Cobden and Angell also saw the peace-promoting value of market forces (Gartzke, 2007, pp. 166-167).

Furthermore, he argues that liberal economic processes are treated incomplete and uneven in existing empirical research on the democratic peace thesis, and that while the role of trade in goods and services is an element in most research, capital markets and economic development are mostly ignored (Gartzke, 2007, p. 167). Trade has been and still is an important factor in the research of liberal political economists. For example, according to Cobden, trade is 'the grand panacea', while Paine argued that 'commerce diminishes the spirit, both of patriotism and military defense' (Cobden in Gartzke; Paine in Gartzke, 2007, p. 170). Also in recent research, trade is 'by far the most closely evaluated' according to Gartzke (Gartzke, 2007, p. 170). However, regardless the role of trade, it is not clear from Gartzke's theory how he exactly defines capitalism and capitalist states. He argues: 'Economic development, financial markets, and monetary policy coordination all arguably play a more critical role in promoting peace. Much of the impact on peace will be missed if much of what comprises capitalism is omitted or ignored' (Gartzke, 2007, p. 170). So, these elements comprise, according to Gartzke, at least in part capitalism.

When Gartzke continues on trade, he argues implicitly that trade was overrated because classical political economists did not always realize the strategic nature of conflicts. His logic on trade is that when one trading partner becomes more pliant, there is space for another actor (state) to behave

more aggressively, and that consequently peace is not served, or at least nog significantly, by trade (Gartzke, 2007, p. 170).

With Gartzke, we enter into the realm of economic explanations for war and peace. However, Gartzke differs in this from the main liberal economic approach, at least in the sense that he thinks that the role of trade in peace is overestimated in existing research. Trade however is one of the core elements of the liberal theory of economic interdependence, and Copeland is one of the many authors on this issue. He tries to bring the liberal and realist theories about interdependence together, and the theory he comes up with for this is one of 'future trade expectations'. According to him, liberal nor realist theory is wrong, but they are both incomplete. The perspectives of the two camps are diametrically opposed. Liberals argue that interdependence will lower the likelihood of war, because with a higher value of trading, this option will become a more attractive alternative for aggression. From this perspective, interdependence should be promoted, thereby making trading attractive rather than invading. Realists on the other hand view interdependence as a phenomenon which increases the likelihood of war. From their world view, the primary concern of states is their security, and a mutually dependent relation means vulnerability. From this vulnerability, states can choose war as more attractive than the status quo, because in this way they can ensure their access to 'necessary materials and goods' (Copeland, 1996, pp. 5-6). This last addition is an important one, and I will come back to this later.

So, liberals emphasize the benefits of trade, in the sense that trade provides benefits that make trade more profitable than war (Copeland, 1996, p. 8). Realists emphasize the costs of interdependence, and later on Copeland comes with another important notion: be cut off during crisis. This problem is particularly acute for imports like oil and raw materials; 'States concerned about security will dislike dependence, since it means that crucial imported goods could while they may be only a small percentage of the total import bill, without them most modern economies would collapse. Consequently, states dependent on others for vital goods have an increased incentive to go to war to assure themselves of continued access of supply' (Copeland, 1996, p. 10). This specific role of particular goods is relatively briefly addressed, but in liberal theory there is even far less attention to this. However, this is not the point where Copeland tries to make the two theories complementary to one another. Instead, his new 'dynamic factor' of 'expectations of future trade' gaps the bridge between liberalism and realism, he argues. According to him, the positive expectations of future trade, regardless the current state of interdependence, will make war unlikely, while negative expectations of future trade, especially in a situation of a high extent of interdependence, will make war more likely (Copeland, 1996, p. 39).

Interdependence and the role of trade

With Gartzke as an exception, as he admits himself (Gartzke, 2007, p. 170), trade has an important role in interdependence. However, this role is often presented as a generality, without distinguishing between the goods and services that are traded. This arguably dates back to the economic theories of comparative advantage and specialization. Specialization allows states to enlarge their total output and improve the standard of living, because every state produces where it is good at. This idea dates back to Adam Smith. David Ricardo expanded Smith's ideas, and he introduced the idea of comparative advantage. Even if one state is more productive in all economic activities than the potential trading partner, it is still profitable to specialize. The idea with comparative advantage is that every state produces the goods that it can make with the lowest relative or comparative opportunity costs (Brue, McConnell & Flynn, 2014, pp. 399-401).

From an economic point of view, the ideas of specialization and comparative advantage are beneficial and thereby desirable to any participating country. However, as I pointed out, realist theory has objections. Although interdependence in general is viewed as undesirable, this especially holds for some specific group of products, although the theory's elaboration on this is limited (as I pointed out). Liberal theory on the other hand seems to copy economic theory on this matter, because there is almost no attention to the nature of traded products. In this theory, the potential benefit of intensive trade, which is peace, is completely generalized.

The realist idea that states are reluctant to become dependent on other states, especially with regard to what Copeland calls 'crucial imported goods' or 'vital goods' (Copeland, 1996, p. 10), seems logic to me. The idea that some goods are more important than others is also a matter of logic, and that idea is supported by the World Trade Organization (WTO). In its 2010 World Trade Report, which is fully devoted on trade in natural resources, it is argued: 'Natural resources are indispensable for the functioning of modern economies, and for achieving and maintaining high standards of living in all countries. They are primary inputs in the production of all manufactured goods. They provide the energy needed to transport people and goods from place to place, to light our cities, and to heat our homes and places of work' (World Trade Organization, 2010, p. 70).

Then what does the WTO understand by 'natural resources'? Economic usefulness and the scarcity of goods in economic sense are the basics of this definition. The WTO's full definition of natural resources is: 'stocks of materials that exist in the natural environment that are both scarce and economically

useful in production or consumption, either in their raw state or after a minimal amount of processing' (World Trade Organization, 2010, p. 46).

So because of the scarcity and economic usefulness requirements, sea water and air for example do not fall under the definition. Agricultural goods (also food and primary products) are not considered natural resources. The reasons for this that these products are cultivated rather than extracted as a natural resource, and that they need inputs such as land, water, and fertilizer to grow. Contrary to the general domain of agricultural products, the report classifies fish and forestry products as natural products. Although both can be cultivated, these goods are traditionally extracted from natural stocks that already existed. (World Trade Organization, 2010, p. 46).

The WTO report furthermore provides five key features of natural resources, which helps to understand the nature of natural resources and to identify a definition. The five key features are: exhaustibility, uneven distribution across countries, negative externalities in other areas, dominance of the sector in the national economy, and price volatility (World Trade Organization, 2010, pp. 47-53). When we look at the description and the examples here, fuel in general and oil particularly is a good example for the most features. For example, 'peak oil', the maximum point of oil production, may be hit soon, 90 per cent of all oil reserves is situated in 15 countries, while all of the world's largest industrial economies are importers of fuel, and fuels make up a large part of total exports of various countries (in contrast to mining products for example) (World Trade Organization, 2010, pp. 47, 48-49, 51).

So, the WTO, a great promotor of free international trade at the end of the day, is also clear about the different nature that goods have, making some goods much more important than others. In addition to the realist concerns about vulnerability through interdependence, for some goods it can even become a matter of survival, which could make state more war-prone in times of conflict.

Research

After this observation from the literature, the big question is: Why does liberal theory say nothing about the potential consequences of the different nature that traded goods have? Is the theory that interdependence is peace-promoting generalizable for all traded goods, or is it advisable for states (in terms of peace and conflict) to maintain the production of certain goods at home, or trade it only with allies? Although arguably more liberal than realist in nature, the latter is what we see with the

European Union's (EU) Common Agricultural Policy, and also in the trend that the United States strives for its energy independence.

The research question is the following: Does the nature of traded goods have an effect on peace and conflict? In other words: Does it matter for interdependence theory whether 'vital goods' are traded, or is there no difference with any other kind of goods? Below the expectations (based on the theory) are discussed, as well as how to approach the question.

Methodology and operationalization

Conflict Intensity

When it comes to methodology, a large-N approach to research the stated research question is used. The basis of the data set is data from the Correlates of War (COW) project on dyadic militarized interstate disputes (MID) between the end of 1992 and 2001 (Ghosn & Bennett, 2003). This data contains 512 cases where pairs of countries were in conflict (this is the most recent version, 3.1). Although there is consequently no variation on the question whether there is conflict, there is another way to use variation. Here we come to the dependent variable. According to the data set codebook, country A is the country that took the first militarized action against country B (for all cases). With regard to the research question, this is what can be used, because now trade relationships of the dyads can be researched, while focusing on the country that took the first militarized action. With the two independent variables which assess trade, it is also important to focus on country A, because this way vulnerability that arises from trade relationships (according to realism) and the preparedness to move to the next action level in the conflict can be combined. Now when it comes to variation, which of course is essential, the data set distinguishes between a range of 21 actions that a country can take, from 'no militarized action' (0) and 'threat to use force' (1) to 'join interstate war' (21). For all countries A level '0' is of course no issue (contrary to countries B on some occasions). In addition to this, the data set distinguishes between the highest hostility level in the conflict, ranging from 1 ('no militarized action') to 5 ('war'). The action levels and hostility levels are corresponding (with a few (probably unintended) deviations) (Ghosn & Bennett, 2003).

The fact that the starting point is that all the pairs of countries are involved in a conflict situation is not considered as problematic, in the first place because there is variation to a large extent. Moreover, it is a very interesting starting point to answer the research question: in those 512 dyadic disputes, with many incidents for most disputes, what is the role of natural resources in the decision to escalate or not to escalate the conflict? On the basis of the presence of the action levels in the data set, and in

order to make a clear range from threat to real war, the 21 action levels are narrowed into eight action levels. In addition to these reasons, the order of the 21-level scale is sometimes not very clearly from non-violent to more violent for each step. The new action levels are: 'threat to use force', 'threat to blockade', and 'threat to occupy territory' (1); 'threat to declare war', 'threat to use CBR weapons', and 'threat to join war' (2); 'show of force' (3); 'alert' , 'nuclear alert', 'mobilization', and 'fortify border' (4); 'border violation', 'blockade', and 'occupation of territory' (5); 'seizure' and 'attack' (6); 'clash' (7); 'declaration of war', 'use of CBR weapons', 'begin interstate war', and 'join interstate war' (8)[1] (Ghosn & Bennett, 2003). With this new order, the scale of the dependent variable is clearer and has more logic, mainly because the precise distinction between the levels in the original 21-scale action levels is not always clear.

Oil Dependence

'Oil Dependence' is the main independent variable. On the basis of the realist objections to interdependence theory, the expectation is that a dependence on 'vital goods' results in a higher action level in conflict situations. What is important in the first place, is the operationalization of 'vital goods'. As described, both realist theorists and the WTO see a special role for these kind of goods. Furthermore, fuels are often viewed as one of the most important 'vital goods', which according to realism can make countries vulnerable when they cannot provide these resources for themselves. We have also seen that oil can be considered as a typical good in this theory. For these reasons, 'vital goods' is operationalized as trade in, and (foreign) dependence on oil.

Ideally, this variable would be measured in a way comparable to the variable 'Trade Dependence' (as discussed on page 19). However, unfortunately there are too many problems to approach the variable this way. First of all, and most importantly, there is no data on dyadic oil trade for most countries in the world, let alone for the years that are relevant for this research. Secondly, there is no such thing possible as to combine imports and exports in a dyad (resulting in 'total dyadic oil trade'), because in a dyad, trade in a specific commodity is expected to be a one-way street. Moreover, where the share of the total dyadic trade from country A's GDP will always result in a number between zero and one, the share of oil need or surplus for country A from its total oil consumption can also be a negative number (meaning that this country is not dependent on foreign oil, because it is a net exporter). In addition to this, these numbers for country A and B (foreign oil dependence per country) are very hard

[1] The frequencies across the levels are as follows: level 1 29 cases, level 2 two cases, level 3 123 cases, level 4 93 cases, level 5 63 cases, level 6 109 cases, level 7 81 cases, and level 8 twelve cases. Furthermore, narratives for all disputes (non-dyadic) in this research are available.

to combine in one 'dyadic foreign oil dependence', in the first place because this has to be on the basis of the assumption that the dependencies are relevant for the particular dyad, and secondly because of the problem of combining varying degrees of dependence per dyad.

For these reasons, and with the available data, dyads are researched on the basis whether or not they consist of oil importers, exporters, or both. Data sets on oil imports and oil exports by country (in thousand barrels per day, crude oil including lease condensate) from the U.S. Energy Information Administration (EIA) are used (Energy Information Administration, n.d.). Oil imports minus oil exports results in a net oil need or surplus, in other words, net importer or net exporter. Countries whereby this number results in (exactly) zero are considered as net importers. As with dyadic trade numbers, oil trade statistics (imports as well as exports) are taken from one year before the start of the dyadic conflict, because oil trade (imports and exports) can also suffer heavily from any conflict. After it is clear whether the countries in the dyads are net importers or exporters, these results are combined in the final independent variable, which is 'Oil Dependence'. This gives four options for each dyad: country A is a net oil importer, country B a net oil exporter (1); country A is a net oil exporter, country B is a net oil importer (2); both countries A and B are net oil importers (3); both countries A and B are net oil exporters (4).

As explained, on the basis of theory it is expected that specifically one out of these four forms will result in a higher action level in the dyadic conflict. This, and also the expectations for the other three options, needs more clarification. For the option that country A is a net oil importer and country B is a net exporter, on the basis of realist theory a higher level of conflict is expected. Because country A as a net oil importer has vulnerabilities because of foreign dependence on 'vital goods', it could be prepared for conflict in order to reduce its vulnerability. This preparedness becomes relevant when these countries A face countries (B) that are net oil exporters, because this is where the vulnerabilities could be lowered. After the discussion of the theory on this, we have to add to this that because of the absence of the ideal data to measure dyadic oil trade, this research has to rely on the assumption that there is a trade relationship between an oil importer and exporter. This is a weakness, but still the best option with the available data.

For the other three options, there is no particular expectation for a high or low level of action in conflict situations. Because of the vulnerability that realist theory ascribes to (net) oil-importing countries, these countries are expected to be more war prone when they face an oil-exporting country, because, as the theory suggests, this conflict could reduce the vulnerability. However, this behavior is not expected from oil-exporting countries in an exporter-importer dyad, because the theory (which is not

very comprehensive) centers around vulnerability that arises from dependence on 'vital goods'. Therefore, there is no place for the argument of revenues from oil exports in this theory. Because there is no range in the categories in this variable, the variable is researched on the basis of two categories (one dummy): importer-exporter dyads and the three other possible dyads combined.

Regime Type

The first control variable in this research is regime type (on a dyadic basis). Based on the dyadic MID data set, data on the regime types in the year of the dyadic dispute for all countries (A and B) is gathered from the Polity IV project on regime trends by country (Polity IV, n.d.). Polity IV focuses on regime characteristics, with scores from minus (-10) ten to plus ten (10). Based on these scores, the index has five classifications: full democracy (score 10), democracy (scores 6 to 9), open anocracy (scores 1 to 5), closed anocracy (scores -5 to 0), and autocracy (scores -10 to -6).

With this variable, this research controls for democratic peace theory. Therefore, since democratic peace theory argues that liberal democracies do not fight one another (Gartzke, 2007, p. 166; Hayes, 2012, pp. 775, 776; Hermann & Kegley, 1995, p. 517; Rosato, 2003, p. 586), I can bring the 21 scores (-10 to 10) back to only two scores: countries that are a (liberal) democracy and countries that are not a (liberal) democracy. Without attention to the word 'liberal' this would mean a distinction between scores minus 10 (-10) to five (5) and scores six (6) to ten (10). However, because democratic peace has built its theory around the concept of liberal democracies, this research should adjust the classification to this notion as perfect as possible. The Polity IV project does not mention liberal democracy as a classification. Because a score of six (6) for a democracy can be considered as somewhat low, thereby potentially disqualifying for the classification 'liberal democracy', this threshold is adjusted from six to seven. To be honest, in fact this can be a somewhat arbitrary threshold, and therefore the level is raised only with one point to be qualified as a liberal democracy.

With these two options per country, the dyadic regime type (the first control variable) has four possible outcomes. Both countries can be liberal democracies, both countries can be non-(liberal) democracies, and a dyad can contain one country of each regime type (or vice versa).[2]

[2] The frequencies across the four options are: dyad of two liberal democracies: 20 cases; dyad of two non-(liberal) democracies: 222 cases; dyad of a liberal democracy versus a non-(liberal) democracy: 187 cases; dyad of a non-(liberal) democracy versus a liberal democracy: 74 cases. Although the first group is quite small, the explained choice for adjustment of the index is considered more important than the size of this group.

This research uses a range for this, and the order is as follows: liberal democracy versus liberal democracy, liberal democracy versus non(-liberal) democracy, non(-liberal) democracy versus liberal democracy, and non(-liberal) democracy versus non(-liberal) democracy. With this range, the first dyadic regime type is expected to result in the lowest conflict intensity, while the last type is expected to cause the highest conflict intensity. The logic here is that liberal democracies, according to democratic peace theory, do not fight each other. Secondly, as discussed with regard to this theory, norms is one of the dominant explanations for this theory. In the case of a dyad with different regime types, in this research it is assumed that when country A is a liberal democracy, the limiting role of its norms on the intensity of the conflict (height of the action level) is more important than when the liberal democracy is country B. Finally, since a conflict between to non-(liberal) democracies is of no (or the least) interest to any explanation of the democratic peace, these dyads can be expected as having the most intense conflicts. The findings of Russett and Oneal that the 'cats-and-dogs effect' (different regime types in a dyad tend to use more force against each other) was not confirmed, is an extra argument and a good example that a range can be used for regime type (Russett & Oneal, 2001, p. 115).

Trade Dependence

The second control variable is Trade Dependence. This variable shows the dyadic trade dependence of country A. Besides the dyadic MID data set, the COW project offers a very comprehensive data set on dyadic imports and exports between almost every possible pair of countries for many years, including those of this research (Barbieri & Keshk, 2012). First of all, dyadic imports and exports are added together, resulting in the total dyadic trade in current millions of American dollars. These numbers are multiplied by one million, and then this result is divided by the Gross Domestic Product (GDP) of country A, of course for the same year as the trade data. In words, this measure indicates the extent to which country A's GDP is dependent on the total amount of trade with country B. In numbers, this measure results in a number between zero (no dependence) and one (maximum dependence), with for almost all cases a number close to zero. This should be not a problem, because in the end there is a lot of variation (albeit in the 'distant' decimals). This approach is followed from Russett and Oneal (2001). Regarding this approach and variable, they conclude: 'The dyadic trade-to-GDP ratio will accurately measure a country's dependence on its trading partner' (Russett & Oneal, 2001, p. 141). This is what is needed in this research, especially for country A, because here it is relevant and interesting to control for the importance of the dyadic trade relationship for country A, the country that decided to take the first militarized action.

GDP statistics are retrieved from the World Bank, this data set is also in current American dollars, and the GDP number is at market prices (World Bank, n.d.). For dyadic imports and exports, as well as for the GDP data, data from the year before the start of the conflict is selected, in order to protect against confusion regarding the direction of a potential (causal) relationship. Needless to say, trade relations and trade intensity and volumes can suffer enormously from a conflict. Again, this is an approach that Russett and Oneal also use (Russett & Oneal, 2001, p. 139).

All in all, this research has three hypotheses: First of all, it is expected that the developed predictor will cause a higher action level in the conflict (against the other three options, combined in one dummy) (1). Furthermore, it is expected that the control variable Regime Type (in a range) causes a higher action level too (2). Finally, it is expected that the control variable Trade Dependence (which shows the dyadic trade dependence of country A) will cause a lower action level in the conflict (3).

Results

After checking the assumptions of the multiple linear regression analysis[3], the results in numbers are presented in table 1. The analysis is performed on the basis of two models[4]. In model 1, only the main independent variable is used, without the control variable. In model 2, the control variables are included.

First of all, the results show that the explained variance (R square) of both models is low. This means that the main predictor as well as the two control variables cannot explain much of the variance of the

[3] Most assumptions are met: type of the variables, non-zero variance, no perfect multicollinearity, no correlation of predictors with 'external variables', independent errors, normally distributed errors, and independence (Field, 2009, pp. 220-221). Remarkable results from checking the assumptions are: for 'no perfect multicollinearity, the average variance inflation (VIF) is greater than one, which means that 'multicollinearity may be biasing the regression model' (Field, 2009, p. 224), and none of the correlations between the independent variables is above 0.8. For homoscedasticity, this assumption is considered as not met. However, this is hard to establish with certainty, because almost all points in the plot are located in between x= -1.5 and 1.5, and y= -1 and 1.5 (Figure 2). For the assumption of independent errors, there is positive correlation, but not considered problematic. Finally, the assumption of linearity is considered as not met, because there is a clear pattern in the performed plot. Again, this is a bit hard to establish with certainty, because the positive and negative residuals are relatively balanced around the baseline. According to Field, a non-linear relationship, so if the values do not lie along a straight line, is 'obviously' a problem for the generalizability of the findings, because it limits the potential of the generalization (Field, 2009, p. 221). However, despite the potential problem that some assumptions are not met, the regression analysis is performed for this research. Note: the assumptions were checked for a slightly different model, with three dummy variables for the main predictor, instead of one.

[4] In this research, there has been checked for the effects of interaction effects (via additional models). However, this did not result in a better model, from all predictors (original predictors and interaction effects combined), at the end of the day only one was significant (the interaction effect between the main predictor and 'Trade Dependence').

dependent variables (conflict intensity). The explained variance is 0.9% for model 1 (.009) and 1.6% for model 2 (.016).

Table 1
Logistic regression analysis, predictors for Conflict Intensity

			95.0% CI for B	
Predictors	**B (SE)**		**Lower**	**Upper**
Model 1				
Oil Dependence	-.334*	(.170)	-.669	.001
Constant	4.818	(.115)	4.592	5.045
Model 2				
Oil Dependence	-.275	(.175)	-.619	.069
Regime Type	.125	(.088)	-.048	.298
Trade Dependence	-2.327	(2.889)	-8.007	3.353
Constant	4.450	(.298)	3.864	5.036

Notes. N = 406; CI indicates confidence interval; R^2 = .009 (Model 1); R^2 = .016 (Model 2); *p < .1, **p < .05

A comparison between the three hypothesis and the results shows that with regard to the directions of the predictors, the direction of 'Oil Dependence' is not as expected[5]. For the control variables (Regime Type and Trade Dependence) the directions from the results are as expected[6]. This means that with regard to the directions, the variables 'Trade Dependence' and 'Oil Dependence' have the same direction. This is important for this research, since a potential different direction for some specific commodities ('vital goods') was theorized and hypothesized, and as such formed the basis of this research. Furthermore, the B-values show how much each predictor affects the outcome, under the condition that the effects of all other predictors are held constant (Field, 2009, p. 238). Regardless the directions, the B-values show that 'Trade Dependence' is the strongest force.

However, none of the independent variables is significant (in model 2). In model 1, 'Oil Dependence' is significant at the .1-level (.050), thereby making (as the only predictor) a significant contribution to the model. Here it is important to realize that although there is significance, this direction contrasts with the hypothesis. However, both models 1 and 2 as a whole are significant models on the .1-level (.050 for model 1, .093 for model 2 (F-tests))[7]. This shows that although the separate predictors are

[5] As can be inferred from the hypotheses (page 20), a positive B-value for Oil Dependence was expected.
[6] As can be inferred from the hypotheses (page 20), a positive B-value for Regime Type was expected, and a negative B-value for Trade Dependence was expected.
[7] Although the .1-significance level is not the most widely used level, because this research has a limited number of cases, this level is used in this research.

not significant contributors to the model (model 2), the models as a whole are of meaning for predictions of conflict intensity.

What these results tell, is first of all that the main independent variable in this research, the oil position in dyads in the MID data set (Oil Dependence) on its own is a significant predictor for the dependent variable, the highest action level that country A (the country that takes the first militarized action) is willing to take in the dyadic conflict[8]. So, despite the limitations of this predictor (described on page 17), it has the potential to make a significant contribution to the model. In model 2, besides the control variables, the main predictor is not significant anymore. On the other hand, as described, the model as a whole remains significant after adding the control variables.

However, what is striking here is that the control variables are widely used, and heavily researched ones. Especially for the predictor Trade Dependence, but also for the predictor Regime type, the same or a comparable approach is used as Russett and Oneal use in their study on the three main explanations for peace (democracy, interdependence, and international organizations) (Russett & Oneal, 2001, pp. 115, 145).

Conclusions

Starting with one of the most comprehensive theories on peace and war, the focus of this research is particularly on the elements of regime type (democratic peace theory) and international trade (interdependence theory). It is the latter theory which formed the basis of this research: Why does interdependence theory not specify and explain whether it makes a theoretical difference what commodities are traded? When we see that realism has objections to the general theory, but takes specific commodities for the core of their argument, why does liberal theory not respond to this, and explain that and why certain commodities do or do not make a difference for the theory?

These questions were the basis for this research. A lot of attention is paid to the theory behind my research, mainly because research on this specific topic is quite rare. Furthermore, a lot of attention is paid to the independent variable that is developed as well as to the other independent variables (the control variables).

[8] With regard to the dependent variable, the choice for an 8-point scale is explained on pages 15-16. Multiple regression analyses were performed on the basis of the original 21-points and 5-points scales, and even on the basis of a 2-poins scale (with 0 is no war, 1 is war). However, all these different measures do not make a real difference for the significance of the independent variables, for the model as a whole, or for the R square.

The results of the statistical analysis (a multiple regression analysis) show that the explained variance of the model is very limited. Furthermore, most predictors are not significant ones. Despite these results, there are two important findings: the model as a whole, including control variables, is significant. Secondly, the direction of the main predictor, Oil Dependence, is contrary to the expectations, and in line with the control variable Trade Dependence (as a measure of interdependence). Especially the latter shows that more research is needed: because the measure of Oil Dependence has serious limitations and weaknesses (although currently still the best possible measure), an improved measure is necessary to come up with stronger conclusions on the compatibility of interdependence theory ('the spirit of commerce'), and trade in natural resources (in this research operationalized as oil).

What is also important, is that some assumptions for the regression analysis are probably violated, which in most cases has consequences for the generalizability of the results. Now with these results, this is not considered a weakness, but rather a strength. The 'warning' that these results could not be generalizable, could in this case mean that this data set contains specific reasons for some conflicts, and this might be supported by the outcomes themselves.

Furthermore, regarding the methodology, the basis data set, and the dependent variable, there is confidence that the approach by its nature has the right potential for a statistical analysis. However, the dyadic nature of the data set (which is necessary for this research) is a potential problem for this analysis. For example, from the 138 different countries that are in the data set with a total of 1024 countries (512 pairs), a few countries dominate: Yugoslavia (115), Russia (55), Iraq (50), Turkey (41), the United States (40), Afghanistan (35), and China (31). Together, these seven countries make up 35.8% of the data set. With the research design, this is not considered a weakness per definition. What is important to realize is that every dyadic conflict, albeit in the end a conflict of one country against twenty countries, is the result of a country-specific process of consideration and decision. Also in the case of alliances, it is rare that all member countries (decide to) participate in a conflict. However, other reasons than the variables that are use could have played an important role. With regard to the size of the data set, this can be an explanation for the statistical results.

All in all, there is work to do on this topic. Where on the one hand there is a theoretical basis for research on the specifics of interdependence theory (with regard to trade in specific commodities, or 'vital goods'), on the other hand the statistical analysis does not prove a different path for trade in natural resources. It is clear that, also because the limitations of the main measure in this research, more research is needed. And if interdependence, 'the spirit of commerce', and natural resources are

indeed not compatible in the end, this could also show that rival theories (liberalism and realism) cannot exclude each other here.

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