

EDITORIAL ESSAY

International Trade and World Peace: The Possible Moderating Effect of E-Collaboration Media Naturalness

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ABSTRACT

Anthropological evidence suggests that the human species has evolved what could be called a "trading instinct" over many of years of Darwinian adaptation, where trade acts as a social catalyst and thus as a suppressor of violent conflict among trading groups. Without enough natural human interaction it is unlikely that the trading instinct will achieve its social purposes, even though it may achieve its main utilitarian purpose, namely the economically beneficial international exchange of needed goods or services. E-collaboration tools that increase the naturalness of electronic trade interactions are presented as enablers of international trade that can go some way toward solving this problem.

Keywords: e-collaboration; evolutionary psychology; e-trade; e-commerce; international business; global trade

THE UTILITARIAN VIEW OF INTERNATIONAL TRADE

International trade is more often than not viewed from a utilitarian perspective. One group of individuals, who make up a nation, owns a good or service that is either needed or desired by some other group of individuals in a different nation. The result is trade between the two national groups

in one of its many forms, including: the exchange of goods or services for other goods or services, known as bartering; and the more typical exchanges of goods or services for cash or a promise of future cash payment, which are the most typical instances of trade.

The utilitarian view of international trade is that trade is necessary so that

individuals or groups can acquire goods and services that they are not capable of efficiently producing themselves. This view is indeed consistent with the historic view of trade among nations, and the tremendous growth in international trade that occurred since the 19th century. Arguably that growth has been largely motivated by the notion that certain nations are more efficient producers of specific goods than others. When a nation is a more efficient producer of a good than another nation, then trade of that good benefits both nations.

Several theoretical models of international trade have been proposed that are closely related to the utilitarian view. One of these theoretical models is the Ricardian model of international trade, named after the English stockbroker and economist David Ricardo (see Figure 1). Ricardo's trade ideas were strongly

influenced by the work of several predecessors, notably Adam Smith's treatise on the wealth of nations (Smith, 1776). Ricardo hypothesized that countries would fully specialize in the production of certain goods, instead of producing a wide array of goods, and that their areas of specialization would depend on factor endowments (e.g., abundance of certain minerals, rich agricultural soil). For example, countries rich in certain metals would specialize in the production goods that rely on those metals.

Yet, there are many instances in which international trade happens regardless of need, or in a non-utilitarian manner. Nowhere does this seem more evident than in the modern electronic marketplaces. Good examples here are the electronic marketplaces created by companies such as eBay, which allow individuals and organizations to buy goods and services

Figure 1. David Ricardo (Source: www.eumed.net)



around the world. eBay was founded in 1995 by Pierre Omidyar and is arguably the most successful electronic trading company in the world.

The following story has become part of eBay's lore and illustrates the above point. The first item sold on eBay through an electronic auction was a broken laser pointer, for a little less than \$15. Surprised, eBay's founder Omidyar contacted the buyer and asked why someone would want to buy a laser pointer that was broken. The answer provided by the buyer was that someone may want to collect broken laser pointers.

Perhaps there are other, deeper reasons why people trade goods and services. This may sound counterintuitive, but there is some evidence from the field of evolutionary psychology that human beings may have what we could call a "trading instinct." That is, human beings in general may have an innate compulsion to engage in trade; a compulsion that is influenced by our genetic makeup and that has been endowed on us by evolutionary selection.

The field of evolutionary psychology is concerned with the study of genetically influenced instincts that were adaptive in our evolutionary past (Barkow et al., 1992; Buss, 1999). Those instincts may or may not play a positive role in our lives today. For example, our craving for foods with high calorie content today is believed to be an instinct motivated by the scarcity of those foods in our ancestral past.

THE EVOLUTIONARY VIEW OF TRADE

Meg Whitman, the longtime Chief Executive Officer of eBay, has said many times

that trading is in the human DNA. This statement has been often given in response to questions related to the utilitarian view of trade. According to the utilitarian view of trade, there is always the possibility that trade may reach a saturation point or even go down, as people acquire everything that they possibly need for utilitarian purposes.

However, if trade is somehow and at least in part genetically induced, then human beings will keep on trading regardless of their need for certain goods or services. This assumption, if correct, certainly bodes well for companies that earn revenue by intermediating trades, and eBay is the leader in this area in the world at the moment.

If the propensity to trade is an instinct that is somehow genetically influenced, one would expect it to be a human universal. That is, one would expect trade to occur in all cultures, not only in one or two. If a variety of different cultures engage in trade, then it is less likely that trade is a cultural artifact, which opens the door for the conclusion that trade is somehow influenced by an instinct.

A look at different cultures today allows us to reach the same conclusion that Murdock (1958) reached almost 50 years ago in a compilation of 67 human universals, which is that trade is found in every culture in the world. This is true regardless of the apparent level of development of the culture. Trade is present in cultures perceived as primitive as well as in cultures perceived as highly advanced.

So, if we have a trading instinct, why is it that such instinct evolved and became part of our genetic inheritance? Or, in

other worlds, why has the evolution of a trading instinct been adaptive in our evolutionary past? Since the fossil record provides limited evidence to answer these questions, one must resort to the study of so-called primitive cultures to understand the possible advantage of trade from a reproductive fitness perspective.

Cultures that are perceived as primitive, such as hunter-gatherer native Indian cultures in the Amazon, are likely to have a lifestyle that is similar to that of our hominid ancestors. So, if trade enhances the reproductive fitness of the individuals that engage in it—that is, their ability to pass on their genes to the next generation—then a study of such hunter-gatherer cultures should shed some light on why this should be so.

One of the most compelling and enlightening long-term studies of non-urban cultures was conducted by Napoleon A. Chagnon of the Yanomami, a native Indian group inhabiting a portion of the Amazon jungle on the border of Venezuela and

Brazil (see Figure 2). Chagnon's (1977) portrayal of the Yanomami as a fierce and violent people contradicted the view of the noble savage that was popular among anthropologists at the time. That portrayal was nevertheless consistent with the early work of ethologists, and more recent work by evolutionary psychologists, suggesting that human beings are likely to be violent by nature. The following quote illustrates Chagnon's portrayal of the Yanomami:

The thing that impressed me most was the importance of aggression in their culture. I had the opportunity to witness a good many incidents that expressed individual vindictiveness on the one hand and collective bellicosity on the other. These ranged in seriousness from the ordinary incidents of wife beating and chest pounding to dueling and organized raiding by parties that set out with the intention of ambushing and killing men from enemy villages. (Chagnon, 1977, p. 2)

Figure 2. Napoleon Chagnon with the Yanomami (Source: news.boisestate.edu)



The Yanomami's propensity toward violence against members of different villages provides the basis on which we can understand the role of trade from an evolutionary perspective. Violence generally leads to a decrease in reproductive fitness among those involved. For example, violent interactions would likely lead to a certain percentage of deaths among those involved (both winners and losers), and thus a decrease in the probability that the individuals involved would pass on their genes to the next generation. Here, Chagnon's insightful ethnographic study of the Yanomami highlights the role that trade likely had in reducing violence among members of trading villages:

Each village has one of more special products that it provides to its allies. These include such items as dogs, hallucinogenic drugs (both cultivated and collected), arrow points, arrow shafts, bows, cotton yarn, cotton and vine hammocks, baskets of several varieties, clay pots, and, in the case of several contacted villages, steel tools and aluminum pots. This specialization in production cannot be explained in terms of the distribution of natural resources ... The explanation of specialization must be sought, rather, in the sociological aspects of alliance formation. Trade functions as a social catalyst (Chagnon, 1977, p. 100)

The most interesting part of the quote above, for the purposes of the discussion presented here, is that "... [the] specialization in production cannot be explained in terms of the distribution of natural resources ...". That is, trade among the Yanomami was not carried

out for utilitarian reasons, as villages that were self-sufficient still engaged in trade to acquire goods that they could produce themselves. Yet, trade seemed to lead to alliances and thus a decrease in the likelihood that trading partners would commit violence against one other.

A simple set of predictions that follow from the discussion above can be summarized in this way: Our hominid ancestors developed an instinct that fostered a propensity to engage in trade. Trade among groups of hominids fostered the creation of alliances and therefore decreased the likelihood of fitness-impairing violence. (That is, violence that decreases one's reproductive capacity, such as group violence that results in the death of one or more individuals.) The genes that influenced the trading instinct have spread throughout the entire species, and can be observed today in the behavior of buyers and sellers. Examples of such behavior are non-utilitarian trades through electronic marketplaces like eBay.

INTERNATIONAL TRADE AND E-COLLABORATION

The discussion above suggests that a trading instinct might well have been evolved through Darwinian evolutionary processes as catalysts for social interactions. Those social interactions ultimately increased the reproductive fitness of the participants, thus spreading the genes that influenced the trading instinct throughout the human species.

Yet, the social interactions of our hominid ancestors were mostly face-to-face. In fact, there is evidence that during over 99% of our hominid evolution cycle, we have communicated primarily face-

to-face (Kock, 2005; Kock & Hantula, 2005). Therefore, one can expect that some disruption of the beneficial effects of the trading instinct, such as those leading to alliance formation and reduction in the propensity toward violence, will result from trade exchanges being carried out without any face-to-face interaction.

Of course, the above may not affect most people's propensity to trade, since the trading instinct will still exist. Nevertheless, lack of face-to-face interaction may prevent some of the social interaction benefits from being experienced in international trade situations. The large geographical distances between international trading partners typically prevent face-to-face interaction from happening. Without face-to-face interaction, trade may still take place, but with diminished social interaction benefits.

Here is where e-collaboration tools can potentially play an important role by supporting quasi-natural interaction among buyers and sellers located in different countries. This is especially true of e-collaboration tools that enable face-to-

face-like interaction, such as the widely publicized virtual reality environment called Second Life (see Figure 3), developed by the San Francisco-based company Linden Research, Inc. In Second Life, individuals can create virtual versions of themselves (called avatars), interact and collaborate with each other, and trade in virtual dollars. The virtual dollars are exchangeable for actual currency; U.S. dollars only, at the time of writing.

The above discussion suggests that trade is a form of social grooming (see, e.g., Dunbar, 1996). Therefore media naturalness theory (Kock, 2005), which essentially argues that human beings have a brain designed to communicate primarily face-to-face, leads to the conclusion that the use of communication media with a high degree of naturalness may contribute to the social grooming effect of trade.

According to media naturalness theory, different media present different levels of an attribute called naturalness. The level of naturalness of an electronic communication medium is presented as

Figure 3. A journalist and his avatar in Second Life (Source: www.gawker.com)



correlated with the degree of similarity between the electronic medium and the face-to-face medium. Key elements present in face-to-face communication are synchronicity (i.e., same-time interaction), physical co-location, the ability to convey and listen to speech, the ability to employ and observe facial expressions, and the ability to employ and observe body language during communication interactions (Kock, 2005).

An electronic trade Web site that supported text-based chat-like interaction between sellers and buyers would be preferable, in that respect, to a site that enabled only asynchronous e-mail-like interaction. A site supporting audio-conferencing interaction would be preferable to one supporting only text-based chat-like interaction. A site supporting video-conferencing interaction would be preferable to one supporting only audio-conferencing interaction, and so on.

ACHIEVING WORLD PEACE THROUGH TRADE AND E-COLLABORATION

The argument put forth here is made up of four main parts. The first is that human beings have evolved a trading instinct through Darwinian processes, with trade operating as a social interaction catalyst that decreased the chance of conflict between trading groups. The second part of the argument is that the naturalness of the communication medium through which trade takes place is related to the degree of effectiveness of the trading instinct to operate as a social catalyst. That is, trade is more likely to be a social catalyst and conflict suppressor if it is carried out through a communication medium of high naturalness.

That is, in the absence of a medium of high naturalness, trade may effectively fulfill a utilitarian role. However, it may not play the desirable social catalyst and conflict suppression roles that it has been originally designed by human evolution to play. This sets the stage for the third part of the argument put forth here, which is that international trade is more likely to rely on media of low naturalness to take place than local trade. This is primarily because of the geographic distance separating buyers and sellers engaged in international trade interactions, and the fact that currently, most of these interactions rely on text-based asynchronous electronic communication tools. Examples of those tools are e-mail and electronic data interchange systems; the latter are also known as EDI.

Low medium naturalness is not the only obstacle to the fulfillment of the trading instinct's social goals. The widespread use of wholesale trade can also create similar obstacles. This is especially the case in wholesale trade conducted by profit-seeking organizations on behalf of individuals, instead of retail trade conducted by the individuals themselves. The reason is that wholesale sale requires significantly less one-on-one human interaction to be accomplished than retail trade. Incidentally, wholesale trade is significantly more common in international trade than is retail trade.

Arguably the above situation is a problematic one, especially when we look at recent news in connection with international conflict. Judging from recent events, it seems that the greatest potential for conflict in modern society is between groups that are raised and educated in

different countries. Not only are those groups geographically apart, but also often separated by deep cultural disparities. This opens the door for the fourth and final part of the argument advanced here, which is that e-collaboration tools with high levels of naturalness can support the type of rich trade interaction that enable the trading instinct to have its evolutionarily adaptive positive social impact.

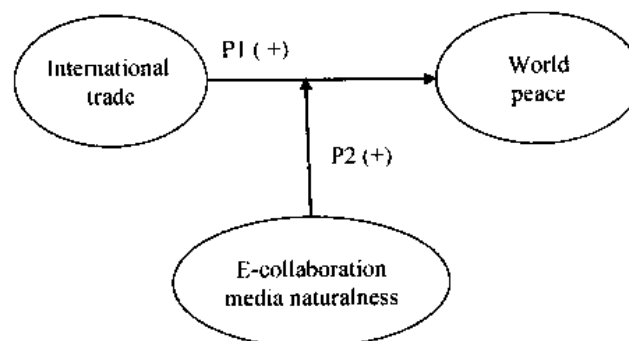
Theoretical propositions can be developed incorporating the predictions of each of the four parts of the argument discussed above. Those theoretical propositions could be depicted as a causal model. At its simplest form, the model would contain two causal propositions, or propositions that connected pairs of independent and dependent variables (see Figure 4). Proposition P1 predicts that the degree of international trade will be positively related to the degree of world peace observed. Proposition P2 is that the degree of e-collaboration media naturalness through which international trade takes place positively moderates the

relationship between international trade and world peace.

As pointed out by Popper (1992), no theoretical model is of much value if it cannot be falsified. And how can the model depicted in Figure 4 be tested and thus falsified? At first glance, the wide encompassing nature of the model makes it virtually impossible to falsify. However, that assumption proves to be wrong when we look into the testability of the fundamental predictions of the model. Those fundamental predictions can be tested in field investigations of countries that engage in different levels of trade using various e-collaboration media, and even in semi-controlled experimental studies.

One possible and realistic test of the model would entail the following. Several countries could set up shop in two virtual reality environments, one with a high degree of naturalness and one with a low degree of naturalness, and let their virtual citizens engage in actual retail trade. The virtual reality environment with a high degree of naturalness could be Second Life. The virtual reality environment with

Figure 4. Key theoretical propositions



a low degree of naturalness could be one in which buyers and sellers would interact primarily electronically through text and in an asynchronous manner.

Data would then be collected from the citizens of the various countries that actually traded among themselves, before and after the trading interactions occurred. The data would be primarily about the citizens' propensity to engage in conflict with those citizens of other countries with which they traded. If propensity to engage in conflict were significantly higher for before trade than for after trade data, then one could conclude that the data supported proposition P1. If that was not the case, the data would be seen as contradicting P1, and thus falsifying the theoretical model.

If propensity to engage in conflict were significantly higher in the high degree of naturalness than in the low degree of naturalness environment, for after trade data, then one could conclude that the data supported proposition P2. That is, proposition P2 would be tested as an interaction effect between degree of e-collaboration media naturalness and international trade, where the degree of naturalness is expected to positively moderate the effect of international trade on world peace.

As can be inferred from the discussion above, the type of research that would validate the theoretical model proposed here would be probably costly and difficult to implement. Nevertheless, given the high stakes associated with the underlying phenomenon, conducting research on this issue is arguably a must. World peace is not only desirable; the alternative is likely to be disastrous for the human

species as a whole. Perhaps we can use knowledge about survival in our ancient past to save lives today, even though the environments of our hominid ancestors were much different than the ones created by modern societies.

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