

# [Economic interdependence](https://assignbuster.com/economic-interdependence/)

[](https://assignbuster.com/)[Economics](https://assignbuster.com/essay-subjects/economics/)

Economic Interdependence and War: A Theory of Trade Expectations Author(s): Dale C. Copeland Source: International Security, Vol. 20, No. 4 (Spring, 1996), pp. 5-41 Published by: The MIT Press Stable URL: http://www. jstor. org/stable/2539041 Accessed: 12/10/2010 13: 07 Your use of the JSTOR archive indicates your acceptance of JSTOR's Terms and Conditions of Use, available at http://www. jstor. org/page/info/about/policies/terms. jsp.

JSTOR's Terms and Conditions of Use provides, in part, that unless you have obtained prior permission, you may not download an entire issue of a journal or multiple copies of articles, and you may use content in the JSTOR archive only for your personal, non-commercial use. Please contact the publisher regarding any further use of this work. Publisher contact information may be obtained at http://www. jstor. org/action/showPublisher? publisherCode= mitpress.

Each copy of any part of a JSTOR transmission must contain the same copyright notice that appears on the screen or printed page of such transmission. JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use informationtechnologyand tools to increase productivity and facilitate new forms ofscholarship. For more information about JSTOR, please contact[email protected]org.

The MIT Press is collaborating with JSTOR to digitize, preserve and extend access to International Security. http://www. jstor. org Economic DaleC. Copeland Interdependence and War A Theory of Trade Expectations Does economic inter- dependence increase or decrease the probability of war among states? With theCold Warover, this question is taking on importance as trade levels between established powers such as the United States and Russia and emerging powers such as Japan, China, and Western Europe grow to new heights.

In this article, I provide a new dynamic theory to help overcome some of the theoretical and empirical problems with current liberal and realist views on the question. The prolonged debate between realists and liberals on the causes of war has been largely a debate about the relative salience of different causal variables. Realistsstresssuch factors as relative power, while liberals focus on the absence or presence of collective security regimes and the pervasiveness of democratic communities. Economic interdependence is the only factor that plays an important causal role in the thinking of both camps, and their perspectives are diametrically opposed. Liberals argue that economic interdependence lowers the likelihood of war by increasing the value of trading over the alternative of aggression: interdependent states would rather trade than invade. As long as high levels of Dale C. Copelands AssistantProfessorn the Department f Governmentnd ForeignAffairsat the i i o a University f Virginia. o

For their helpful comments on previous drafts of this article, I would like to thank Robert Art, V. Natasha Copeland, Michael Desch, Angela Doll, John Duffield, Matthew Evangelista, Richard Falkenrath, James Fearon, Joseph Grieco, Atsushi Ishida, Irving Lachow, Alastair lain Johnston, Andrew Kydd, Jack Levy, Lisa Martin, Michael Mastanduno, John Mearsheimer, Andrew Moravcsik, John Owen, Paul Papayoanou, Stephen Rhoads, Gideon Rose, Richard Rosecrance, Len Schoppa, Herman Schwartz, Randall Schweller, Jitsuo Tsuchiyama, David Waldner, and Stephen Walt.

This article also benefited from presentations at the Program on International Politics, Economics, and Security at the University of Chicago; the University of Virginia Department of Government's faculty workshop; the annual meeting of the American PoliticalScienceAssociation, Chicago, September 1995; the Olin security workshop at the Center for International Affairs, HarvardUniversity; and the Center for Science and International Affairs, Harvard University (under whose auspices it was written). All errors remain mine. 1.

For a summary of the causal variables in the two schools, see John J. Mearsheimer, " Back to the Future: Instability in Europe After the Cold War," InternationalSecurity, Vol. 15, No. 1 (Summer 1990), pp. 5-56; Robert 0. Keohane, " International Liberalism Reconsidered," in John Dunn, ed. , The EconomicLimits to ModernPolitics (Cambridge: Cambridge University Press, 1990), pp. 165-194. InternationalSecurity, Vol. 20, No. 4 (Spring 1996), pp. 5-41 ? 1996 by the President and Fellows of Harvard College and the Massachusetts Institute of Technology InternationalSecurity 20: 4 | 6 interdependence can be maintained, liberals assert, we have reason for optimism. Realists dismiss the liberal argument, arguing that high interdependence increases rather than decreases the probability of war. In anarchy, states must constantly worry about their security. Accordingly, interdependence-meaning mutual dependence and thus vulnerability-gives states an incentive to initiate war, if only to ensure continued access to necessary materials and goods.

The unsatisfactory nature of both liberal and realist theories is shown by their difficulties in explaining the run-ups to the two World Wars. The period up to World War I exposes a glaring anomaly for liberal theory: the European powers had reached unprecedented levels of trade, yet that did not prevent them from going to war. Realists certainly have the correlation right-the war was preceded by high interdependence-but trade levels had been high for the previous thirty years; hence, even if interdependence was a necessary condition for the war, it was not sufficient.

At first glance, the period from 1920 to 1940 seems to support liberalism over realism. In the 1920s, interdependence was high, and the world was essentially peaceful; in the 1930s, as entrenched protectionism caused interdependence to fall, international tension rose to the point of world war. Yet the two most aggressive states in the system during the 1930s, Germany and Japan, were also the most highly dependent despite their efforts towards autarchy, relying on other states, including other great powers, for critical raw materials.

Realism thus seems correct in arguing that high dependence may lead to conflict, as states use war to ensure access to vital goods. Realism's problem with the interwar era, however, is that Germany and Japan had been even more dependent in the 1920s, yet they sought war only in the late 1930s when their dependence, although still significant, had fallen. The theory presented in this article-the theory of trade expectations-helps to resolve these problems.

The theory starts by clarifying the notion of economic interdependence, fusing the liberal insight that the benefits of trade give states an incentive to avoid war with the realist view that the potential costs of being cut off can push states to war to secure vital goods. The total of the benefits and potential costs of trade versus autarchy reveals the true level of dependence a state faces, for if trade is completely severed, the state not only loses the gains from trade but also suffers the costs of adjusting its economy to the new situation.

Trade expectations theory introduces a new causal variable, the expectations of future trade, examining its impact on the overall expected value of the trading option if a state decides to forgo war. This supplements the static Economicnterdependence War| 7 and I consideration in liberalism and realism of the levels of interdependence at any point in time, with the importance of leaders' dynamic expectations into the future. Levels of interdependence and expectations of future trade, considered simultaneously, lead to new predictions.

Interdependence can foster peace, as liberals argue, but this will only be so when states expect that trade levels will be high into the foreseeable future. If highly interdependent states expect that trade will be severely restricted-that is, if their expectations for future trade are low-realists are likely to be right: the most highly dependent states will be the ones most likely to initiate war, for fear of losing the economic wealth that supports their long-term security. In short, high interdependence can be either peace-inducing or war-inducing, depending on the expectations of future trade.

This dynamic perspective helps bridge the gaps within and between current approaches. Separating levels of interdependence from expectations of future trade indicates that states may be pushed into war even if current trade levels are high, if leaders have good reason to suspect that others will cut them off in the future. In such a situation, the expected value of trade will likely be negative, and hence the value of continued peace is also negative, making war an attractive alternative.

This insight helps resolve the liberal problem with World War I: despite high trade levels in 1913-14, declining expectations for future trade pushed German leaders to attack, to ensure long-term access to markets and raw materials. Even when current trade is low or non-existent, positive expectations for future trade will produce a positive expected value for trade, and therefore an incentive for continued peace. This helps explain the two main periods of detente between the Cold War superpowers, from 1971 to 1973 and in the late 1980s: positive signs from U. S. eaders that trade would soon be significantly increased coaxed the Soviets into a more cooperative relationship, reducing the probability of war. But in situations of low trade where there is no prospect that high trade levels will be restored in the future, highly dependent states may be pushed into conflict. This was the German and Japanese dilemma before World War II. The article is divided into three sections. The first section reviews liberal and realist theories on the relationship between economic interdependence and the probability of war, and provides a critique of both theories.

The second section lays out trade expectations theory The final section examines the diplomatic historical evidence for the new theory against two significant cases: Germany Internationalecurity20: 4 | 8 S before World War I and Germany before World War II. The evidence indicates that the new variable, expectations of future trade, helps resolve the anomalies for current theories: in both cases, negative expectations for future trade, combined with high dependence, led leaders into total war out of fear for their long-term economic position and therefore security.

TheLiberal nd RealistDebateon Economic nterdependence a I War and The core liberal position is straightforward. 2 Trade provides valuable benefits, or " gains from trade," to any particular state. A dependent state should therefore seek to avoid war, since peaceful trading gives it all the benefits of close ties without any of the costs and risks of war. Trade pays more than war, so dependent states should prefer to trade not invade. This argument is often supported by the auxiliary proposition that modern technology greatly increases the costs and risks of aggression, making the trading option even more rational.

The argument was first made popular in the 1850s by Richard Cobden, who asserted that free trade " unites" states, " making each equally anxious for the prosperity andhappinessof both. " 3 This view was restated in The GreatIllusion by Norman Angell just prior to World War I and again in 1933. Angell saw states having to choose between new ways of thinking, namely peaceful trade, and the " old method" of power politics. Even if war was once profitable, modernization now makes it impossible to " enrich" oneself through force; indeed, by destroying trading bonds, war is " commercially suicidal. 4 Why do wars nevertheless occur? While the start of World War I just after The GreatIllusion's initial publication might seem to refute his thesis, Angell in 2. Four other subsidiary liberal arguments, employing intervening variables, are not sufficiently compelling to discuss here. The first suggests that high trade levels promote domestic prosperity, thereby lessening the internal problems that push leaders into war. The second argues that interdependence helps to foster increased understanding between peoples, which reduces the misunderstandings that lead to war.

The third asserts that trade alters the domestic structure of states, heightening the influence of groups with a vested interest in peaceful trade. The final argument contends that trade has the " spill-over" effect of increasing political ties between trading partners, thus improving the prospects for long-term cooperation. For an critical analysis of these views, see Dale Copeland, " Economic Interdependence and the Outbreak of War," paper presented to University of Virginia Department of Government's faculty workshop, March 1995. 3. Richard Cobden, The Political Writings of Richard Cobden (London: T.

Fischer Unwin, 1903), p. 225. 4. Norman Angell, The GreatIllusion, 2d ed. (New York: G. P Putnam's Sons, 1933), pp. 33, 59-60, 87-89. Economicnterdependence WarI 9 I and the 1933 edition argued that the debacle simply confirmed the unprofitability of modern wars. He thus upheld the common liberal view that wars, especially major wars, result from the misperceptions of leaders caught up in the outmoded belief that war still pays. Accordingly, his is " not a plea for the impossibility of war ... but for its futility," since " our ignorance on this matter makes war not only possible, but extremely likely. 5 In short, if leaders fail to see how unprofitable war is compared to the benefits of trade, they may still erroneously choose the former. Richard Rosecrance provides the most extensive update of the CobdenAngell thesis to the nuclear era. States must choose between being " trading states," concerned with promoting wealth through commerce, and " territorial states," obsessed with military expansion. Modern conditions push states towards a predominantly trading mode: wars are not only too costly, but with the peaceful trading option, " the benefits that one nation gains from trade can also be realized by others. When the system is highly interdependent, therefore, the " incentive to wage war is absent," since " trading states recognize that they can do better through internal economic development sustained by a worldwide market for their goods and services than by trying to conquer and assimilate large tracts of land. " 6 Rosecrance thus neatly summarizes the liberal view that high interdependence fosters peace by making trading more profitable than invading. 7 5. Ibid. , pp. 59-62, 256. i S a 6. RichardRosecrance, TheRise of the Trading tate: Commercend Conquestn the ModernWorld (New York: Basic Books, 1986), pp. 3-14; 24-25 (emphasis added); see also Rosecrance, " War, a Trade and Interdependence," in James N. Rosenau and Hylke Tromp, eds. , Interdependence nd Conflict in WorldPolitics (Aldershot, U. K. : Avebury, 1989), pp. 48-57; Rosecrance, " A New Concert of Powers," Foreign Affairs, Vol. 71, No. 2 (Spring 1992), pp. 64-82. 7. A book often seen as a statement on the peace-inducing effects of interdependence-Robert 0. Keohane and Joseph S. Nye, Power and Interdependence(Boston: Little, Brown, 1977)-actually contains no such causal argument. For Keohane and Nye, " complex interdependence" is more peaceful by definition: it is a valuable concept for analyzing the political process" only when military force is " unthinkable" (pp. 29, 24). In the second edition: " since we define complex interdependence in terms of [policy]goalsand instruments," arguments " about how goals and instruments are affected by the degree to which a situation approximates complex interdependence or realism will be tautological. " Thus, " we are left essentially with two dependent variables: changes in agendas and changes in the roles of international organizations. " Keohane and Nye, Power and Interdependence, d ed. (Glenview, Ill. Scott, Foresman, 1989), p. 255; emphasis in original. 2 The dependent variable of this article-the likelihood of war-is nowhere to be found, which is not surprising, since it is assumed away. Other works on interdependence from the 1970s, which largely examined dependent variables other than war, are discussed in Copeland, " Economic Interdependence and the Outbreak of War. " InternationalSecurity 20: 4 | 10 Realists turn the liberal argument on its head, arguing that economic interdependence not only fails to promote peace, but in fact heightens the likelihood of war. States concerned about security will dislike dependence, since it means that crucial imported goods could be cut off during a crisis. This problem is particularly acute for imports like oil and raw materials; 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. Neorealist Kenneth Waltz puts the argument as follows: actors within a domestic polity have little reason to fear the dependence that goes with specialization.

The anarchic structure of international politics, however, makes states worry about their vulnerability, thus compelling them " to control what they depend on or to lessen the extent of their dependency. " For Waltz, it is this " simple thought" that explains, among other things, " their imperial thrusts to widen the scope of their control. " 9 For John Mearsheimer, nations that " depend on others for critical economic supplies will fear cutoff or blackmail in time of crisis or war. " Consequently, " they may try to extend political control to the source of supply, giving rise to conflict with the source or with its other customers. Interdependence, therefore, " will probably lead to greater security competition. " 10 8. One might contend that realists doubt the causal importance of economic interdependence, since relative gains concerns convince great powers to avoid becoming dependent in the first place. Aside from arguments showing why states may cooperate despite concerns for relative gains (see essays by Powell, Snidal, and Keohane in David A. Baldwin, ed. , Neorealismand Neoliberalism: The Contemporary ebate [New York: Columbia University Press, 1993]; Dale Copeland, " Why Relative D

Gains Concerns May Promote Economic Cooperation: A Realist Explanation for Great Power Interdependence," presented at the annual meeting of the International Studies Association, San Diego, April 1996), the argument is empirically false. Periods of high interdependence have arisen even when the security competition between great powers was particularly intense, such as from 1880 to 1914, as Waltz acknowledges. Kenneth Waltz, " The Myth of Interdependence," in Ray Maghoori and Bennett Ramberg, Globalism versus Realism (Boulder, Colo. : Westview Press, 1982), p. 83.

Since the reality of high interdependence cannot be argued or assumed away, I focus here on the core realist claim that whenever high levels of interdependence are reached, for whatever reason, war is more likely. 9. Kenneth Waltz, Theory of InternationalPolitics (New York: Random House, 1979), p. 106. 10. John J. Mearsheimer, " Disorder Restored," in Graham Allison and Gregory F Treverton, eds. , Rethinking America's Security (New York: W. W. Norton, 1992), p. 223; Mearsheimer, " Back to the Future," p. 45. See also Robert Gilpin, " Economic Interdependence and National Security in Historical Perspective," in Klaus Knorr and Frank N.

Trager, eds. , Economic Issues and National Security (Lawrence, Kan. : Allen, 1977), p. 29. Adopting the realist argument, but emphasizing how dependence leads states to adopt destabilizing offensive strategies, is Anne Uchitel, " Interdepend- Economicnterdependence War| 11 and I This 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. For mercantilists, imperial expansionthe 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. By allowing the metropole and the colonies to specialize in production and trade of complementary products (particularly manufactured goods for raw materials), while ensuring political control over the process, colonies " opened up the possibility of providing a system of supply within a self-contained empire. "'2 In this, we see the underpinning for the neorealist view that interdependence leads to war.

Mercantilistimperialismrepresents a reaction to a state's dependence; states reduce their fears of external specialization by increasing internal specialization within a now larger political realm. The imperial state as it expands thus acquires more and more of the characteristics of Waltz's domestic polity, with its hierarchy of specialized functions secure from the unpredictable policies of others. In sum, realists seek to emphasize one main point: political concerns driven by anarchy must be injected into the liberal calculus.

Since states must be primarily concerned with security and therefore with control over resources and markets, one must discount the liberal optimism that great trading partners will always continue to be great trading partners simply because both states benefit absolutely. Accordingly, a state vulnerable to another's policies because of dependence will tend to use force to overcome that vulnerability. ence and Instability," in Jack Snyder and Robert Jervis, eds. , Coping with Complexityin the International System (Boulder, Colo. : Westview Press, 1993), pp. 43-264. For Barry Buzan, since liberal free-trading systems are dependent on a hegemon which invariably declines, such systems are destined to fall into " malevolent" mercantilist practices, as states scramble to control access to goods formerly safeguarded by the hegemon. Avoiding the liberal system altogether, through a " benign" mercantilist system of self-sufficient trading blocs, will be therefore preferred. Buzan, " Economic Structure and International Security: The Limits of the Liberal Case," International Organization, Vol. 8, No. 4 (Autumn1984), esp. pp. 597, 609-623. For a similar argument, see Robert Gilpin, U. S. Power and the Multinational Corporation(New York: Basic Books), 1975, p. 259. 11. See Eli F Heckscher, Mercantilism, vol. 2, trans. Mendel Shapiro (London: George Allen, 1931), p. 15; Jacob Viner, " Power Versus Plenty as Objectives of Foreign Policy in the Seventeenth and Eighteenth Centuries," World Politics, Vol. 1, No. 1 (October 1948), p. 10; David A. Baldwin, Economic Statecraft(Princeton, N. J. : Princeton University Press, 1985), chap. . 12. Heckscher, Mercantilism, vol. 2, p. 40. InternationalSecurity 20: 4 | 12 A COMPARISON OF THE LIBERAL AND REALIST PERSPECTIVES While the liberal and the realist arguments display critical differences, they possess one important similarity: the causal logic of both perspectives is founded on an individual state's decision-making process. That is, while the two camps freely use the term " interdependence," both derive predictions from with their own specific how particular decision-making units-states-deal dependence.

This allows both theories to handle situations of " asymmetric interdependence," where one state in a dyad is more dependent than the other. Their predictions are internally consistent, but opposed: liberals argue that the more dependent state is less likely to initiate conflict, since it has more to lose from breaking economic ties; 13 realists maintain that this state is more likely to initiate conflict, to escape its vulnerability. The main difference between liberals and realists has to do with their emphasis on the benefits versus the costs of interdependence.

The realist argument highlights an aspect that is severely downplayed in the liberal argument, namely, consideration of the potential costs from the severing of a trading relationship. Most liberals, if pressed, would probably accept David Baldwin's conceptualization of dependence as the opportunity costs a state would experience should trade end. Yet Baldwin's opportunity costs are only the loss of the benefits from trade received after a state moves from autarchy. 14 It is this understanding of opportunity costs that is followed in the most comprehensive liberal argument for interdependence and peace, that of Rosecrance.

There is little sense in Rosecrance's work that a state's decision to specialize and thus to restructure its economy radically can entail huge " costs of adjustment" should trade be later severed, nor that such costs can actually put the state in a far worse position than if it had never moved from autarchy in the first place. 15 This is the concern of realists when they talk about dependence on 13. See Keohane and Nye, " World Politics and the International Economic System," in C. Fred Bergsten, ed. , The Future of the InternationalEconomicOrder (Lexington: D. C.

Heath, 1973), pp. 121122; Neil R. Richardson and Charles W. Kegley, " Trade Dependence and Foreign Policy Compliance," International Studies Quarterly, Vol. 24, No. 2 (June 1980), pp. 191-222. 14. David A. Baldwin, " Interdependence and Power: A Conceptual Analysis," International Organization, Vol. 34, No. 4 (Autumn 1980), pp. 478, 482-484, 489; Baldwin, " The Power of Positive Sanctions," WorldPolitics, Vol. 24, No. 1 (October 1971), pp. 19-38; Albert 0. Hirschman, National Power and the Structure of Foreign Trade, exp. ed. (Berkeley: University of California Press, 1980), chap. . 15. On the costs of adjustment, see Ruth Arad, Seev Hirsch, and Alfred Tovias, The Economicsof Peacemaking(New York: St. Martin's Press, 1983), pp. 26-34. Keohane and Nye examine the " costs of adjusting" as an integral part of " vulnerability" interdependence (Power and Interdependence, p. 13). Yet they do not establish the original autarchic position as a baseline for examining these costs independently from the benefits of trade forgone; this baseline is incorporated later in EconomicInterdependence nd War | 13 a " vital goods" such as oil.

A state that chooses not to buy oil from outsiders forgoes certain benefits of trade, but by operating on domestic energy sources, it avoids the heavy penalty experienced by a state that does base its industrial structure on imported oil, only to find itself cut off from supplies. That Rosecrance minimizes this realist concern is evident. In an explicit effort to refute Waltz's definition of interdependence as " a trading link which 'is costly to break'," Rosecrance contends that " to measure interdependence in this way misses the essence of the concept. His subsequent discussion emphasizes only the benefits that states give up if they choose not to trade (his " opportunity costs"), and makes no mention of any potentially severe costs of adjustment. In fact, he argues that dependence on such things as foreign sources of energy is really no different than relying on outsiders for " fashions" or different makes of cars; if trade is cut off, a state loses only " consumer choice. " Recognition that the whole industrial structure of a state might be undermined or destroyed by an adversary's severing of vital trade is absent. 6 Rosecrance is reluctant to acknowledge realist concerns, perhaps because to do so would imply that dependent states might be more willing to go to war, as realists maintain, while Rosecrance is arguing that they are less willing to do so. 17 This points to a critical distinction between liberalism and realism that illuminates the liberal understanding of why wars ultimately occur. For liberals, interdependence does not have a downside that might push states into war, as realists contend. Rather, interdependence is seen to operate as a restraint on aggressive tendencies arising from the domestic or individual levels.

If interdependence becomes low, this restraint is taken away, allowing the aggressive tendencies to dominate. To borrow a metaphor from Plato: for liberals, inter- building the new theory. Liberals also consider " costs" in terms of losses in " autonomy" due to trade ties; see Richard N. Cooper, The Economicsof Interdependence New York: McGraw Hill, 1968), ( pp. 4-12; Rosecrance, Rise of the TradingState, pp. 39-41, 235. Note, however, that these are costs that go hand in hand with high trade, not costs that are experienced if trade is cut off.

Hence, these losses in autonomy are more accurately considered as a form of sensitivity interdependencecosts incurred when trade is ongoing-rather than as a form of " vulnerability" interdependence so worrying to realists. On this, see Keohane and Nye, " International Interdependence and Integration," in Fred I. Greenstein and Nelson W. Polsby, eds. , Handbook of Political Science, vol. 8 (Reading, Mass. : Addison-Wesley, 1975), pp. 368-370. 16. Rosecrance, Rise of the Trading State, pp. 144-145. In the appendix, an iterated prisoner's dilemma is used to show the " concrete benefits" from trade cooperation.

If states decide not to cooperate, they simply "[do] not benefit"; pp. 233-236. 17. Rosecrance occasionally seems to accept that some goods are more vital than others, but even here he reiterates the liberal argument: " Countries dependent on the world economy for markets, assistance, and critical raw materials are doubly hesitant to embark on military adventures"; ibid. , p. 133, emphasis added. InternationalSecurity 20: 4 | 14 dependence operates like the reins on the dark horse of inner passions; it provides a material incentive to stay at peace, even when there are internal predispositions towards aggression.

Remove the reins, however, and these passions are free to roam as they will. 18 This point becomes clearer as one examines Rosecrance's explanations for the two World Wars. World War II, for Rosecrance, was ultimately domestically driven. The main aggressors saw war as a means to cope with the upheavals flowing from " social discontent and chaos" and the " danger of left-wing revolutions"; given these upheavals, it is " not surprising that the territorial and military-political system [i. e. , war] emerged as an acceptable alternative to more than one state. Connecting the Second World War to causes arising from the unit level in the First World War, he continues: " If Germany, Italy, and Japan did not fulfill their territorial ambitions at the end of World War I, they might develop even more nationalistic and solidaristic regimes and try again. " 19With trade and therefore interdependence at low levels in the 1930s, " economics offered no alternative possibility"; it failed to provide what he later refers to as a " mitigat[ing]" or " restraining" influence on unit-level motives for war. 0 World War I is a problematic case for Rosecrance, as it was for Angell, since the great powers went to war even though trade levels were still high. Like Angell, Rosecrance's main defense of liberalism is that leaders simply did not see how beneficial interdependence was, and how costly war would be. Due to outmoded ideas and unit-level pathologies, they misperceived the situation; hence, interdependence could not operate as it should, as a restraint on aggression. He talks about leaders' obsession with " nationalist ambitions" and " balance of power politics. He suggests that " no pre-1914 statesman or financier was fully aware of the damage that war would do to the European body economic" because of the irrational belief that "[war] would be over very 18. See Plato's Phaedrus in Phaedrus and Letters VII and VIII, trans. Walter Hamilton (Harmondsworth: Penguin, 1973), sections 246-256. The historical roots of this view are explicated in f b i P Albert 0. Hirschman, The Passionsand the Interests: oliticalArgumentsor Capitalism efore ts Triumph(Princeton: Princeton University Press, 1977).

He quotes Montesquieu (ibid. , p. 73): " It is fortunate for men to be in a situation in which, though their passions may prompt them to be wicked, they have nevertheless an interest in not being so. " 19. Rosecrance, Rise of the TradingState, pp. 102-103 (see also p. 111). Rosecrance does point out that Germany and Japan apparently went to war also to gain raw materials (ibid. , p. 108). He does not argue, however, that these two states were more dependent than other states for such materials; to have done so would suggest the validity of the realist logic. 0. See ibid. , pp. 106, 123, 150, 162. EconomicInterdependence nd War | 15 a quickly. " 21At one point, he even seems to cast doubt on the efficacy of interdependence as a restraint on aggression: One should not place too much emphasis upon the existence of interdependence per se. European nations in 1913 relied upon the trade and investment that flowed between them; that did not prevent the political crisis which led to ... World War I. Interdependence only constrains national policy if leaders accept and agree to work within its limits. 22

It thus appears that Rosecrance cannot really envision interdependence as being anything but a " constraint" or " restraint" on unit-level tendencies to aggress. This view is consistent with the general liberal perspective that all wars are ultimately driven by unit-level phenomena such as misperceptions, authoritarianism, ideology, and internal social conflict. Rosecrance's historical understanding of the World War II, for example, would fit nicely with the " democratic peace" literature: had all the states in 1939 been democratic, war would probably ot have occurred despite the disrupted global economic situation, but since some states were not democratic, their aggressive domestic forces became unfettered once interdependence had declined. The idea that economic factors by themselves can push states to aggress-an argument consistent with neorealism and the alternative theory I will present below-is outside the realm of liberal thought, since it would imply that purely systemic forces can be responsible for war, largely regardless of unit-level phenomena. 3 While liberal theory certainly downplays the realist concern for the potential costs of severed trade, it is also clear that realists slight the positive role the benefits of trade can have on a state's choice between peace and war. In the next section, I bring together the liberal emphasis on benefits with the realist emphasis on costs to create a framework for understanding the true level of dependence a state faces. This section also seeks to correct the most significant 21. See ibid. , pp. 18-19, 88, 96-97, 99, 150. 22. Ibid. , p. 141 (see also p. 150).

The argument here borders on being non-falsifiable: disconfirming cases where war occurs despite high interdependence can be sidestepped by saying simply that states did not " accept" being peaceful traders. Note as well that if states have already decided to be peaceful, then interdependence is not needed as a restraint. 23. On liberalism's inherently unit-level orientation to conflict, see Andrew Moravcsik, " Liberalism and International Relations Theory," Working Paper, Center for International Affairs, Harvard University, 1992; Michael Howard, War and the LiberalConscience (New Brunswick: Rutgers University Press, 1978).

On the democratic peace argument, see Bruce Russett, Grasping the Democratic Peace (Princeton: Princeton University Press, 1993). InternationalSecurity 20: 4 | 16 error in both liberal and realist theories, namely, their lack of theoretical attention to the dynamics of state expectations for the future. o Trade r Invade? A Theory f Trade xpectations E o This section introduces the theory of trade expectations.

This theory extends liberal and realist views regarding interdependence and war, by synthesizing their strengths while formulating a dynamic perspective on state decision-making that is at best only implicit in current approaches. The strength of liberalism lies in its consideration of how the benefits or gains from trade give states a material incentive to avoid war, even when they have unit-level predispositions to favor it. The strength of realism is its recognition that states may be vulnerable to the potential costs of being cut off from trade on which they depend for wealth and ultimately security.

Current theories, however, lack a way to fuse the benefits of trade and the costs of severed trade into one theoretical framework. More significantly, these theories lack an understanding of how rational decision-makers incorporate the future tradingenvironmentinto their choice between peace and war. Both liberalism and realism often refer to the future trading environment, particularly in empirical analyses. But in constructing a theoretical logic, the two camps consider the future only within their own ideological presuppositions.

Liberals, assuming that states seek to maximize absolute welfare, maintain that situations of high trade should continue into the foreseeable future as long as states are rational; such actors have no reason to forsake the benefits from trade, especially if defection from the trading arrangement will only lead to retaliation. 24 Given this presupposition, liberals can argue that interdependence-as reflected in high trade at any particular moment in time-will foster peace, given the benefits of trade over war.

Realists, assuming states seek to maximize security, argue that concerns for relative power and autonomy will eventually push some states to sever trade ties (at least in the absence of a hegemon). Hence, realists can insist that interdependence, again manifest as high trade at any moment in time, drives dependent states to initiate war now to escape potential vulnerability later. For the purposes of forging strong theories, however, trading patterns cannot be simply assumed a priori to match the stipulations of either liberalism or of realism.

Trade levels fluctuate significantly over time, both for the system as a 24. See Rosecrance, Rise of the TradingState, appendix. EconomicInterdependence nd War | 17 a whole and particularly between specific trading partners, as the last two centuries demonstrate. Accordingly, we need a theory that incorporates how a state's expectations of its trading environment-either optimistic or pessimistic-affect its decision-calculus for war or peace. This is where the new theory makes its most significant departure.

Liberalism and realism are theories of " comparative statics," drawing predictions from a snapshot of the level of interdependence at a single point in time. The new theory, on the other hand, is dynamic in its internal structure: it provides a new variable, the " expectations of future trade," that incorporates in the theoretical logic an actor's sense of the future trends and possibilities. 25 This variable is essential to any leader's determination not just of the immediate value of peace versus war at a particular moment in time, but of the overall expected value of peace and war over the foreseeable future.

From consideration of the expectations-of-future-trade variable along with a state's level of dependence, one can derive a consistent deductive theory of state decision-making showing the conditions under which high interdependence will lead to peace or to war. High interdependence can be peace-inducing, as liberals maintain, as long as states expect future trade levels to be high in the future: positive expectations for future trade will lead dependent states to assign a high expected value to a continuation of peaceful trade, making war the less appealing option.

If, however, a highly dependent state expects future trade to be low due to the policy decisions of the other side, then realists are likely to be correct: the state will attach a low or even negative expected value to continued peace without trade, making war an attractive alternative if its expected value is greater than peace. Moreover, since a negative expected value of trade implies a long-term decline in power, even if war is not profitable per se, it may be chosen as the lesser of two evils. 26 5. On the differences between comparative statics and dynamic analyses that incorporate the future, see Eugene Silberberg, The Structure of Economics, 2d ed. (New York: McGraw-Hill, 1990), chaps. 1, 12, and 18. 26. That is, war is rational if it has either a higher net positive value or a lower net negative value. The theory thus works regardless of whether states are innately " greedy"-seeking positive gains from war-or simply security-seekers desiring to minimize long-term threats. See Charles L.

Glaser, " Political Consequences of Military Strategy: Expanding and Refining the Spiral and Deterrence Models," WorldPolitics, Vol. 44, No. 4 (July 1992), pp. 497-538. By connecting the trading environment to fears about relative decline, I draw upon the notion that declining states launch preventive wars to uphold their waning security. Elsewhere, I build a solely power-driven theory showing why states faced with deep and inevitable decline initiate major wars. Dale Copeland, " Neorealism and the Myth of Bipolar Stability: Toward a New Dynamic Realist Theory of Major War," Security Studies, Vol. , No. 3 (Spring 1996). S 2 International ecurity 0: 4 | 18 The deductive logic of the alternative theory, as with liberalism and realism, centers on an individual state's efforts to manage its own situation of dependence. Consider a two-actor scenario, where one state " A" may trade with another state " B. " If state A moves away from the initial position of autarchy to begin trading, and trade is free and open, it will expect to receive the benefits of trade stressed by liberals, namely, the incremental increase in A's total welfare due to trade. 7 Note that a state can still be aware of the " benefits of trade" even if present trade is non-existent, since they represent the potential gains from trade that would accrue to the state should trade levels become high in the future. 28It is a state's ability to foresee future potential benefits that allows it to attach a high expected value to the peaceful trading option even when current trade levels are low (as long as it expects current restrictions to be relaxed). When a state trades, it specializes in and exports goods in which it enjoys a comparative advantage, while forgoing the production of other goods, which it then imports.

This process of specialization, however, entails potentially large costs of adjustment if trade is subsequently cut off. This is especially so in the modern world if the state becomes dependent on foreign oil and certain raw materials. With the economy's capital infrastructure (machines, factories, transportation systems, etc. ) geared to function only with such vital goods, a severing of trade would impose huge costs as the economy struggles to cope with the new no-trade situation. 29 In short, the severing of trade, as realists would argue, would put the state in a situation far worse than if it had never specialized in the first place.

This analysis leads to a clearer understanding of any particular state's total level of " dependence. " On a bilateral basis, that level is represented by the sum of the benefits that the state would receive from free and open trade with another state (versus autarchy), and the costs to the state of being cut off from that trade after having specialized (versus autarchy). If state A started with an economy of 100 units of GNP before any trade with B (the autarchic position), and open trade with B would mean economic expansion to a level of 110 units of GNP on an ongoing basis, then the " benefits of trade" could be considered as 10 units.

If the specialization that trade entails, however, would mean the 27. This is consistent with standard trade theory. See Richard E. Caves and Ronald W. Jones, World Tradeand Payments, 4th ed. (Boston: Little Brown, 1985), chaps. 3-4. 28. I thank Andrew Moravcsik for discussions on the potential benefits of trade. 29. The capital investments represent " sunk costs" not easily recouped. See Arad, Hirsch, and Tovias, The Economicsof Peacemaking, pp. 26-28. EconomicInterdependence nd War I 19 a conomy would fall to 85 units should B sever trade ties, then the " costs of severed trade" would be 15 units versus autarchy. State A's total dependence level would thus be the benefits of trade plus the costs of severed trade after specialization, or 25 units. The dependence level will itself be a function of such parameters as the overall compatibilities of the two economies for trade, the degree of A's need for vital goods such as oil and raw materials, and the availability of alternative suppliers and markets.

Thus if A's need for trade with B is great because the economies are highly compatible (say, in terms of mutual comparative advantages), B has valuable natural resources that A lacks, and A has few other countries to turn to, then A's dependence can be considered high. 30 In deciding between peace and war, however, a state can not refer simply to its dependence level. Rather, it must determine the overall expected value of trade and therefore the value of continued peace into the foreseeable future.

The benefits of trade and the costs of severed trade on their own say nothing about this expected value. Dynamic expectations of future trade must be brought in. If the state has positive expectations that the other will maintain free and open trade over the long term, then the expected value of trade will be close to the value of the benefits of trade. On the other hand, if the state, after having specialized, comes to expect that trade will be severed by the trading partner, then the expected value of trade may be highly negative, that is, close to the value of the costs of severed trade.

In essence, the expected value of trade may be anywhere between the two extremes, depending on a state's estimate of the expected probability of securing open trade, or of being cut off. 31 This leads to a crucial hypothesis. For any given expected value of war, we can predict that the lower the expectations of future trade, the lower the 30. On the importance of altematives, see Baldwin, " Interdependence and Power," p. 482; Keohane and Nye, Power and Interdependence, . 13. It is worth remembering that alternative suppliers p nd markets are only valuable in reducing A's dependence if A can get access to them. If B is able not only to sever bilateral trade, but also to blockade A to prevent third-party trading, then A effectively has no alternatives and is therefore dependent. This was the situation for Japan vis-a-vis the United States before 1941 regarding oil imports. 31. This line of reasoning is developed formally in Dale Copeland, " Modelling Economic Interdependence and War: A Theory of Trade Expectations," paper presented at the annual meeting of the American Political Science Association, Chicago, September 1995.

It is consistent with consideration of the " probability of transaction" as a determinant of expected national income in Arad, Hirsch, and Tovias, The Economicof Peacemaking, pp. 37-43, although they do not employ expectations of future trade as a theoretical variable affecting the likelihood of war. InternationalSecurity 20: 4 | 20 expected value of trade, and therefore the more likely it is that war will be chosen. It is important to note that the expected value of trade will not be based on the level of trade at a particular moment in time, but upon the stream of expected trade levels into the future.

It really does not matter that trade is high today: if state A knows that B will cut all trade tomorrow and shows no signs of being willing to restore it later, the expected value of trade would be negative. Similarly, it does not matter if there is little or no trade at present: if state A is confident that B is committed to freer trade in the future, the expected value of trade would be positive. The fact that the expected value of trade can be negative even if present trade is high, due to low expectations for future trade, goes a long way towards resolving such manifest anomalies for liberal theory as German aggression in World War I.

Despite high levels of trade up to 1914, German leaders had good reason to believe that the other great powers would undermine this trade into the future; hence, a war to secure control over raw materials and markets was required for the long-term security of the German nation. Since the expected value of trade can be positive even though present trade is low, due to high expectations for future trade, we can also understand such phenomena as the periods of detente in U. S. -Soviet relations during the Cold War (1971-73 and after 1985).

While East-West trade was still relatively low during these times, the Soviet need for Western technology, combined with a growing belief that large increases in trade with the West would be forthcoming, gave the Soviets a high enough expected value of trade to convince them to be more accommodating insuperpowerrelations. 32 In making the final decision between peace and war, however, a rational state will have to compare the expected value of trade to the expected value of going to war with the other state. The expected value of war, as a realist would emphasize, cannot be ascertained without considering the relative power balance.

As one state moves from a position of relative inferiority in economic and military power to relative superiority, the expected value of war will move from negative to positive or even highly positive. This proposition follows directly from the insights of deterrence theory: the larger the state in relative size, the higher the probability of winning a victory, while the lower the costs of fighting the war. 33 32. The U. S. -Soviet Cold War case is covered in Copeland, " Modelling Economic Interdependence and War. " 33. See Alexander L.

George and Richard Smoke, Deterrencein AmericanForeign Policy: Theoryand Practice (New York: Columbia University Press, 1974), chaps. 2-3. a EconomicInterdependence nd War | 21 Hence, if victory entails occupying the other state and absorbing its economy, war can take on a very positive expected value when a large power attacks a small state. 34 For example, if Iraq had been allowed to hold on to Kuwait after its August 1990 invasion, war for Iraq would certainly have " paid. " Similarly, Czechoslovakia was an easy and attractive target for Germany by 1938-39, as were the other smaller states of Europe, nd evidence suggests that war against these nations was indeed profitable for the Nazis. 35 On the other hand, war between more equal great powers is likely to have a much lower or even negative expected value. The Spartanleadershiptook Sparta into war against Athens in 431 BC, for example, under no illusions that war would be a profitable venture. 36 While the Athenian economy presented a large prize should victory be attained, war with a near-equal adversary could be expected to be very costly, with a low likelihood of victory.

Where we would anticipate a low or negative expected value to the option of war, the expectations-of-future-trade variable should have a determinant effect on the likelihood of war. If state A has positive expectations for future trade with B, and A and B are roughly equal in relative power, then state A will assign a high expected value to continued peaceful trade, will compare this to the low or negative expected value for invasion, and will choose peace as the rational strategy.

The higher A's dependence and the higher the expectations for future trade, the higher the expected value for peaceful trade, and therefore the more likely A is to avoid war. But if state A is dependent and has negative expectations for future trade with B, then the expected value of trade will be very low or negative. If the expected value for trade is lower than the expected value for invasion, war becomes the rational choice, and this is so even when the expected value of invasion is itself negative: war becomes the lesser of two evils. 7 34. This is developed formally in Copeland, " Modelling Economic Interdependence and War. " 35. See Peter Liberman, " Does Conquest Pay? The Exploitation of Occupied Industrial Economies" (Ph. D. diss. , Massachusetts Institute of Technology, 1991). 36. Thucydides, The Peloponnesian War, trans. Rex Warner (Harmondsworth: Penguin, 1954), Book 1, lines 80-88. 37. When one state is very large and the other very small, it is harder to sort out the effects of interdependence from the effects of relative power, at least in actual cases of war.

The expected value of war for the superior state is likely to be quite positive anyway, and thus will tend to overshadow the expected value of trade even when the state has positive expectations of future trade. Here, the superior state simply chooses war as the " greater of two goods. " This choice would not be altered by any diminution of trade expectations; indeed, war would simply be even more rational as the expected value of trade (and therefore peace) falls.

War in such a situation of marked power imbalance and low expectations of future trade is thus overdetermined; it would be difficult to tell whether war occurred because of the positive expected value of war, the negative expected value of trade, or both. Thus, in my empirical analysis, I examine cases where great powers InternationalSecurity 20: 4 | 22 Until now, I have talked about state A's " expectations of future trade" as though they were an essentially exogenous, that is, as though state B, in its willingness to trade with A, were not affected by A's behavior.

If, however, state A, by making political, military, or economic concessions, can induce B to relax trading restrictions, then A's low expectations for future trade may be raised. This suggests that the effects of diplomacy and bargaining need to be integrated into any extended historical analysis. 38 The probability of B trading with A is never completely independent of A's actions, since there is always some concession that A could make to get B to commit to higher trade levels over the long term.

But the problem for A is that B's price for high trade may be unacceptable in that it undermines A's internal stability or its external power position. To take an extreme example, if B were to demand, as the price for higher trade, that A unilaterally disarm and allow B to occupy A with its army, it is hard to imagine A accepting such a deal. If B remains unwilling to budge from such an exorbitant demand, then it is fair to say that A's pessimistic expectation for future trade is exogenous; there is little A can do, short of nationalsuicide, to improve the likelihood of trade.

Thus state A, in estimating B's probability of trading with A, will refer to many indicators suggesting how " reasonable" B will be into the future, that is, how willing B will be to trade, and at what price. One may think of these indicators simply as causal factors affecting the variable " expectations of future trade. " Such systemic factors as B's economic competitiveness, B's rate of depletion of raw materials and energy reserves (affecting its future export ability), and military pressures constraining B's trade with A will be important.

German leaders before World War I, for example, had good reason to believe that Britain would be forced to move to imperial preference to protect its empire from the German economic challenge and to lend support to its entente partners. Japanese leaders in the late 1930s recognized that the United States would have to cut back on oil and iron exports to Japan as U. S. reserves were attacked great powers in long and costly total wars. While these cases do not cover the universe of wars, they do isolate the role of economic interdependence and changing expectations of future trade in the outbreak of war. 8. Given space constraints, my case studies in this article do not provide a full analysis of the bargaining dynamic. For an analysis of interstate economic bargaining, see Baldwin, Economic Statecraft, chap. 6; R. Harrison Wagner, " Economic Interdependence, Bargaining Power, and Political Influence," InternationalOrganization, Vol. 42, No. 3 (Summer 1988), pp. 461-483. Note also that there may be a causal feedback loop, whereby increasing fears of war lead others to reduce trade, which in turn heightens the incentive of dependent states to initiate war.

These and other issues involving the endogeneity of trade expectations are addressed more fully in my book manuscript, " Economic Interdependence and War. " EconomicInterdependence nd War | 23 a depleted or needed to supply a military buildup (even one directed only at Germany). Such systemic pressures on B to reduce trade with A will foster negative expectations of future trade among A's leaders. But domestic and personal factors can also play a significant role in the exogenous rise or decline in B's likelihood of trading with A, indicating hat the assumption that B is a " unitary actor" must be relaxed to some degree when examining history. 39 In 1972, for example, the Soviets saw Nixon and Kissinger as firmly in control of American policy, and therefore able to carry through on commitments to increase East-West trade. Two years later, however, such a positive expectation for future trade could not be sustained in the wake of Watergate and the reassertion of Congressional power, at least at a price which was reasonable to the Soviets.

This had much to do with thefailureof detente, as I argue elsewhere. 40 A comparison of the arguments of trade expectations theory with those of liberal and realist theory is presented in Table 1. To summarize: liberals contend that high economic dependence, as manifest in high trade levels, reduces a state's likelihood of initiating war by providing a material " constraint" on unit-level forces for aggression. Low dependence will increase this likelihood, since this constraint on unit-level motives for war is removed.

Realists argue that high dependence heightens the probability of war as dependent states struggle to reduce their vulnerability. In the realist world, however, low dependence should have no impact on the likelihood of war or peace; that is, other factors should become causally determinant of war. Still, since economic interdependence is at least eliminated as a possible source of conflict, realists 39. Note that state A, the decision-making unit in the theory, can still be treated as a rational unitary actor respondingto the observed domestic forces on the other side. 0. See Copeland, " Modeling Economic Interdependence and War," pp. 62-66. International trade institutions such as the General Agreement on Tariffs and Trade (GATT), by lowering transaction costs and facilitating the punishment of cheaters, may be an additional means to build positive expectations for future trade. Indeed, for some liberals, peace may only be likely when both interdependence and effective global institutions co-exist and reinforce one another; Keohane, " International Liberalism Reconsidered," p. 183.

While such institutions may indeed affect trade expectations, they are unlikely to be as significant in history as the systemic and domestic factors just discussed, for the simple reason that these institutions are a creation of the post-World War II era. Moreover, since concerns for war and peace revolve mostly around the great powers, and powers like Soviet Union and China have been historically excluded from trade institutions like GATT, such institutions cannot account for fluctuations in the levels of tension between the United States and these powers since 1945.

Finally, the institutional approach overlooks bilateraldiplomacy as the principal mechanism through which expectations of trade change; consider the United States and Japan up to December 1941, or the United States and Japan today. Accordingly, while my argument recognizes the contribution institutions can make to the improvement of future trade expectations, the focus both theoretically and empirically remains fundamentally non-institutional. 2 S International ecurity 0: 4 | 24 4-- C/) CO D C o C CD co -0 Co 0 0 0 C CO N E cn C 0 0 -;-- a) co C 0 +-, w CM> C0 w n E C < CD+M " 1 CD CD : 3 C> CO C CD 0 : 3 +, -0 0 m W W cn CD4- 'a cn 0 c: c CD 0 D- 0 m N C C: > W CD CD cn E +, an c 0 +. , cn Cn CO CD 0 u - : 3 0 -0 CC CD a CD 0 Co 0 0 0 +, cn co co o co co CL 0 C < CD : 3 >- C-D C W 0 co E cD w C co > C Ew CD C C > CD E E0 CD C 0) Cn CD >- > 77 cn 0 CD 0 CD E C -C W CD -0 +, C cn 0 CD CD Cn a '. CD CD co > C co co 0 -i cn 0 0 co CD CD a rCO CD CD Co w 0 W W C: CD co CL W cn : 3 -0 CD E 00 -0 cn 'a C C LrCD 0 = cn +, C - C CD CD C -0 CD CO CD la Co C: CD -0 cn +, C: CD CD CD 0 co CDcn 0 CD +", cn -C n : 3 0 0 w 40 . > C: 0W F n0 m 0 CD CD m m CD CD 0 z +1 > CD -C CM F: -C CD - CD 0 CD 0) Cn 'a o C -C 0 C C CD 0 CD4-> C C Co , -C: CD+n 0 c w co W0 " : L' cn cn CD m o 0 co CD 0 0Cw 0 ! E c CD o o cn Cn CD CO co > w C C: > C > w 0 > wW w cD 'D > E w co mm co CD E W W CD Co -C +. W -C N -E CM CD 0 4= 0 D co C " +1 co cn -C CD +1 w -C -C L- CD +-, Co +, cn FL 0 E CD +-, cn > w E CD 4- > o C co 0 -C cn CD cn 0 Cn CD w> > +, CD C co 0 CM -; 0 C w -C C 0 CD M Q) '-0 +> CD C , -FU-0 )w Q0 - co 0 C 0 +1 " 0 CD-- C cn co x " W O " CD 0 0 n co 0 CD m C. ) C co 0 W cn D- CM CD cn w w cn C: o CD m CD cn C 0 E 0 0 cn w > x wx 0 C C) cn : 3 0 w m CMCD CD co CM -0 +' - C +' -0 +' -C CO 0 0 0 = CD+' CD -C CD+o' +", co c 0 C co cn C w co cn CC w0 w 0 4- n La C: 0 c3 : 0 : 3 C : 3 CD cn 0 C CD w x w C 40 -CM C CD : 3 CD 'C-D -C cn co C 0 cn a w C0 0 -0 C 0 CD 0 -C : 3 a CD an c CD +-, 0 CD cci: 3 : 3 CD CD " m C CD CD CD C: 0 CD : 3 CD M cn 0 +' co C +' CD -0 > 0 'a co co 0 W C CO C: co : 3 -cD Q. , co CD CD -0 -W0 co w x cn +-, cn 0 0 0 0 > co co cn : L C co a C0 C-D C w0 C/) cn E -FU CO> CD +1 - C) CL