
Trade and Warfare in Cross-Cultural Perspective*

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ABSTRACT

Our cross-cultural tests suggest that the correlation between the importance of trade and warfare frequency is rather different for polities of different types. For independent communities we observe a significant negative correlation between importance of trade and internal warfare frequency. For simple chiefdoms we observe a significant negative correlation between importance of trade and the frequency of external warfare. For complex chiefdoms we do not find any significant correlation between trade and war at all. For the states we observe a significant positive correlation between the importance of trade and the frequency of external (but not internal) warfare, which turns out to be particularly strong for pre-Modern and Early Modern large states/empires. Our findings, of course, do not exclude the possibility that in the contemporary world the trade can contribute, with other influences, to peace.

INTRODUCTION

There does not seem to be any unanimity as regards the influence of trade on warfare frequency.

The view of so called ‘realists’ is that economical interdependence leads to greater security competition (Mearsheimer 1992: 223). The modern realist understanding of economic interdependence and war finds its roots in mercantilist writings dating from the seventeenth century. Mercantilists saw states as locked in a competition for relative power and for the wealth that underpins that power

(about this see *e.g.*, Hecksheker 1931: 15; Viner 1948; Baldwin 1985: Chapter 5). For mercantilists, imperial expansion – the acquisition of colonies – is driven by the state's need to secure greater control over sources of supply and markets for its goods, and to build relative power in the process.

An intermediate point of view was expressed by Dave Copeland who offers a new theory about correlation between economic independence and war. He suggests that when expectations for trade are positive, leaders expect to realize the benefits of trade into the future and therefore have less reasons for war now; trade will indeed 'constrain'. If, however, leaders are pessimistic about future trade, fearing to be cut off from vital goods or believing that current restrictions will not be relaxed, then the negative expected value of peace may make war the rational strategic choice (Copeland 1996).

The idea that wars could be reduced by expanding trade was expressed already in the early seventeenth century by Emeric Crucé (Russet and Oneal 2001: 127–128) and later developed by Kant in his famous essay *Perpetual Peace* (1970 [1795]). 'François Quesnay, Anne Robert Turgot, and the French Physiocrats; Adam Smith, David Ricardo, and John Stuart Mill, in England; and Thomas Paine, in the United States, were other theoreticians or political figures who emphasized the role of economic relations in promoting peace' (Russet and Oneal 2001: 128; see also Howard 1978). Important contributions here were made in the 1850s by the Manchester school of 'commercial liberalism', and especially by Richard Cobden (see *e.g.*, 1903: 225) who believed that trade 'unites' states, whereas cost of war made it anachronistic. This theory is sometimes called 'liberal'. One of its adherents, Norman Angell, believed that war was 'commercially suicidal' (Angell 1933: 33, 59–60, 87–89). In the 1980s the liberal view on the subject was very clearly expressed by Richard Rosecrance who suggests that states must choose between being 'trading states', concerned with promoting wealth through commerce, and 'territorial states', obsessed with military expansion. Rosecrance summarizes the liberal view by stating that high interdependence fosters peace by making trading more profitable than invading (1986: 13–14, 24–25).

Recently the most convincing elucidation of the 'liberal' position on this point has been suggested by Russett and Oneal:

The benefits of trade may not be symmetrical and may favor the side with the stronger economic power in the market, but trade is always to some degree a mutually beneficial interaction; otherwise, it would not be undertaken. This gives each party a stake in the economic well-being of the other – and in avoiding militarized disputes... It is hardly in a state's interest to fight another if its citizens sell their goods, obtain imports (raw materials, capital goods, intermediate products, or consumer goods), or have financial investments or investors there... Of course, trade can be redirected, at least over time, by political leaders who see the clouds of war on the horizon. But goods and services from alternative suppliers would cost more and/or be inferior in quality, and shifting exports means competing with existing suppliers elsewhere, lower prices, and less profit. Indeed, the need to switch to the second-best trading partner may involve such high costs that a state is seriously vulnerable to a disruption of trade (Russett and Oneal 2001: 129–130).

TESTS

In our first tests we calculated correlations between an indicator of importance of trade¹ and variables measuring external², internal³ and overall⁴ warfare frequency using the Standard Cross-Cultural Sample (Murdock and White 1969; SCCS 2002) (see Table 1). The sample consists of 186 cultures representing all the main ethnographic areas of the world (however, the data on warfare frequencies in 26 cultures of the sample have turned out to be impossible to obtain).

To start with, the overall tests do not show any significant correlation between indicators of warfare frequency and importance of trade index.

However, we have all grounds to expect that the relationship between the importance of trade and warfare frequency could be rather different for stateless cultures, on the one hand, and states, on the other.

Indeed, warfare should be most disruptive for trade just in stateless societies. On the other hand, the Embers have shown that resource problems, particularly those created by unpredictable weather or pest disasters strongly predict warfare frequency (C. R. Ember and M. Ember 1990, 1992a; see also M. Ember 1982; Shankman 1991), especially, for stateless cultures. Those findings appear quite logical, as independent communities facing unpredictable weather or pest disasters in order to survive might not have any other choice but to wage wars against neighboring communities. As developed trade would tend to alleviate resource problems, this finding suggests that within such a context trade could negatively correlate with warfare frequency.

Note, for example, the situation which was observed in the Arabian Peninsular at the beginning of the 7th century CE. This period evidenced an almost complete absence of significant inter-tribal⁵ warfare in Western Arabia till the start of the clashes with the Muslims⁶. It is highly remarkable that this happened against the background of rapid development of trading networks in this area (Simon 1989). On the other hand, as has been shown by Crone (1987), the main items of this trade were skins, hides and food-stuffs, *i.e.* the ones most suitable for sustaining of safety net for bedouin communities.

The trade was conducted mainly in the four sacred months (*ashhur ḥurum* [أشهر حرم]) when any warfare (as well as any spilling of human blood) was most strongly prohibited (*e.g.*, Ibn Hisham 1858–1860). The trade was mainly performed at fairs organized near a number of sanctuaries (first of all in al-`Ukāz, dhū-l-Majāz, Majannah and some sanctuaries of the Meccan *Ḥaram*) together with pilgrimages to them (this arrangement, of course, further enhanced the safety of trade). It was in the pilgrimage-fairs (*mawāsim* [مواسم]) at the above mentioned sanctuaries

that traditional tribal society established its manifold contacts, the exchange of the religious and cultural ideas, as well as the barter of products with only use-value. Furthermore, the various legal problems (armistice, debts, benefits, payment of blood-money, bailing out of prisoners, finding of clients, looking for disappeared persons,

questions of heritage, etc.) of the participants were also settled there. This exchange of ideas and goods, as well as the spreading of legal customs and cults common to several tribes, that is, regular social contact in general, played no negligible role in the extension of particular tribal consciousness (Simon 1989: 90; also see especially Wellhausen [1897: 88–91]).

It is remarkable that this system formed within the environment characterized precisely by unpredictable natural disasters (first of all rather frequent but unpredictable droughts) destroying food supplies (Korotayev, Klimenko and Proussakov 1999). Note that the very functioning of the system described above would almost inevitably decrease warfare frequency within it. *E.g.*, societies belonging to such a system could hardly get the highest rating of warfare frequency ('18 = Warfare seems to occur almost constantly and at anytime of the year'). Indeed the formation of the above-described trading network in the 6th century CE appears to have led immediately to a significant decrease of overall warfare frequency, whereas the rapid growth of trade in the early 6th century led to its drop to an almost zero level (Simon 1989).

Hence, we had certain grounds to expect that in stateless cultures warfare frequency would correlate negatively with the importance of trade. Our cross-cultural tests of this hypothesis have produced the following results (see Table 2).

Thus, in our sample of independent communities and simple chiefdoms we find a significant negative correlation between overall warfare frequency and frequency of external warfare, on the one hand, and the importance of trade, on the other. However, for the same sample the negative correlation between the frequency of internal warfare and the importance of trade turns out to be of only marginal significance (at least by conventional standards, though for the sample of the SCCS size such a significance may well be regarded as acceptable).

These findings might not look particular logical; however, on a closer inspection they turn out to be just quite logical. Indeed, the summary picture presented above hides behind it rather different patterns evidenced for independent communities, on the one hand, and simple chiefdoms, on the other. Indeed, for independent com-

munities we observe a significant negative correlation between the importance of trade and INTERNAL warfare frequency ($Rho = -0.22$; $p = 0.04$) and only marginally significant negative correlation between the importance of trade and EXTERNAL warfare frequency ($Rho = -0.16$; $p = 0.09$). On the other hand, for simple chiefdoms we observe a significant negative correlation between the importance of trade and EXTERNAL warfare frequency ($Rho = -0.28$; $p = 0.04$) and totally insignificant correlation between the importance of trade and INTERNAL warfare frequency ($Rho = -0.05$; $p = 0.39$). It seems also relevant to note a particularly strong correlation observed for simple chiefdoms between external warfare frequency and V732 'Importance of Trade in Subsistence'⁷ ($Rho = -0.63$; $p = 0.006$).

These results could hardly be called unexpected. Indeed, for independent communities facing extinction at the face of unpredictable natural disasters destroying food supplies (against the background of absent trade) the most evident option would be to wage wars against neighboring communities (and this would be normally classified as 'internal warfare'). On the other hand, within a similar set of consequences for chiefdoms the main option would be to wage wars against other chiefdoms rather than to war within themselves. Consequently, the development of trade would affect in each case first of all the respective types of warfare. On the other hand, it will be the internal warfare which would mainly interrupt the trade between communities, whereas this will be mainly the external warfare which would be mainly interrupting the trade between chiefdoms.

The trade between complex chiefdoms will not be affected by warfare to such a significant extent as the one between independent communities or between simple chiefdoms. Indeed, complex chiefdoms turned out quite frequently to be capable of combining quite extensive warfare with rather active trading activities (see *e.g.*, Goldman 1970).

Hence, it hardly appears surprising to find the absence of any significant correlation between warfare frequency and importance of trade for this part of the sample (see Table 3).

What correlations between warfare frequency and importance of trade should we expect for the states? To start with, the Embers (1992a) seem to believe that the threat of natural disasters destroy-

ing food supplies is a major predictor of warfare frequency not only for the stateless cultures, but also for the states. However, they make some important reservations:

It appears that this theory applies particularly strongly to non-state societies; the multiple *Rs* (with and without the outliers) are higher when we exclude state societies. But why should this be? There may be at least two reasons. First, in addition to disasters that destroy food supplies, state societies may face threats to other necessary resources. If these additional threats motivate people to go to war, the natural disasters predictor should work less well by itself. Second, state societies are more likely to have redistributive mechanisms that could mitigate the effects of disasters; surpluses could be moved from disaster-free areas and therefore a threat of natural disasters might not predict warfare so strongly in state societies (C. R. Ember and M. Ember 1992a: 258).

These reservations sound very convincing indeed. In fact, a question which almost inevitably arises at this point could sound as follows: 'Can the threat of unpredictable natural disasters destroying food supplies be regarded at all as a major predictor of warfare frequency for states?' Incidentally, the Embers did not test their hypothesis for the states – in any case in their paper (1992a) they only presented results of cross-cultural tests for the whole sample and for stateless cultures. Thus we decided to perform such a test using the Embers' dataset which they kindly published in: C. R. Ember and M. Ember 1992b, 1995.

What are our theoretical expectations for this test? In general, we believe that the cases of warfare among stateless cultures are rather different from the ones between states. On the one hand, in historical record we failed to find a single case of a concrete inter-state war which could be accounted for by unpredictable natural disasters destroying food supplies or their threat. On the other hand, one has to keep in mind essential differences between warfare in stateless and state cultures. For an independent community to wage war against its neighbors could be the only realistic way to survive in the context of unpredictable natural disaster (especially, against the background of absent trade) to a considerable extent because its relative military potential should not be undermined to a critical extent, as it would not be likely to possess any developed

military infrastructure which could be affected by such disasters, and in any case the neighboring communities would be likely affected by them to a similar extent. For states experiencing such disasters a similar decision would be rather irrational, as they would be likely to possess a more or less developed military infrastructure bound to be strongly affected by such disasters. On the other hand, they would possess nonmilitary means to counter natural disasters. Thus an option more expected of the states within such a context should be rather to avoid any wars before the negative effects of a natural disaster are overcome.

Hence, we expected the correlation between the threat of natural disasters and warfare frequency to be negative. Our test has confirmed our expectations. What we did not really expect is that this correlation would be so strong: $Rho = -0.77$; $p = 0.02^8$.

Thus, for states we have no grounds to expect the above described mechanism of negative relationship between the importance of trade and warfare frequency to work. On the other hand, the Standard Cross-Cultural Sample includes mainly pre-Modern and Early Modern states, whereas these turn out to be just the type of the states for which the 'realist' position appears most grounded:

Trade relationships do not appear to lessen the chance of war. Rather, disputes between trading partners escalate to war more frequently than disputes between nations that do not trade much with each other (C. R. Ember, M. Ember and Peregrine 2002: 417; see also *e.g.*, Singer 1980).

Indeed, warfare does not appear to disrupt trade within the states. For example, in the 18th and 19th centuries, Russia was engaged in almost constant warfare; however, this very period evidenced very rapid development of both internal and external trade of Russia (*e.g.*, Mironov 1999). What is more, frequently intensification of trade and escalation of military expansion of the states turned out to be connected very closely. For example, within the Aztec Empire the service of royal merchants (*oztomeca*, or *pochteca*)

was considered to be an equivalent of military service, as when they undertook a trading expedition they performed functions of scouts... Because of the constant aggressiveness of the Aztecs the *pochteca*'s trading partners always treated their arrival with great caution: peaceful penetration of the Aztecs was usually followed by military subjugation (Baglay 1998: 235, 238).

Hence, we had grounds to expect a positive correlation between warfare frequency and the importance of trade for the states. And this turned out to be the case. Our cross-cultural test reveals a significant positive correlation ($Rho = 0.35$; $p = 0.04$) between the importance of trade (V819) and overall warfare frequency (V1648) for this subsample⁹.

Quite predictably this correlation turns out to be particularly strong for large states/empires (see Table 4).

Note that the reasoning mentioned above is only relevant for external war. Hence, it is hardly surprising to see that for the large states/empires the importance of trade shows a totally insignificant correlation with internal warfare.

CONCLUSIONS

Thus our cross-cultural tests suggest that the correlation between the importance of trade and warfare frequency is rather different for polities of different types. For independent communities we observe a significant negative correlation between importance of trade and internal warfare frequency. For simple chiefdoms we observe a significant negative correlation between importance of trade and the frequency of external warfare. For complex chiefdoms we do not find any significant correlation between trade and war at all. For the states we observe a significant positive correlation between the importance of trade and the frequency of external (but not internal) warfare, which turns out to be particularly strong for pre-Modern and Early Modern large states/empires.

Hence, trade might serve as an inhibitor of war (though a rather weak one), but only for simple political systems (independent communities and chiefdoms). For state systems our findings turn out to support the 'realist' position: the trade *per se* cannot guarantee peace. What is more, for pre-Modern and Early Modern large states/empires the high importance of trade turns out to be a rather strong predictor of high frequency of external warfare¹⁰.

Our findings, of course, do not exclude the possibility that in the contemporary world the trade can contribute, with other influences, to peace, as has been shown in fact by Russett and Oneal (2001: 125–156).

NOTES

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¹ V819 ‘Importance of Trade’ (Barry and Schlegel 1982, 1986: file STDS32.DAT; SCCS 2002, file STDS32.SAV). V819 ‘Importance of Trade’ is counted as percent importance in contribution to subsistence.

² *I.e.* warfare with other societies – V1650 ‘Frequency of External Warfare (resolved rating)’: C. R. Ember and M. Ember 1990, 1992a, 1992b: file STDS78.DAT; 1995: file STDS78.SAV. This and the other two warfare variables have been coded by the Embers using a 18-point scale whereby the minimum value (‘1’) indicates that ‘Warfare seems to be absent or rare’, whereas the maximum value (‘18’) indicates that ‘Warfare seems to occur almost constantly and at any time of the year’.

³ *I.e.* warfare between communities of the same society – V1649 ‘Frequency of Internal Warfare (resolved rating)’: C. R. Ember and M. Ember 1990, 1992a, 1992b, file STDS78.DAT; 1995, file STDS78.SAV.

⁴ V1648 ‘Overall frequency of warfare (resolved rating)’: C. R. Ember and M. Ember 1990, 1992a, 1992b, file STDS78.DAT; 1995: file STDS78.SAV. This variable (as well as V1649 and V1650) has the following values: 1 = Warfare seems to be absent or rare; 2–5 = intermediate values; 6 = Warfare seems to occur once every 3 to 10 years; 7–9 = intermediate values; 10 = Warfare seems to occur at least once every 2 years; 11–13 = intermediate values; 14 = Warfare seems to occur every year, but usually only during a particular season; 15–17 = intermediate values; 18 = Warfare seems to occur almost constantly and at anytime of the year.

⁵ This warfare could be classified as internal, if we treat the Western Arabian communication network as a ‘society’, or external if separate tribes regarded as independent societies.

⁶ Note that these clashes produced an immediate negative effect on the trade in this area (*e.g.*, Bol’shakov 1989).

⁷ Whyte 1985, file STDS28.DAT; SCCS 2002, file STDS28.SAV. V732 ‘Importance of Trade in Subsistence’ has the following values: 1 = Dominant, the principal subsistence activity; 2 = Co-dominant with one or more other categories; 3 = Important, but not a major subsistence activity; 4 = Present, but relatively unimportant; 5 = Insignificant, sporadic, or absent. In order to make the coding more logical we re-coded the variable in the following way: 5 = Dominant, the principal subsistence activity; 4 = Co-dominant with one or more other categories; 3 = Important, but not a major subsistence activity; 2 = Present, but relatively unimportant; 1 = Insignificant, sporadic, or absent.

⁸ For the ‘purity of experiment’ while performing the test we observed all the conditions put forward by the Embers (1992a): we omitted from the sample partly or completely pacified societies (C. R. Ember and M. Ember 1992a: 248–249). We have also observed the Embers’ data reliability demands: ‘To minimize random error in the measurements... we do not generally use a resolved rating if

the initial ratings are not the same or close. Operationally, when we say that the initial ratings of warfare frequency (by two or occasionally three different coders) were close, we are referring to one of three situations. First, the initial ratings did not disagree by more than 1 point on a 5-point ordinal scale. Second, if the initial ratings disagreed by more than 1 point, they did not straddle the boundary between low and high frequency of war; the boundary for us, which was predictive of various things in the past studies (M. Ember and C. R. Ember 1971; C. R. Ember 1975, 1978), is warfare at least once every 2 years (high) versus less often (low). And third, one of the first two coders said “don't know” and the third coder's rating was close (as defined above) to the other initial coder's numerical rating. For the coding of resource problems, which were measured on 4-point scales, close ratings are essentially the same as for warfare, with the following changes. First, the boundary was between 1 (no problem) and 2 or more (some problem or more serious problems). Second, because we think the boundary here may be more important than the difference between ratings of 2 and 3 or between 3 and 4, we decided that if two coders disagreed by only 1 point, but the different ratings were on opposite sides of the boundary, we did not consider the ratings close' (C. R. Ember and M. Ember 1992a: 247–8). In addition to this the Embers define stateless societies in the following way: ‘Nonstate societies are those coded by Murdock and Provost (1973) as other than 3 or 4 on their Scale 9; in such cases the local community is politically autonomous or there is just one level of administration above the community’ (C. R. Ember and M. Ember 1992a: 249). We performed our test for the rest of the sample; hence, actually our subsample includes not only states, but also complex chiefdoms.

⁹ We regarded as states the systems with three or more levels of political integration over community ($V_{237} > 3$).

¹⁰ Note, however, that, this relationship is not necessarily causal. Indeed, the larger the state is, and especially so for empires, the more neighbors it is likely to have. It has long been known in international relations that most wars are fought between neighbors – indeed, in the past few states had the capability or incentive to fight at great distances. Hence, more neighbors mean more opportunity for war. More neighbors also mean more opportunities for trade. So for pre-Modern and early Modern states and empires trade and warfare may be correlated without the relationship being in any way causal.

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Table 1

Correlations between Indicators of Warfare Frequency and Importance of Trade Index (for the whole world-wide sample)

		<i>Importance of Trade (V819)</i>
<i>Frequency of Internal Warfare (V1649, resolved rating)</i>	<i>Rho</i>	– 0.04
	<i>p</i> (2-tailed)	0.66
	N	152
<i>Frequency of External Warfare (V1650, resolved rating)</i>	<i>Rho</i>	– 0.07
	<i>p</i> (2-tailed)	0.41
	N	154
<i>Overall Frequency of Warfare (V1648, resolved rating)</i>	<i>Rho</i>	– 0.05
	<i>p</i> (2-tailed)	0.55
	N	160

Table 2

Correlations between Indicators of Warfare Frequency and Importance of Trade Index (for independent communities and simple chiefdoms)

		<i>Importance of Trade (V819)</i>
<i>Frequency of Internal Warfare (V1649, resolved rating)</i>	<i>Rho</i>	– 0.13
	<i>p</i> (2-tailed)	0.09
	N	105
<i>Frequency of External Warfare (V1650, resolved rating)</i>	<i>Rho</i>	– 0.2
	<i>p</i> (2-tailed)	0.02
	N	108
<i>Overall Frequency of Warfare (V1648, resolved rating)</i>	<i>Rho</i>	– 0.16
	<i>p</i> (2-tailed)	0.04
	N	110

Note: We regarded as independent communities the ones lacking any levels of political integration over them (V237 = 1) and as simple chiefdoms the systems with one level of political integration over community (V237 = 2). V237 ‘Jurisdictional Hierarchy beyond Local Community’: 1 = No levels (no political authority beyond community); 2 = One level (e.g., petty chiefdoms); 3 = Two levels (e.g., larger chiefdoms); 4 = Three levels (e.g., states); 5 = Four levels (e.g., large states) – see Murdock 1967, 1981, 1985: file STDS10.DAT; SCCS 2002: file STDS10.SAV.

Table 3

Correlations between Indicators of Warfare Frequency and Importance of Trade Index (for complex chiefdoms)

		<i>Importance of Trade (V819)</i>
<i>Frequency of Internal Warfare (V1649, resolved rating)</i>	<i>Rho</i>	- 0.15
	<i>p</i> (2-tailed)	0.51
	N	21
<i>Frequency of External Warfare (V1650, resolved rating)</i>	<i>Rho</i>	- 0.002
	<i>p</i> (2-tailed)	0.99
	N	21
<i>Overall Frequency of Warfare (V1648, resolved rating)</i>	<i>Rho</i>	- 0.04
	<i>p</i> (2-tailed)	0.88
	N	18

Note: We regarded as complex chiefdoms the systems with two levels of political integration over community (V237 = 3).

Table 4

Correlations between Indicators of Warfare Frequency and Importance of Trade Index (for large states/empires*)

		<i>Importance of Trade (V819)</i>
<i>Frequency of Internal Warfare (V1649, resolved rating)</i>	<i>Rho</i>	- 0.22
	<i>p</i> (2-tailed)	0.53
	N	10
<i>Frequency of External Warfare (V1650, resolved rating)</i>	<i>Rho</i>	+ 0.62**
	<i>p</i> (2-tailed)	0.03
	N	10
<i>Overall Frequency of Warfare (V1648, resolved rating)</i>	<i>Rho</i>	+ 0.58
	<i>p</i> (2-tailed)	0.04
	N	10

Notes: * We regarded as large states/empires the systems with four or more levels of political integration over community (V237 = 5).

** Note that the positive correlation between both external and overall warfare frequency, on the one hand, and V732 ‘Importance of Trade in Subsistence’, on the other, is even higher (*Rho* = + 0.8; *p* = 0.009).