The Economics of Peace and Security Journal

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Articles

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Aims and scope

This journal raises and debates all issues related to the political economy of personal, communal, national, international, and global peace and security. The scope includes implications and ramifications of conventional and nonconventional conflict for all human and nonhuman life and for our common habitat. Special attention is paid to constructive proposals for conflict resolution and peacemaking. While open to noneconomic approaches, most contributions emphasize economic analysis of causes, consequences, and possible solutions to mitigate conflict.

The journal is aimed at specialist and nonspecialist readers, including policy analysts, policy and decisionmakers, national and international civil servants, members of the armed forces and of peacekeeping services, the business community, members of nongovernmental organizations and religious institutions, and others. Contributions are scholarly or practitioner-based, but written in a general-interest style.

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for review are posted at www.epsjournal.org.uk.**

Abstracts

Scott A. Kjar and **William L. Anderson**. "War and the Austrian School: applying the economics of the Founders." The Austrian school of economics is generally considered an antiwar school. The Austrian view is not derived from a religious or class-based ideological view. Instead, it derives entirely from the school's fundamental economic tenets. This article applies the economic views of the Austrian school's founders—Menger, Böhm-Bawerk, and Wieser—to the issue of war. [Keywords: war; Austrian school, history of economic thought. JEL codes: B13, B31, D83, D90]

Peter M. Li. "Relational similarity: an introduction and an application to military alliances." The ability of military alliances to deter depends on their credibility: the degree to which others believe that allies will fulfill their commitments. One way to measure credibility is to compare nations' lists of allies. The more similar those lists are, the more similar are those nations' security interests. This increases the credibility and the deterrent capability of resulting alliances and, consequently, decreases the amount of militarized conflict. In order to measure the similarity of alliance lists, one needs to account for the possibilities that countries can have multiple allies, can be indirectly linked to one another by their allies, and can be part of mutually exclusive groups of directly and indirectly related allies. Using a new measure called relational similarity, this article finds support for the credibility argument and also finds that relational similarity better explains observed patterns of conflict than existing measures. [Keywords: international relations; alliances; war and conflict; signaling; social network analysis. JEL codes: C81, C82, D74, D85, F59]

Alexandre Debs. "Economic theories of dictatorship." This article reviews recent advances in economic theories of dictatorships and their lessons for the political stability and economic performance of dictatorships. It reflects on the general usefulness of economic theories of dictatorship, with an application to foreign relations. [Keywords: political economy; dictatorship; game theory. JEL codes: D7, F5, O1]

Joel Potter and **John L. Scott**. "Issues in third-party intervention research and the role of destruction in conflict."Research on third-party intervention into conflict has accelerated in recent years. Although some studies have explicitly assumed that third parties only value peace, recent theory has modeled parties to a conflict more flexibly. In addition, empirical results provide evidence that third-party motives are more complex than straightforward peacemaking. In particular, although the United Nations attempts peacemaking missions, evidence suggests that United Nations interventions prolong conflict. We sample the literature on interventions and offer directions for further research. On the empirical side, we suggest that third-party research should exploit recent applications of statistical modeling that unravel the complexity created by the fact that the decision to intervene in a conflict may depend on the same factors that contribute to the duration of the conflict. On the theoretical side, in contrast to previous studies, we suggest modeling the destruction that armed conflict causes as a choice variable. [Keywords: third-party intervention; United Nations; peacekeeping; destruction. JEL codes: D74, H56]

Yang-Ming Chang, **Shane Sanders**, and **Bhavneet Walia**. "Conflict persistence and the role of third-party interventions." This article discusses the contributions and limitations of the contest approach to theoretical conflict research. Specific topics of discussion include the persistence of war and the motivation and effect of third-party intervention in altering the outcome and persistence of conflict. The persistence of intrastate conflict and the political economy of third-party interventions are central issues in international politics. Conflict persists when neither party to the fighting is sufficiently differentiated to "borrow upon" future ruling rents and optimally deter its opponent. Third-party intervention aimed at breaking a persistent conflict should focus upon creating cross-party differences in factors such as the value of political dominance, effectiveness of military arms, and cost of military arming. The article also discusses the effect of outside intervention upon conflict persistence and outcome. Of particular interest is work that not only identifies a peaceful equilibrium but discusses the degree to which a particular peaceful equilibrium is valued. Considering the value of a peaceful equilibrium may be a first step toward understanding the stability of peace. [Keywords: civil conflict; persistence; third-party intervention. JEL codes: D74, H56]

C. Jill Stowe, **Kate Krause**, and **Janie M. Chermak**. "Preferences for privacy and security: an experimental investigation." The article experimentally investigates individuals' choice behavior between privacy and security. In a convenience sample of undergraduate and graduate students, we find that most individuals choose to sacrifice a moderate amount of privacy in exchange for a moderate increase in security. A nontrivial fraction of participants made more extreme choices, opting for either high security or high privacy positions. Identifiable factors influenced these choices. For example, while the high security individuals responded to losses they personally experienced in the experiment, high privacy subjects responded to losses experienced by others in the experiment. [Keywords: privacy; security; multinomial logit. JEL codes: D81, C92]

Neil Cooper. "On forgetful goldfish and failed mnemonics: transforming political economies of conflict using voluntarism, regulation, and supervision." This article examines three types of initiatives that have been deployed in the effort to transform the political economies of civil conflict: voluntary ethical trading initiatives. formal regulation to promote ethical trading or good resource governance, and economic

supervision schemes. The article draws on brief case studies of the United Nations Global Compact, the Extractive Industries Transparency Initiative, and the Kimberley Process Certification Scheme as well as discussing economic supervision schemes such as those imposed on Chad and Liberia. The article argues that the current representation of these initiatives obscures that they represent a retreat from the more ambitious programs of reform articulated in the 1970s. [Keywords: international economic order; multinational firms; international business; international conflicts; negotiations; sanctions; international organizations; colonialism; imperialism; postcolonialism; international institutional arrangements; regulation; business law. JEL codes: F02, F23, F51, F54, F55, K20]

War and the Austrian School: applying the economics of the Founders

Scott A. Kjar and *William L. Anderson*

In this article, we examine the economic thoughts of the three founders of the Austrian School, Carl Menger, Eugen von Böhm-Bawerk, and Friedrich von Wieser, and apply their thinking to the economics of war. Each developed analyses that provide foundations for the Austrian School and help explain the school's antiwar perspective. The early Austrians were not pacifists, but their views enable us to read between the lines as to how they would see war, and especially the aggressive wars we see today from the United States.

Menger's paradigm

Carl Menger's 1871 [1976] book, *Principles of Economics* (the *Grundsätze der Volkswirtschaftslehre* in the German title), challenged existing economic orthodoxy by affirming and rejecting ideas found in two major economic schools of thought of the time, the German Historical School and the British Classical School. On the one hand, Menger recognized the crucial role played by economic institutions in shaping an economy, but Menger's analysis was both theoretical and reality-based. Like the classicals, Menger believed that a growing free-market economy advanced civilization, but he broke with them on value theory.

Before establishing value theory, however, Menger first establishes what he calls the Theory of the Good. It consists of four important elements (p. 52). There must be:

▸ a human need;
▸ such properties as render the thing capable of being brought into a causal connection with the satisfaction of this need;
▸ human knowledge of this causal connection; and
▸ command of the thing sufficient to direct it to the satisfaction of the need.

Menger bases *Grundsätze* on human needs and their satisfaction. First, he defines goods as things that satisfy human needs, and marginal utility as the extent to which a good satisfies a human need. Value concerns the relative scarcity of that good. Thus, a good which satisfies an important need, satisfies it well, and is highly scarce has high value; a good which satisfies a less-important need, or satisfies it poorly, and (or) is not particularly scarce has a low value. However, a thing that cannot be brought into such a causal relationship provides no utility, so it has no value. All human action, wrote Menger, is involved with bringing goods into such causal relationships.

Although Menger did not write about war, we can apply this analysis to war, its implements, and the human labor of war. Most important, a "good" must meet a human need, and that includes weapons. For example, a military rifle is a good in the Mengerian sense only if it enables someone to meet his or others' needs. Military hardware has value only in its relationship to satisfying particular human needs, not by providing employment in war goods industries or in stimulating an economy.

Aggressive war contradicts Menger's most foundational points.[1] Like Adam Smith, he wishes to promote civilization, not destroy it. Furthermore, war goods are not Mengerian goods outside of their direct relationship in meeting an individual's needs for defending oneself. However, Menger also described what he called imaginary goods, which people wrongfully believe will satisfy their needs. Menger thought that people could believe that the good satisfies a need when, in fact, it does not, such as drinking salt water to quench one's thirst. People also could believe a good satisfies a nonexistent need, and we place aggressive war and those things used to achieve it into that category.

Austrian economics and classical views of production and consumption

As mentioned, Menger and his Austrian followers were not pacifists nor against all wars. While they do not address war itself, neither does their economic thought endorse the notion of war prosperity. One classical economist who did comment on war, however, was J.B. Say.[2] His eponymous law, a pillar of classical economics, acknowledges that consumption in an economy depends upon what that society can produce. The relationship of Say's Law to the Austrian views of putative war prosperity is important and often overlooked. For example, Higgs (1992, p. 53) challenges the view that World War II was economically good for the United States:

"After bearing substantial costs of relocation, the migrants (war industry workers) often found themselves crowded into poorer housing. Because of the disincentives created by rent controls, the housing got worse each year, as landlords reduced or eliminated maintenance and repairs. Transportation, even commuting to work, became difficult for many workers ... Shoppers bore substantial costs of searching

We examine the economic thoughts of the three founders of the Austrian School, Carl Menger, Eugen von Böhm-Bawerk, and Friedrich von Wieser, and apply their thinking to the economics of war. Each developed analyses that provide foundations for the Austrian School and help explain the school's antiwar bias. The early Austrians were not pacifists, but their views enable us to read between the lines as to how they would see war, and especially the aggressive wars we see today from the United States.

for sellers willing to sell goods ... The government exhorted the public to 'use it up, wear it out, make it do, or do without.' In thousands of ways, consumers lost their freedom of choice."

While unemployment was low during World War II, real deprivation prevailed in the United States (and was worse in Europe and Japan, obviously). Austrians interpret Higgs as noting that the war economy kept people from meeting their needs. Although the macro statistics showed high levels of GDP production, aggregate demand of wartime production did not create prosperity, which is consistent with Say's Law.

Say himself wrote harshly about war (1826, pp. 430-431):

"War costs a nation more than its actual expense; it costs besides all that would have been gained, but for its occurrence ... To conclude: the charges of war would be very incorrectly estimated, were we to take no account of the havoc and destruction it occasions; that for one at least of the belligerents, whose territory happens to be the scene of its operations, must be exposed to its ravages. The more industrious the nation, the more does it suffer from warfare. When it penetrates into a district abounding in agricultural, manufacturing, and commercial establishments, it is like a fire in a place full of combustibles; its fury is aggravated, and the devastation prodigious. Smith calls the soldier an unproductive labourer; would to God he were nothing more, and not a destructive one into the bargain! He not only adds no product of his own to the general stock of wealth, in return for the necessary subsistence he consumes, but is often set to work to destroy the fruits of other people's labour and toil, without doing himself any benefit."

Like Adam Smith (1976), Say believed that the end of production was consumption. Indeed, while the Austrians broke from the classicals on value, they did not abandon classical views on production and wealth. In fact, Menger links "higher levels of civilization" with increases in the making of goods and the expansion of uses of capital (p. 53) and one must doubt that he meant war goods.

As for the capitalist system needing war in order to provide adequate aggregate demand for goods, Menger and the other Austrians were squarely in the camp of most of the classical economists who differed from Marxists and others that a market economy could not provide enough effective demand to stay afloat by itself. Sowell (1985) notes that those intellectual lines had been drawn early in the nineteenth century.

The classical/Austrian view departs from a Keynesian-type belief that war stimulates the economy, and prevents Austrians from seeing war as enabling economic growth. Instead, they see war as diverting both resources and useful labor from productive to unproductive ends.

Menger, Böhm-Bawerk, capital theory, and its relation to war

Capital theory begins early in Menger's *Principles* when Menger contradicts Smith's argument in the opening lines of *Wealth of Nations*: "The greatest improvement in the productive powers of labour, and the greater part of the skill, dexterity, and judgment with which it is anywhere directed, or applied, seem to have been the effects of the division of labor." Menger conducts a thought experiment concerning two tribes, one an Australian tribe of hunters and fishermen, and the second a more forward-looking group. The first tribe has virtually no capital, although its members have a complete division of labor, albeit "gathering those goods of lowest order that happen to be offered by nature" (p. 73). Menger's second tribe develops capital and investigates "the ways in which things may be combined in a causal process for the production of consumption goods, take possession of such goods, and treat them as goods of higher order" (p. 74). In other words, the second tribe produces capital to increase future production of consumption goods.

Menger emphasizes knowledge in two ways. First, humans must have knowledge of their future needs and of the goods they will desire in the future. Second, they must have knowledge of how to combine resources into tools and capital structures for production of future consumption goods. Through these improvements in knowledge, Menger claims, humanity progresses, as higher-order goods produce the lower-order or consumer goods that meet the needs of individuals, which ultimately develops civilization. Menger, who wrote often of "causal connections," obviously equated the growth of civilization with the increase in forward-looking behavior and knowledge. Taken together, these cause the growth of an economy, and especially an economy that meets the needs of individuals on a wide scale.

However, cannot war increase wealth through plundering others? For example, William Shirer (1941) writes of looting by German soldiers in 1940 after they overran the Low Countries and France in their spring offensive, taking goods back to Germany, where consumer goods were extremely scarce. But plunder is not prosperity, and war and plunder do not advance civilization. A society that lives by plunder, even if it has sufficiently wealthy neighbors, cannot raise its standard of living above those of its neighbors. In turn, neighbors cannot raise their own living standards because they cannot increase their structure of production and, ultimately, everyone becomes poorer.

While Menger developed a basis for capital theory, another Viennese economist, Eugen von Böhm-Bawerk, took it further. His main work, *Capital and Interest*, came in two volumes, *History and Critique of Interest Theories* (1884), and *The Positive Theory of Capital* (1889). Garrison (1999) points out that Böhm-Bawerk emphasized the role of time in capital theory: "Production takes time, and the time that separates the formulation of multiperiod production plans and the satisfaction of consumer demands is bridged by capital" (p. 115) and adds that "Böhm-Bawerk indicates that in a market economy it is the entrepreneurs who bring such structural changes about

and that their efforts are guided by changes in the relative prices of capital goods" (p. 119).

Austrians hold that entrepreneurs bear the uncertainty of future states. If consumers change their desires, entrepreneurs must be prepared to change their capital structures, and even the goods they produce. In wartime, consumers (specifically, consumer preferences and demand) do not guide production. Instead, the state directs production toward war ends, and entrepreneurs earn profit not by meeting desires of consumers, but by pleasing the government.

Böhm-Bawerk's capital theory emphasizes that the time preference of individuals helps determine the structure of capital goods. Time preference is the extent to which people desire to control resources now instead of in the future. A high time preference rate (TPR) indicates a strong desire to control and consume resources now; a low TPR demonstrates willingness to forgo present consumption in favor of future consumption.

People with low time preference will save now and wait for future goods, which are produced through a longer capital structure. That lower time preference rate releases scarce resources used for current consumption, making them available for capital formation. As the economy increases its capital, this lengthens the structure of production and leads to long-term efficiencies. Entrepreneurs engage in ever-longer time horizons, create ever-more-productive capital structures, and enrich society in the long run. War, on the other hand, brings short-term thinking. It destroys property and lives and also changes the capital structure to create war goods, affecting production for a long time. This is not just because war destroys property, but also because it creates internal economic dislocations that change the direction of production and the relative value of resources.

Austrians emphasize the heterogeneity of capital. Factors of production like unskilled labor are non-specific factors that can be used in many production processes with little loss of productivity. However, capital can be specialized, often minutely specialized. Wartime capital structures differ greatly from those in peacetime. As resources flow to a capital structure that produces war goods, they are lost to an alternate capital structure that could have produced consumer goods and cannot be easily transferred to civilian use after the war ends.

Böhm-Bawerk's greatest legacy is found to be in the areas of heterogeneous capital and interest, and he recognized that time is an important consideration in all production. Further, Böhm-Bawerk noted that in some cases, a faster production process might produce less than a slower one using more stages of production. For example, a person can go fishing right now, and try to catch fish by hand. Another person might find a stick, sharpen it with a stone, and use the subsequent spear to catch fish. It takes longer to start fishing, but the second person catches more fish. Böhm-Bawerk termed the latter processes more "roundabout."

Böhm-Bawerk pointed out that roundabout processes involved more time, more long-term planning, more capital, and more stages of production. Less roundabout processes might produce fewer products faster; more roundabout processes take longer, and are only adopted when they are more productive. In the long run, more roundabout production processes increase society's standard of living.

Roundabout production is related to time-preference rates. A society dominated by individuals with high-TPR will have leaders that rush into decisions and will lead a government that tries to consume beyond its means. For example, before rushing United States armed forces into war in Iraq, U.S. Secretary of Defense Donald Rumsfeld famously said in the United States "you go to war with the Army you have."[3] Conversely, a society dominated by low-TPR people is less likely to rush into war and will seek ways to avoid destructive conflict.

During war, military leaders exhibit high TPR. They want war goods now, and are less likely to look out for the welfare of their own soldiers or civilians. The military does not concern itself with how its high-TPR actions will affect the structure of production, as capital moves from civilian production and the standards of living fall (even as GDP rises). In addition, it is clear that in peacetime, military authorities demonstrate more long-term thinking, if only to be preparing for what they believe will be the next war. Austrians would believe that the ensuing military-industrial complex is harmful to an economy, especially in the long-run, because it permanently alters the structure of production and leads businesses from producing those goods that meet the needs of individuals—and advance the cause of civilization—and shifts long-term production into military goods.

Böhm-Bawerk does not write specifically on war, so we have constructed these points from his capital theory. However, Böhm-Bawerk's personal and political history matches what he (and we) wrote. He served multiple terms as the Minister of Finance for Austria in the late nineteenth and early twentieth centuries and his policies clearly did not demonstrate a belief that increased public spending benefits the economy. For example, he never wavered from support of a balanced government budget. He opposed large-scale military spending by the Austrian army, whose leaders demanded this even before the outbreak of World War I. Schumpeter (1925) noted that Böhm-Bawerk's reticence to boosting military spending was not ideological, but rather reflected his belief that government should not spend more than it takes in via taxation. Conversely, Gerschenkron (1977) severely criticizes Böhm-Bawerk for his unwillingness to increase government spending (especially on public works projects) without increasing taxes. This lack of spending, Gerschenkron claims, caused Austria to be economically backwards.

Wieser, Gossen's laws, and alternative cost

The third economist in the early Austrian triumvirate was Friedrich von Wieser. Wieser's work bears the clear influences of both Menger and Hermann Heinrich Gossen, a German economist of the early 1800s whose work was overshadowed and ignored by the German economic historicists. Gossen's First, Second, and Third Laws

are deeply ingrained in the Austrian tradition, and particularly in Wieser's work. Gossen's First Law, anticipating the marginalist revolution by 17 years, is today called the law of diminishing marginal utility. Briefly, the utility derived by serial consumption of a homogeneous good diminishes with each marginal unit. This is also sometimes referred to as Gossen's Law of Satiation (Wieser, 1971, pp. 7-10). In fact, this is similar to Menger's own contribution to the marginalist revolution (Menger, 1976, pp. 128 ff.). To the extent that war goods could be called (Mengerian) goods at all, they still are subject to Gossen's First Law. Repeated uses of such goods ultimately have diminishing returns, especially in aggressive war, as the original strategic purpose of attacks over time tend to deteriorate into just plain destruction with no real strategic value.

Gossen's Second Law is what today is known as the equi-marginal principle. Wieser explains that the

"greatest possible enjoyment ... could not be reached if the separate branches of expenditure were not adequately weighed against each other ... Every overstepping in one branch will have to be paid for in another, which other, as represented by a higher degree on the scale of wants, will impose a sacrifice greater than the enjoyment got from it."[4]

Menger made a similar argument in his *Principles* (1976, pp. 122 ff). In his table demonstrating the progressive satisfaction of several different needs, he shows that a person is likely to shift from satisfying some need A to satisfying some need B long before the satiation level of A is reached. Rather, he points out, each subsequent satisfaction of A must be weighed against the possibility of satisfying needs B, C, D, and so on. At the margin, he argues, resources are applied to meeting the need from which the most utility is derived, thereby keeping all needs in a more or less equivalent state. If satisfaction of need A is further progressed than is satisfaction of the other needs, then no additional resources will be applied to need A until the other needs are more fully and equally satisfied.

Again, we apply this principle to war. Austrians believe that a win-at-all-costs mentality is unacceptable because it implies that all other alternatives have no value. If alternatives are possessed of positive value, then a win-at-all-costs military policy, like one which demands unconditional surrender, likely costs society more than it gains via military victory. A nation should acquire war goods and wage war to the extent that such goods and war meet the equi-marginal principle. When more war goods are created than can be justified, it is necessary to stop producing such goods and waging such war until the marginal utilities of all other choices have diminished sufficiently to equal the diminished utility associated with the war.

Gossen's Third Law is that scarcity is necessary for goods to have economic value. If a good is not scarce, there is no opportunity cost associated with its use. Menger distinguishes between value and marginal utility by applying scarcity to marginal utility to demonstrate value (Menger, 1976, chapter 3). Wieser discusses the difference between goods that exist in "superfluity" and those that do not, pointing out that those existing in abundance are valueless because nothing is sacrificed by their use. Such goods can be used without engaging in economizing behavior, being used and destroyed with no regard to their value because more such goods can be acquired easily and virtually costlessly.

Wars pervert Gossen's Third Law inasmuch as military campaigns intentionally destroy capital goods, civilian infrastructure, and human beings, things (and beings) that are valuable. Aggressors destroy things regardless of their value. For example, the Allied bombing of Dresden, Germany, in 1945, destroyed centuries worth of priceless art and architecture, and this was done despite Dresden's lack of strategic military value. The purpose of the bombing was to kill and terrorize German civilians.

Adding to Gossen and Menger, Wieser made three important contributions to economic thinking. His first contribution is the concept of alternative cost, a precursor to opportunity cost. This is related to Gossen's Third Law because all goods that are not available in superfluity—that is, all goods that are scarce—are desired in quantities greater than are available. Any scarce good that is used in one way can have alternative uses. War highlights multiple alternative costs. First, there is the alternative cost of acquiring weapons, instead of spending for schools, hospitals, roads, consumer goods, and more. Second, we see that military personnel, including soldiers, noncombat military personnel, and nonmilitary support staff, could have been deployed in alternative ways, producing those very schools, hospitals, roads, and consumer goods that now cannot be produced because both the labor and the financial resources have been diverted to military spending. Third, we see in the destruction wreaked by military activities an alternative cost. Everything destroyed by the military comes with its own set of alternative costs. Had these things not been destroyed, they could have continued to meet human needs.

Henry Hazlitt, in *Economics in One Lesson* (1979), discusses the opportunity cost of war in chapter 3, which he gives the sarcastic title "The Blessings of Destruction." Hazlitt says that the economic stimulus of war is an example of the Broken Window fallacy in which people mistakenly identify the repairing of broken windows as a source of new wealth. Hazlitt, following Frederic Bastiat, Menger, and Wieser, points out that as things are destroyed, their productive services are lost. Rather than seeing the replacement cost as a benefit to society (on the argument that we had to produce these things, thereby stimulating the economy), we need to recognize the full picture. In replacing those things destroyed, we utilize scarce resources that have alternate uses. To employ them in rebuilding what has been destroyed by war is to employ them twice to the same end. It makes no sense to claim that there is a benefit to using the original amount of resources to produce these goods once, and then using that same amount of resources over again to reproduce these goods.

Wieser's second contribution, again building on Menger and Gossen, was coining the phrase "marginal utility," a mainstay in almost all schools of economics today.

Like Menger, Wieser held that value was subjective,[5] a lasting hallmark of Austrian economics. Further, like Menger and other Austrians, he held that a price system is vital to an economy, and that even a socialist economy would need such a system, a point with which later critics of the Austrian School, such as Oskar Lange, agreed. Unlike the other Austrians, however, Wieser also believed that inequalities of wealth distorted the price system to a point where prices did not necessary reflect the "natural values" as determined by marginal utility, and he believed that a price system functioned as a second-best solution, a necessary evil.

Third, Wieser in his 1889 [1956] work, *Natural Value*, also coined the term "imputation." Like Menger, he recognized that the value of the factors of production was imputed from the value of the final products they helped to create. When we combine imputation with alternative cost, we recognize that each factor of production can be used to produce more than one good. For example, instead of using our resources to build a farm equipment factory, we could have applied those resources toward building a factory that makes other goods. If goods have value, then the factories and other resources used to produce those goods have value imputed to them. In a free market economy, all values come from consumer decisions. As consumers desire one good more than another, that desire translates into demand changes for the good, which are then imputed to the inputs for the good.

But war goods are not selected by consumers in the free market. Rather, governments select war goods to attain political ends. If consumers derive little or no value from war goods, then the factories and other inputs that produce those goods have little or no value imputed to them. This implies that less value is imputed to these factories than would be imputed to factories that produce other goods. The alternative cost is too high, and the equi-marginal principle is being ignored by the government to the detriment of the consumers and taxpayers. Assume that the farm plant is taken over during a war and turned into a factory that makes tanks and other weapons. First, capital goods and certainly final goods are not perfectly interchangeable; the capital lines will have to be adjusted, and that will require investment and the use of scarce resources. Second, no longer can these factors operate according to the way they are valued, as value in a war economy has nothing to do with consumer preferences. Third, even after a war ends, the war-created capital is not useful in a civilian economy, which means the factories once again must be re-tooled. That also means that the factors that were deemed valuable by war authorities when the war production regime exists now must be re-assessed according to an economy based once again upon consumer preferences.

One can take Austrian concepts and derive a comprehensive view as to why war and economic prosperity are mutually exclusive. Earlier, we interpreted Mengerian analysis to classify war goods as imaginary goods, things that do not meet human needs. (Obviously, if a war weapon permits one to defend one's property and loved ones from invaders, it is a Mengerian good, but few weapons of war these days can be termed purely defensive.) In the Austrian view, war cannot stimulate an economy, but rather distorts it. Furthermore, the longer war and the dislocation of the production structure go on, the more difficult it will be for the consumer-based structure of production to reassert itself after the war, and government controls and orders, have ended.

Conclusion

Wieser and the other Austrians were not antiwar activists. In fact, Wieser served as Austrian Minister of Commerce during World War I, although, according to Mises (1984, p. 6), his powers were quite limited and his decisions "secondary." However, the Austrian economic doctrines with their emphasis upon nonintervention, subjective value, and opportunity cost clearly would place them against anyone, economist or otherwise, who would support war as a means to boost an economy, given that war itself is the most radical of all government interventions.

The early Austrians did not even see government economic intervention as zero-sum, but as negative-sum because of the displacement of capital, the alteration of the structure of production, the disregard for alternative cost, and the loss of value engendered by government intervention. Even if the Austrian economists might have seen a particular war as being justified for political reasons, nonetheless they did not think of government intervention as creating an overall positive benefit for the economy.

The early Austrian economists were a product of the liberal order of the nineteenth century, a time of relative peace on the European continent when borders were relatively open and the gold standard had not come to the point of crisis it would reach with the onset of World War I. Their methodology was based upon individual choice, entrepreneurship, subjective valuation, marginal utility, imputation, and opportunity cost. In that regard, they held on to the older, classical, view that as the economies of nations grew and people became wealthier, civilization itself was advanced, even as they were in the forefront of the marginalist revolution.

Although they clearly were not pacifists, nonetheless the methodology upon which the Austrian founders built their economic thought would challenge the viewpoint that war can bring net economic benefits to society. The next generation, including von Mises and von Hayek, would further attack the economic foundations of war, and subsequent generations of economists in the Austrian tradition, including Murray Rothbard and Hans-Hermann Hoppe, would become even more hostile to the state intervention known as war.

Notes

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1. Modern Austrian thinkers, such as Murray Rothbard (1993), distinguish between a just war and an unjust or aggressive war.

2. See Anderson (2000).

3. "Secretary Rumsfeld Town Hall Meeting in Kuwait." 8 December 2004. http://www.defenselink.mil/transcripts/transcript.aspx?transcriptid=1980 [accessed 11 September 2009].

4. Wieser (1956, book I, p. 14).

5. Ekelund and Hebert (1990).

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Relational similarity: an introduction and an application to military alliances

Peter M. Li

At first glance, the answer to how one might measure the strength of a relationship between two actors seems self-evident. First, look at the actors in question and see whether or not there is a relationship. Second, if so, assess the depth or intensity of that relationship. However, this article argues that in many, if not most situations of interest to social scientists and policymakers, one needs to go beyond single, individual relationships. Instead, one needs to take a broader relational view whereby actors (e.g., countries, firms, people) are defined as much, if not more, by their external relationships (e.g., who their allies, business partners, and friends are) as by their internal attributes (e.g., what their military, industrial, or intelligence capabilities are). In this view, an individual is not a distinct entity per se but a collection of roles: friend, student, daughter, spouse, co-worker, etc. Extending this line of thought, the strength of any particular relationship (e.g., alliance, business, or friendship) might be the degree to which the actors involved have common or overlapping partners (i.e., allies, business partners, or friends). For example, one would argue that two people who have more friends in common are "closer" to one another than two people who have fewer.[1]

While the article applies a relational perspective to the question of why some military alliances succeed while others fail, the concepts, methods, and insights discussed here are applicable to a wide range of issues and topics of interest to social scientists and policymakers. Examples include patterns of international and domestic trade between countries and firms, of links between companies via their corporate boards, of the success or failure of social movements, of the ideological alignments of judges and legislators, of social networks, and of any phenomenon which has a relational structure. That said, the article first discusses the importance of employing a relational perspective when studying military alliances. Second, using military alliances for the period between 1816 and 2003, a new measure of the strength of alliance relationships, called relational similarity, is constructed.[2] Third, it is found that in comparison to existing measures of alliance credibility, relational similarity produces results that are more consistent with the hypothesized effect of alliance credibility and which are also better able to explain observed patterns of conflict.

Structure and the strength of alliance relations

A standard answer to the question of why alliances succeed or fail is that their ability to deter depends on their credibility: the degree to which others believe that allies will fulfill their commitments.[3] To assess credibility, one might use the work of those who have analyzed the texts of alliance treaties in order to assess the level of commitment.[4] While such work has made valuable contributions to the understanding of alliances, their focus on the strength of individual alliance relationships can undermine the assessment of alliance credibility. First, the reliability of the information derived from individual alliance relations may be in question as observed levels of commitment may be idiosyncratic to a given time, place, or opponent. Moreover, because that information is derived from the text of alliance treaties it suffers from being nominal in nature. In either case, one may end up with a poor estimate of the actual or underlying level of commitment between countries and, consequently, of the credibility of alliances. Second, the focus on individual relationships unnecessarily limits one to using less evidence even when more is available. Such a view overlooks that there are often multiple alliance relationships between and among countries and consequently is unable to incorporate that information.

The single-relation perspective also overlooks information about how countries are linked or wired together by their alliances. This is important because the emergent structure of the network of alliance relationships can affect the strength, and hence the credibility, of individual alliance relationships. Consider the following. In the first scenario, there are three countries, A, B and C. A and B are allies. C is not allied with either A or B. In the second scenario, B forms an alliance with C. Now A and B are allies, and B and C are allies. If one were to focus on the individual relationship between A and B, one might think that either nothing has changed since the two are still allies, or that any observed change is due solely to dynamics within that relationship. This overlooks the contribution that B's alliance with C can have. The adoption of a relational perspective allows one to consider all three possible effects: no change, internal change or external (structural) change.

From a structural perspective, this example is simple and stylized. With actual data, the situation can be much more complex. The graph in Figure 1 for example maps relationships in 1816.[5] It is a typical but modest example of the complex

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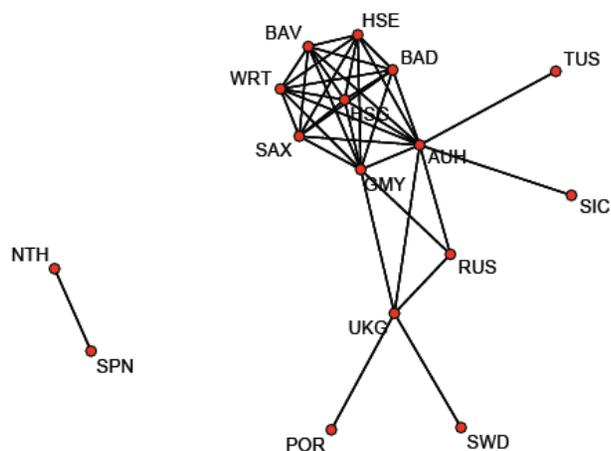
Figure 1: Defense alliances, 1816.
Source: see text.

structure of relational data in general and of alliance data in particular. The circles with the adjacent three-letter abbreviations represent sixteen countries. The lines represent the existence of an alliance relationship. For example, one can see that Spain (SPN) is allied with the Netherlands (NTH). This graph is constructed in the following way. The basic raw data is stored in matrices that record alliances and their allies. In Table 1, one sees that there are seven alliances listed as vertical columns, identified by a four-digit alliance code, and sixteen countries as horizontal rows, identified by a three-letter country code. If a country (i.e., a row) was a member of particular alliance, a 1 appears in the respective column of that row. If not, then a 0 appears. For example, Austria-Hungary (AUH) was part of four alliances (i.e., 2005, 2006, 2007, and 2008). If an alliance (i.e., a column) included a particular country as a member, a 1 appears in the respective row of that column. If not, then a 0 appears. For example, alliance number 2000 had two members, Portugal (POR) and the United Kingdom (UKG).

To see how individual countries are related to one another (i.e., to find all bilateral alliance relations), one transforms the matrix in Table 1 such that individual countries serve as rows and as columns (i.e., as observations and as variables). This is done by multiplying the matrix in Table 1 by its transpose.[6] The result is the matrix in Table 2. The elements along the main diagonal from the upper-left to the lower-right are the number of alliances of which that country is a member. For example, Austria-Hungary (AUH) is a member of four alliances (the element for AUH-AUH is 4). The off-diagonal elements of the matrix are the number of alliances to which a given pair of row and column countries are both members. For example, Austria-Hungary (AUH) and Prussia (GMY) had two alliances with one another. Even for this relatively simple example, it is difficult to see the aggregate structure of relationships in matrix form. Thus, one benefit of Figure 1 is that it provides a way of visualizing the information in Table 2.[7] Another, and perhaps more important benefit, is that by mapping all alliance relationships, one can look beyond pair-wise relations and see the entire,

Table 1: Alliances and country members, 1816

	2000	2005	2006	2007	2008	2009	2010
AUH	0	1	1	1	1	0	0
BAD	0	1	0	0	0	0	0
BAV	0	1	0	0	0	0	0
GMY	0	1	0	0	1	0	0
HSE	0	1	0	0	0	0	0
HSG	0	1	0	0	0	0	0
NTH	0	0	0	0	0	0	1
POR	1	0	0	0	0	0	0
RUS	0	0	0	0	1	0	0
SAX	0	1	0	0	0	0	0
SIC	0	0	1	0	0	0	0
SPN	0	0	0	0	0	0	1
SWD	0	0	0	0	0	1	0
TUS	0	0	0	1	0	0	0
UKG	1	0	0	0	1	1	0
WRT	0	1	0	0	0	0	0

Source: see text.

Table 2: Countries' list of allies, 1816

	AUH	BAD	BAV	GMY	HSE	HSG	NTH	POR	RUS	SAX	SIC	SPN	SWD	TUS	UKG	WRT
AUH	4	1	1	2	1	1	0	0	1	1	1	0	0	1	1	1
BAD	1	1	1	1	1	1	0	0	0	1	0	0	0	0	0	1
BAV	1	1	1	1	1	1	0	0	0	1	0	0	0	0	0	1
GMY	2	1	1	2	1	1	0	0	1	1	0	0	0	0	1	1
HSE	1	1	1	1	1	1	0	0	0	1	0	0	0	0	0	1
HSG	1	1	1	1	1	1	0	0	0	1	0	0	0	0	0	1
NTH	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0
POR	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0
RUS	1	0	0	1	0	0	0	0	1	0	0	0	0	0	1	0
SAX	1	1	1	1	1	1	0	0	0	1	0	0	0	0	0	1
SIC	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
SPN	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0
SWD	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0
TUS	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
UKG	1	0	0	1	0	0	0	1	1	0	0	0	1	0	3	0
WRT	1	1	1	1	1	1	0	0	0	1	0	0	0	0	0	1

Source: see text.

aggregate structure or network of relationships. As mentioned, this is important because the overall structure of relationships can have an impact on the strength of individual ones. It does so via three basic types of relational properties: multiplexity, transitivity, and clustering.

Multiplexity

Actors are often, if not typically, involved in relationships with more than one partner. People frequently have more than one friend. Firms usually do business with more than one other firm. States often trade with more than one other state. Similarly, countries can have multiple allies. Moreover, the number of partners can vary greatly. Some will have none. Others will have many. This property is called multiplexity. Graphically, this is represented by hub-and-spoke structures. For example, in 1816 the United Kingdom (UKG) had five alliance relationships: with Sweden (SWD), Portugal (POR), Russia (RUS), Austria-Hungary (AUH), and Germany (GMY).

Multiplexity is important for two reason. First, its presence indicates that not all alliance relationships are independent and autonomous. This is because many relationships include the same partners (e.g., the five alliance relations involving the United Kingdom). However, measures of the strength of a relation (e.g., alliance credibility) that focus solely on pair-wise relations can neither see nor incorporate such information. Second, as the number of countries with multiple allies increases, the chance of observing countries with common or overlapping partners also increases. When this occurs, the structural component of relational strength plays a greater role. This is because one might argue that, all else being equal, countries with more allies in common will have stronger and more credible alliance relationships than those with fewer or none. This is the basic notion behind the measure of relational similarity discussed in greater detail later on.

Transitivity

Even in the absence of a direct relationship, actors can be indirectly linked to one another through the presence of a third, fourth, or an *n*-th party (i.e., a higher order relationship). Friends, business and trading partners, as well as allies can themselves have their own sets of friends, partners, and allies. Called transitivity, this is captured graphically by daisy-chain structures.[8] These structures exist whenever two countries are connected by at least two alliances (i.e., lines) and at least one intermediary country. For example, while Sweden (SWD) does not have an alliance (i.e., a direct alliance relationship) with Tuscany (TUS), the two are indirectly linked via the United Kingdom (UKG) and Austria-Hungary (AUH).

Transitivity is important because while the ally of an ally is not literally an ally, a distant relation, regardless of how distant, is not equivalent to the absence of a relation. It may be less relevant and thus should be given less credit. However, it is

clearly not irrelevant and should not be treated as such. That said, there are two ways of looking at transitive relationships. On the one hand, distant transitively related countries represent potential opportunities for the formation of new alliances. On the other hand, indirect relationships represent lost opportunities because tensions and animosities may have prevented them from becoming direct relationships. Regardless, all else being equal and based solely on information about alliance formation behavior, the potential for transitively related countries will be greater than for nations which have no relationship whatsoever. For this reason, a measure of relational strength which overlooks transitivity can underestimate the strength of relationships.

Clustering

Actors can end up as members of mutually exclusive sets or families of directly and indirectly related countries. This is called clustering.[9] In Figure 1, there are two clusters: the smaller one consists of Spain (SPN) and the Netherlands (NTH); the larger one consists of the other fourteen countries. The existence of clusters is important because they determine which countries are related and which are not. All countries within the same cluster will be directly or indirectly related to one another. Only countries residing in different clusters will be completely unrelated. For example, while Sweden (SWD) and Sicily (SIC) are three links or degrees of separation apart in Figure 1, since they reside in the same cluster they will have more in common than will Sweden (SWD) and Spain (SPN) who reside in different clusters and are completely unrelated. To accurately identify clusters, one needs to map out the entire network of relations, as illustrated in Figure 1, and identify all directly and indirectly related countries. This means identifying clusters endogenously, based on evidence and data rather than in an a priori fashion (e.g., limiting one's analysis only to shared third-parties). Anything less will be needlessly myopic and will negatively affect one's measure of relational strength (e.g., alliance credibility).

Relational similarity

To deal with the limitations and problems associated with a focus on individual relationships and with the oversight of the effects of the network structure of alliance relations, a measure of alliance credibility called relational similarity is constructed. Its conceptualization begins with the insight behind the measure known as alliance portfolio similarity: the more similar are countries' lists of allies, the more similar are their security interests.[10] Applying this idea to the issue of alliance credibility, the expectation is that alliances formed by countries with similar security interests will be more credible than those formed by countries with less similar interests. All else being equal, this should enhance deterrence and reduce the amount of militarized conflict experienced by those countries. The empirical benefits of such conceptualization are two-fold. First, by comparing lists of allies, it measures

credibility using information from multiple observations rather than from single observations. Second, it allows one to capture the effect that aggregate structure can have on individual relationships. In this way, relational similarity better exploits the information contained in the data on military alliances than do existing measures.

Implementing this conceptualization is a two-step process. The first step is to compute the first-order similarities of countries' lists of alliance partners. In terms of Table 2, this entails comparing each pair of rows (or equivalently, each pair of columns). This raises the question of what the definition of similarity should be. There are two basic notions of similarity: symmetric and asymmetric. Symmetric similarity gives credit to both a common presence (i.e., positive match) and a common absence (i.e., negative match) of an ally or partner. Asymmetric similarity gives credit only to a common presence. In terms of Table 2, when comparing rows (i.e., two countries' lists of allies), a common presence is indicated by the presence of two non-zero elements for a given column (i.e., would-be ally). For example, comparing the first two rows (i.e., alliance lists), one sees that both Austria-Hungary (AUH) and Baden (BAD) were in an alliance relationship with Württemberg (WRT). In contrast, a common absence is indicated by the presence of two zeroes for a given column (i.e., would-be ally). For example, one sees that neither Austria-Hungary (AUH) nor Baden (BAD) were in an alliance relationship with the Netherlands (NTH).

In this article an asymmetric definition of similarity is used in the construction of relational similarity. Looking again at Table 2 one can see why. If one compares the last two rows, one can see that the while the United Kingdom (UKG) and Württemberg (WRT) are not directly allied with one another, they do share two alliance partners: Austria-Hungary (AUH) and Prussia (GMY). Thus, there are two positive matches. There are also four negative matches, namely with the Netherlands (NTH), Sicily (SIC), Spain (SPN), and Tuscany (TUS). Thus, whether or not to use symmetric or asymmetric similarity depends on whether one should give credit to the fact that neither the United Kingdom nor Württemberg have an alliance with those four countries. While it is possible that the United Kingdom and Württemberg did indeed have a shared enmity toward those nations, it is not something one can infer from the alliance data. After all, there are many reasons in addition to antagonism that two countries are not allies (e.g., informal alliance, irrelevance). This is one reason why one may not want to give credit to negative matches.[11] Thus, an asymmetric measure of similarity known as the Jaccard coefficient is used here. To adjust for differences in the number of allies, this measure is constructed as a ratio of four basic counts: allies that are common to both countries (A), allies that are unique to the respective countries (B and C), and states that are not allied with either country (D). In the language of similarity, (A) represents the common presence of alliance members (i.e., positive matches) while (D) represents the common absence (i.e., negative matches). The formula for the Jaccard coefficient is (A) ÷ (A + B + C).[12]

The calculation of first-order similarity compares countries' lists of direct allies. But to assess the effect of aggregate structure, one needs to consider all possible

Figure 2: Network relational similarity, 1816.

higher order similarity (e.g., allies' allies). To do that, this article uses agglomerative hierarchical cluster analysis with a single-linkage or nearest-neighbor metric of inter-cluster similarity.[13] Cluster analysis allows one to calculate the degree of relational similarity between all pairs of states be they directly, indirectly, or completely unrelated to one another. In essence, cluster analysis maps out the entire network of relations and then imposes a metric of similarity. One can visualize the results in the form of a dendrogram, a kind of family tree (Figure 2). As indicated by the vertical scale, countries with the highest degree of relational similarity are at the bottom of the graph while those with the lowest are closer to the top. The height of a given horizontal branch represents the degree of relational similarity among all countries at that height. For example, the relational similarity between Tuscany (TUS) and Sicily (SIC) is 0.33. This is somewhat low and consistent with the image in Figure 1. Clusters which have a dissimilarity score of 0 have a have no common members. They are separate components with mutually exclusive sets of members. Thus in Figure 2, and consistent with what one observes in Figure 1, there are two components: a small one consisting of the pair of the Netherlands (NTH) and Spain (SPN), and a large one consisting of fourteen countries.

Analysis

Even if one were to accept that greater attention to network structure can better reflect the data of alliance relations and can better measure the commitment and credibility of alliance relations, the question remains as to whether relational similarity produces significantly different results than existing measures. To see whether this is the case, negative binomial models of count data are employed to compare the effects of relational similarity and the two basic bilateral measures of the strength and credibility of alliance relations—Nominal Alliance Commitment and an Alliance Dummy—on the number of interstate conflicts. Nominal Alliance Commitment[14] measures the nominal depth of commitment while Alliance Dummy simply records the presence or absence of an alliance relationship.

The unit of observation is the pair-combination, or undirected dyad. This means looking at all possible pairs of countries without regard to order (i.e., AB = BA). To measure conflict, one counts the number of militarized interstate disputes involving the pair.[15] This means counting all instances in which either country in the pair found itself in a militarized dispute, not just instances of conflict within the pair. To minimize confounding between the incidence and duration of a conflict, observations that occur after the onset of a militarized dispute are excluded.

The general expectation is that alliances reduce the number of observed instances of interstate conflict for countries in alliance. For measures of commitment, nominal or relational, the expectation is that the greater the commitment, the greater the credibility of the alliance. This, in turn, should increase the chance that deterrence will succeed and consequently decrease the number of observed conflicts. As additional controls the following variables were included. Lower Democracy and Higher Democracy record the "democraticness" of countries as measured by their regime-type score taken from the Polity IV data set.[16] The former is the lower polity score in the pair (i.e., the "weakest link") while the latter is the higher. They were included to address the claims of the democratic peace hypothesis which essentially argues that democracy reduces interstate conflict. A variable called Log Power Ratio is included to control for differences in power as measured by material capability.[17] To control for neighborhood effects—that wars and conflict often occurs among neighbors—Geographic Contiguity indicates whether the pair is geographically contiguous, be they physically contiguity or cross-water (i.e., less than or equal to 500 miles). Finally, to control for the size of the international system, the Number of Countries was also included.

Relational similarity itself is not a simple substitute for bilateral measures. Partly due to the costly signaling interpretation of alliances (in which existence alone is said to be significant) and partly due to transitivity (two countries can have some degree of relational similarity without being direct allies), one needs to examine the interaction between the existence of an alliance and countries' relational similarity. This means to simultaneously include a measure for the existence of an alliance

Table 3: Negative binominal regression: relational similarity and militarized disputes

	(1)	(2)	(3)
Intercept	-0.5942	-0.5959	-0.4267
	(0.017)	(0.017)	(0.018)
Lower democracy	-0.0032	-0.0042	-0.0043
	(0.001)	(0.001)	(0.001)
Higher democracy	0.0167	0.0163	0.0141
	(0.001)	(0.001)	(0.001)
Log power ratio	0.1634	0.1633	0.1346
	(0.003)	(0.003)	(0.003)
Geographic contiguity	0.4056	0.3886	0.4532
	(0.017)	(0.017)	(0.017)
Number of countries	-0.0021	-0.0022	-0.0019
	(0.000)	(0.000)	(0.000)
Nominal alliance commitment	0.1248		
	(0.003)		
Alliance dummy (AD)		0.4668	2.1842
		(0.011)	(0.033)
Relational similarity (RS)			-0.7284
			(0.037)
RSxAD			-1.5752
			(0.051)
Prediction error	3.202	3.199	3.165
Prediction error ratio	1	0.999	0.988
Number of observations	288,705	288,705	288,705

Note: All coefficients are statistically significant at the conventional levels; $p \leq 0.01$. Standard errors are given in parentheses.

relationship, Alliance Dummy, Relational Similarity, and the interaction of the two, as measured by the product of Alliance Dummy x Relational Similarity. When all three measures are included, the two meaningful things to look for are the coefficient for Relational Similarity and that of the interaction term.[18] The former measures the effect of relational similarity when states are not directly allied. The latter measures the effect of relational similarity when states are directly allied with one another.

There are three key empirical findings. First, the two bilateral measures, in models (1) and (2) have positive, significant coefficients. While contrary to expectations,

other scholars have found this as well; perhaps nations at greater risk for conflict tend to seek allies in the first place. Second, the coefficients for both relational similarity alone and for the interaction between relational similarity and the existence of an alliance are negative and significant. This is consistent with the expectation of an alliance effect. Interestingly, the significance of relational similarity alone means that common interests or informal alignment can also reduce conflict even in the absence of a formal alliance. Third, not only are the results with relational similarity different from those of the standard bilateral measures, they also better explain the observed pattern of militarized interstate dispute. This can be seen in the lower prediction error for model (3) as compared to models (1) and (2). The prediction error is computed by comparing the ability of the different models to predict out-of-sample. This is done by dividing the data into subsets, using one subset to create estimates of the effect of alliance strength and credibility, and then comparing the resulting estimates' ability to explain the untouched subsets. A three-fold cross-validation method was used to compute the prediction error.

Conclusion

If alliance relations have a network structure then bilateral measures of alliance relations can lead to misleading inferences. To address this, a measure of relational similarity is constructed that incorporates network structures and properties. It is found that inclusion of such a measure leads to significantly and systematically different results than those obtained with standard bilateral measures and that better explains observed patterns of interstate conflict than do standard measures.

The value of mapping out the entire network of countries' alliance relations and then measuring the similarity of states' alliance relations is not just important in theory. From a practical and policy perspective, such an exercise is equally important. Knowing the identity of indirectly linked countries (i.e., distant relations) can help leaders to make new and more effective allies. Moreover, such countries will also be more likely to join an ongoing conflict on the same side. Neither is just some abstraction. There is something to be said about the idea that this is how diplomats, businessmen, and people often actually do, if not should, think. For alliances, diplomats and generals need to know the likelihood that their own allies or those of their opponents will actually come to their aid as promised. They also need to know how likely it is that those on the sidelines will possibly join the fray as well as on whose side.[19] For firms, knowing which partners have more or fewer options for partners, or finding potential new and more compatible partners, requires having information about existing business relations and can increase opportunities for greater profits or market share.

Notes

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1. One observation and one point of clarification are in order. First, instead of just looking at single roles (e.g., friendships) one could just as easily assess the overall strength of the relations by looking at multiple roles. For example, people who have the same set of friends and who belong to the same clubs are closer than those who only have the same set of friends. Second, this notion of relational similarity is different from that of equivalence as used in social network analysis (e.g., Wasserman and Faust, 1994; Hanneman and Riddle, 2005). Equivalence measures the similarity of actors' relationships regardless of the identity of their partners. Equivalence looks for actors who have similar patterns in terms of the roles they play. As such, they may not necessarily have any direct contact or partners in common. For example, uncles are equivalent but they need not have nieces or nephews in common. With relational similarity the focus is more on the partners, while with equivalence the focus is on the roles.

2. The two major data sources are the Correlates of War Alliance Data Set (COW) (Gibler and Sarkees, 2004) and the Alliance Treaty Obligations and Provisions (ATOP) project (Leeds, *et al.* 2002; http://atop.rice.edu/). Except as noted, the article uses the ATOP data because it provides a more complete census of alliances.

3. The importance of credibility in explaining how alliances work comes from the theory of costly signaling (e.g., Schelling, 1960; Spence, 1973; Smith and Harper, 2003). According to this theory, the existence of common interest between would-be allies alone may not be enough to deter opponents. First, despite their common interests, they may not actually come to one another's aid. Second, despite their statements or promises to the contrary, countries may actually be bluffing. For this reason, to convince opponents, countries formalize a commonality of interests as an alliance. This formalization imposes costs on the allies: it cuts off their options vis-à-vis other potential partners, puts their reputations on the line, and imposes sunk costs (e.g., coordination of military strategies). The benefit of paying such additional costs, even for "honest" countries, is that those costs make the alliance credible. The expectation is that only those willing to honor their commitments will be the ones that will be willing to pay the costs associated with alliance formation. In essence, the costs of alliance formation separate the committed from the uncommitted. In this way, an alliance becomes a credible signal that reliably indicates the commitment of its members and which, consequently, deters opponents and reassures partners.

4. For instance, Leeds, *et al.* (2002); Gibler and Sarkees (2004).

5. The data is only for defensive alliances and come from the Correlates of War Alliance Data Set. The country codes and countries are as follows: AUH Austria-Hungary; BAD Baden; BAV Bavaria; GMY Germany/Prussia; HSE Hesse Electoral; HSG Hesse Grand Ducal; NTH Netherlands; POR Portugal; RUS Russia; SAX Saxony; SIC Sicily; SPN Spain; SWD Sweden; TUS Tuscany; UKG United Kingdom; and WRT Württemberg.

6. In the language of social network analysis, one transforms two-mode data about the relationships between alliances and countries into one-mode data about the relationships among countries. The transpose is a transformation that exchanges rows with columns.

7. For the sake of illustration, only information about the existence of an alliance relationship (i.e., values greater than zero) rather than the number of relationships (i.e., the actual values) is used. However, if one wanted, one could graph separate lines for each number of alliance relations. Also, one could use lines of different widths to indicate differences in nominal commitment. The layout is determined by Fruchterman and Reingold's force-directed placement algorithm as implemented in Carter T. Butts's "sna" library, Version 2.0-1, for R.

8. The article defines multiplexity as being mutually exclusive of transitivity. The former includes only direct relations. For the case of military alliances, multiplexity includes only the set of nations with which a state has an alliance. Such nations are one degree of separation apart (i.e., a hub and its spokes). Transitivity includes only indirect relations. Transitive relations are the set of nations with which one's allies, but not oneself, has a formal alliance. Such nations are two or more degrees of separation apart (i.e., links in daisy chain). While transitively related states are not literally allies, they are still "related." Thus, they have some similar security interests. Thus, the notion of transitivity is one of indirect transitivity (e.g. if A is related to B and B is related to C then A is related to C). The situation of direct transitivity (e.g., if A is allied with B and B allied with C, then A is allied with C) applies if and only if all three nations have direct alliance relations with one another. However, such closed transitive relations are, in the terminology of this article, captured by the notion of multiplexity.

9. In social network analysis and graph theory, such clusters are called components.

10. Wallace (1973); Bueno de Mesquita (1975); Signorino and Ritter (1989).

11. Another reason concerns the relative balance between positive and negative matches. When negative matches significantly outnumber positive ones, one's measure is dominated and potentially inflated by the weight of zeros or the absence of relationships.

12. The basic measure of symmetric similarity is the matching coefficient: $(A + D) \div (A + B + C + D)$.

13. Kaufman and Rousseeuw, 1990; Everitt and Rabe-Hesketh, 1997. The single-linkage metric is sometimes called the "friends of friends" clustering strategy.

14. In the ATOP alliance data set, five categories of commitment are recorded: offense, defense, neutrality, non-aggression, and consultation. To test the hypothesized deterrent effect of alliance, information about offensive commitments are excluded. The remaining four categories were weighted in order of the depth of commitment from a high of "4" for defensive commitments to a low of "1" for consultation. Then, the highest observed commitment is recorded as the nominal commitment.

15. See Jones, Bremer, and Singer (1996).

16. Marshall and Jaggers (2002).

17. Measures of material capability are based on the Composite Index of National Capability (CINC) scores from the Correlates of War data set (v3.02) (Singer, Bremer, and Stuckey, 1972). The CINC score is the average of each state's share of material power across six separate categories: total population, urban population, iron and steel production, energy consumption, military personnel, and military expenditure. For a given pair of countries, the Ratio of Power is the natural logarithm of the quotient of the higher CINC score divided by the lower CINC score.

18. Braumoller (2004).

19. Of course, indirect relationships may not be missed opportunities but dead ends. The absence of a direct alliance may be the result of irresolvable tension, if not animosity. Generally speaking, however, being indirectly connected (i.e., being in the same cluster), means that there is will be greater potential for a strong and credible alliance than there will be if there were no relationship whatsoever (i.e., being in different clusters).

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Economic theories of dictatorship

Alexandre Debs

Political and economic life are closely linked. On the one hand, economic resources affect the way that political conflict is resolved. We may ask: which politicians or pieces of legislation are successful given the influence of lobbying and vote-buying? When are democracies or dictatorships stable as a function of income, income inequality, or endowment in natural resources? On the other hand, political institutions affect economic outcomes. We may ask: how does the process of the selection of the executive (democracy vs. dictatorship, parliamentary vs. presidential democracy) affect the provision of public goods, corruption, or growth?

Political scientists and economists have branched out of their traditional fields to tackle these questions. Historically, much more attention has been paid to the study of democracies. Starting with the work of J.A. Schumpeter and A. Downs, we have seen the emergence of economic theories of democracy. According to this view, we should study politicians in a democracy much like firms in the marketplace. Politicians compete for votes in the same way that firms compete for consumers: the former strive to get elected, the latter aim to maximize profits. In both processes, we should understand that the "product" that they offer, a platform for the politician and a good or service for the firm, are mere means to achieve their end. In other words, politicians do not care about the platform that they pick and freely adapt their message so as to ensure their election.

Analyzing democracies with such an economic model in mind has proven very useful, giving birth to the so-called Rochester School of political science, spearheaded by William Riker in the 1960s.[1] This approach has been slow to expand to the study of dictatorships, but there is a recent and expanding literature on the subject. The goal of this essay is to review recent advances in what we may call economic theories of dictatorships. More specifically, this article focuses on studies using game theory to study the macroeconomy of dictatorships. To be clear, game theory assumes that actors behave rationally and take into account the strategic effect of their behavior on other actors. As a general feature, it strives to present a simplified version of real life so as to highlight salient tensions and interactions. As a result, it leaves out some aspects of the real world and, as we evaluate its usefulness, it is important to determine whether too much is lost in the exercise. The following pages discuss what we have learned from economic theories of dictatorship and highlight avenues for future research. The essay proceeds as follows. The first section focuses on the effect of economic resources on the stability of dictatorships. The second considers the political factors affecting the economic performance of dictatorships. And the third reflects on the general usefulness of economic theories of dictatorship, with an application to foreign relations.

Economic foundations of dictatorships

When considering how economic variables affect the transition to democracy, a long-standing answer is captured in the modernization hypothesis according to which economic development spurs political development (from dictatorship to democracy).[2] As a guide for foreign policy, the hypothesis suggests that short-term security concerns could justify supporting dictators around the world, and if we care to spread democracy, it will follow naturally from development.

While interesting, the modernization hypothesis has some drawbacks. Empirically, the theory finds weak support. Looking at the 1950-1990 period, Przeworski and Limongi conclude that there is no evidence that greater income facilitates the transition to democracy. Instead, it appears that greater income improves the stability of democracies. But Boix and Stoix argue that focusing on the post-World War II might skew the analysis, since many relatively rich countries democratized before 1950. Taking the sample back to 1850, they show that income increases the transition from dictatorship to democracy.[3]

The debate could have been settled, but recent authors argue that even 1850 might not be sufficiently early! Some countries experienced industrialization and accelerated growth prior to 1850 and while economic growth could have preceded democracy, it may not have caused it. Instead, they could have both been determined by earlier events in history. Acemoglu and co-authors raise that possibility and show that if we control for the fact that countries entered different development paths, there is no effect of income on democracy between 1875 and 2000. What could be such development paths? For former European colonies, it could have been the environment at the time of European settlement. If settlers arrived in an area of high indigenous population density, they preferred to set up repressive and extractive institutions, which helped their political and economic survival in the short-run but hurt both growth and democracy in the long-run.[4]

This would appear disappointing from a policy perspective: what can we do, today, to change development paths? But we should not forget that the argument bestows a central role to institutions, which can indeed be changed. Moreover, they make us think harder about the mechanism through which institutions are set: who can change institutions, and what are their preferences and constraints?

The following pages discuss what we have learned from economic theories of dictatorship and highlight avenues for future research. The essay proceeds as follows. The first section focuses on the effect of economic resources on the stability of dictatorships. The second considers the political factors affecting the economic performance of dictatorships. And the third reflects on the general usefulness of economic theories of dictatorship, with an application to foreign relations.

Coincidentally, the two most prominent economic theories of dictatorship, by Acemoglu and Robinson and by Boix, tackle these questions in a similar way, sifting through the complexity of politics to focus on conflict between two groups, the rich and the poor.[5]

Exit income and enter inequality as the foundation of economic theories of dictatorship and democracy. Conceptually, this is potentially a more fruitful approach to understanding the stability of dictatorships than simply income. Why would greater income threaten dictatorships, according to the modernization hypothesis? Loosely speaking, according to the modernization hypothesis, as income grows, citizens are more likely to be enlightened, able to make rational decisions, and less vulnerable to extreme ideologies. Perhaps so, but they may also be happier with the current regime if it allows for a higher standard of living. What probably matters is the distribution of resources in society. And it is a defensible assumption that the group of politically powerful citizens is rich, if only because many of the restrictions on voting rights were based on land ownership.

The question then is: how does income inequality affect the stability of regimes? How can politically excluded groups credibly threaten the elites of violently overthrowing their regime? Given the destruction caused by revolutions, why could the elites not always buy off the opposition? Acemoglu and Robinson, and Boix, answer this question in their own way, each focusing on one of two standard problems in negotiating peaceful settlements: commitment problems and asymmetric information.[6]

In the Acemoglu and Robinson model, the threat of revolution materializes because of commitment problems. For them, there is a fundamental difference between policies and institutions, in that the former can be changed easily by the executive, while the latter are more durable. The rich can offer money to the poor (a policy), but if they do not concede political power through democracy (an institution), the poor understand that this promise is not credible if they cannot consistently threaten to overthrow the dictatorship (a reasonable assumption given how difficult it is to solve their collective action problem). If the cost of mounting a revolution is fixed and independent of inequality, then there is a window of intermediate levels of inequality where a policy is not sufficient to stave off a revolution, but an institutional change (democracy) is. If we also allow the elites to prevent a revolution through repression, and if we model repression appropriately, we get an inverted U-shaped relation between inequality and democracy. At low levels of inequality, dictatorship survives with sufficient policy concessions to the poor. At intermediate levels, the elites democratize because policy concessions are no longer sufficient and repression is too costly. At high levels, the elites repress the poor. They support their argument with detailed case studies.

In the Boix story, violence can occur because of asymmetric information: the excluded group is uncertain about the strength of the government and may attack if it believes that the government is weak and did not make sufficient concessions. The prediction of the model is as follows. At low levels of inequality, democracy is relatively costless for the elites and all governments democratize. At higher levels of inequality, there is an equilibrium where only weak governments find it profitable to democratize, since they face a greater cost of repression than strong governments. If the poor observe that the government did not democratize, they infer that the government is strong and refrain from revolution. Boix then concludes that there is a decreasing relationship between inequality and democracy and argues that this relationship obtains in the data, looking at the period from 1950 to 1990.

Taking a step back, both Acemoglu and Robinson, and Boix, clarify the relationship between conflict (or inequality) and regime change, but given the different conclusions, it is natural to ask to what extent the conclusions depend on the particular game and functional forms. Theoretically, if inequality increases the stakes of holding office, why should it favor the group in power or the excluded group, if they both exert greater effort to gain power? This argument, and a more general theoretical critique, is found in Houle. Interestingly, he finds little support for either the inverted U-shaped or decreasing relationship, using a measure of inequality which, he argues, is more appropriate than that of Boix.[7]

While the empirical debate on the role of inequality continues, we can try to understand the effect of other economic factors on the stability of dictatorships. According to many scholars, one such factor concerns the supply of natural resources. The possibility that there is a resource "curse," i.e., that the blessing of natural resources hurts political development, seems appropriate given the incidence of dictatorship in many oil-rich countries, for example in the Arabian peninsula. But many stable democracies are resource-rich (e.g., Australia, Norway, Canada) and some would argue that, until recently, Venezuela was among the most stable democracies in Latin America because of its supply of oil. How do we account for the empirical evidence? Dunning suggests an answer. In a clever reformulation of the Acemoglu and Robinson baseline model, he shows that if the resource is owned by the government, the supply of oil rents has two effects on the stability of dictatorships. Directly, greater resource rents have an authoritarian effect because they increase the stakes of holding office, which then hurts democratization in a typical Acemoglu and Robinson framework in which, with probability one, the elites can prevent revolution and democracy by repression. Indirectly, however, resource rents have a democratic effect. With more natural resources, the pressure on redistributing private income decreases and the elites' incentive to oppose democratization decreases. Dunning argues, first, that the authoritarian effect becomes more important when natural resources constitute a larger share of national income, so that we observe a curse of resource dependence, not of resource rents per se. Second, he states that the democratic effect increases with inequality. He presents large-sample evidence in favor of these claims between 1960 and 2001. Resource rents may also affect the stability of a dictatorship through the particular institutions that they promote within a dictatorship. In Dunning's argument, natural resources differ from private income

in that they are owned directly by the state.[8]

Gandhi and Przeworski take a similar starting point and suggest that a dictator may need to elicit less cooperation from society if the economy is dependent on natural resources. If legislatures lead to policy concessions and generate greater cooperation in response, then a dictator is less likely to allow for opposition parties to join a legislature if the country is resource-rich. Examining dictatorships between 1946 and 1996, they provide evidence in support of this hypothesis.[9]

Economic performance of dictatorships

If institutions created by a dictator may affect macroeconomic performance, it is then interesting to ask about the reverse relationship: what is the effect of dictatorial institutions on economic performance? Arguably the most important starting point is Olson's. Taking a long view of history, Olson argues for the economic benefit of monarchy relative to the political system of nomadic tribes. Illustratively, he calls the monarch a "stationary bandit" (since he owns his territory and plans to cede it to his kin) and the nomad a "roving bandit." He argues that stationary bandits have the greater incentive to encourage growth, through moderate taxes, generous investment, and the protection of private investments because they care about economic performance over a longer time period.[10]

This argument is enlightening if we take a long view of history, but in the modern era, there are many examples of long-lived dictators who preside over troubled economies. The question then is why dictators stay in power despite poor growth. Unfortunately, Olson's framework cannot directly answer that question because it assumes that tenure is independent of policies. Debs argues that once we take into account the effect of a dictator's policies on his tenure, it may well be that a dictator remains in power because of poor growth. Indeed, if we study the replacement of leaders seriously, we notice that dictators typically tend to be replaced by members of their own government.[11] This is no surprise because dictators monopolize the reins of power and, if they do not purge them, co-opt skilled politicians. But experienced politicians represent the potential figureheads around which an opposition can rally. The dictator thus faces a genuine trade-off between political survival and economic growth.[12] Because he cannot make all economic decisions, he must delegate some authority to members of his state. Yet with such freedom of action, these members of the state can claim credit for successful economic policies. In order to prevent them from revealing their aptitude for economic decisionmaking, the dictator may offer them perverse incentives. This, practically, could mean that a dictator would grant his underlings short and uncertain tenure across a variety of location (as in Mughal India, the Ottoman empire, and Zaire under Mobutu). Here, the dictator turns his underlings into a band of "roving bandits," so to speak, and undermines their incentive to encourage growth. This comes at a disastrous cost to the economy, but provides the benefit of preventing them from building their own support base.

Taking this logic one step further, Debs also shows that dictators may benefit from undertaking wasteful projects themselves. The reason is that this could obfuscate any underling's attempt to signal his type. More precisely, groups of citizens look to members of the state as possible replacements to the current dictator and prefer to rise up for a competent insider. Now it could be that, if the dictator makes efficient economic decisions, only competent members of the government want to replace him, since the economic surplus that they generate, once in office, is sufficiently large. To forestall this possibility, the dictator could ensure his survival by wasting resources. By decreasing the payoff of all members of the state under his rule, underlings are dissatisfied and would want to replace him. But in this case, claims of competence cannot be trusted and the leader stays in power.[13]

The models of Debs predict that dictators have the proper incentives to encourage growth when they are either very weak or very strong militarily, but not when of intermediate strength. The prediction appears consistent with the case study evidence. Mughal India, for example, between the reign of Akbar (1556-1605) and Aurangzeb (1658-1707), went from its economic golden age, during the reign of a militarily successful leader who greatly expanded the frontiers of the empire, to its economic decay, with the rule of a weaker emperor who was mired in the costly Maratha wars. After Aurangzeb, emperors were even weaker, particularly given the increased European presence, while the economy seems to have experienced a relatively bright period.[14]

In an insightful study, Besley and Kudamatsu take a different approach. In their model, only the dictator makes economic decisions as a public official and he is either kept in office or replaced by a "selectorate" (a clique around the leader). They argue that growth ensues when the selectorate can replace a dictator with relative ease without running the risk of losing their political advantage. In other words, weak leaders, relative to the selectorate, preside over growth, which is positively correlated with leadership turnover. Using the Polity IV data set (1800-2007), they present evidence in support of their hypothesis.[15] We learn that by analyzing the incentives of leaders to remain in power, we may find that they have perverse incentives to encourage growth.

Discussion, with an application to foreign relations

To assess whether game-theoretic tools are successfully applied to the study of dictatorships, one requirement would be to assess whether scholars have identified the key political actors and accurately described their interaction. If democracy is defined by a competitive struggle for people's votes, then what are the key characteristics of dictatorships?

In all the theories sketched above, there is a group that is politically excluded and does not have a nonviolent way of expressing its preferences. In the Acemoglu and Robinson, and Boix models, the key fault line lies between the rich and the poor. (In

some cases, though, the key fault line could fall along ethnic lines.[16]) It may also be helpful to uncover agency relations within the group in power, as do Debs and Besley and Kudamatsu.[17] Looking more closely, one question would be to ask whether there are details about the particular institutions that keep a dictator in office and that affect political and economic outcomes. Geddes offers perhaps the most influential study in that vein, categorizing countries depending on whether the inner circle of the dictator consists of members of the military (military dictatorship), of members of a single-party (single-party dictatorship), or if power is concentrated in the hands of the ruler (personalist dictatorship). He argues that if the inner circle around a leader is a group of military officers, then such regimes are less stable because military officers place a high value on upholding national unity and will likely give up power in order to avoid a civil war. Therefore, if we expect economic crises to question the legitimacy of a regime, and if crises arrive at exogenous rates, military regimes should be quicker to fall. For data for 1946 to 1998, Geddes finds evidence in support of her hypothesis.[18]

This typology can also be used to study the reverse relationship, i.e., the effect of regime type on economic performance. Wright argues that the economic effect of legislatures may vary because legislatures serve different purposes. If they serve as a commitment by the dictator not to expropriate private investors, then they can encourage growth. If they serve to split off the opposition, then they can hurt growth. Wright argues that the structure of the economy and the base of power of a dictatorship determine the purpose that a legislature plays. In personalist dictatorships, they are used to split off the opposition, rewarding and punishing elites who challenge the ruler. Wright finds evidence that legislatures hurt growth in personalist dictatorships and encourage growth in military and single-party dictatorships.[19]

Finally, we can build on these typologies of dictatorships and our definitions of democracy to reassess our understanding of the domestic determinants of foreign policy. In particular, consider the democratic peace hypothesis, the finding that democracies rarely, if ever, fight wars against each other.[20] This finding has been recognized as the closet thing to an empirical law in international relations and has served as an inspiration for American foreign policymaking since President Clinton. Yet a convincing explanation of the finding is still lacking.[21]

The typical starting point is to assume that democrats are more accountable than dictators, that losing a war represents a policy failure and therefore that democrats only fight the wars that they are likely to win, so that two democracies are unlikely to fight one another. One challenge in building such an explanation is that the evidence suggests that the war outcome has a greater effect on the tenure of dictators, not democrats. For a democrat, defeat or victory in war does not affect the hazard rate of losing office, while for a dictator defeat significantly reduces tenure in office and victory significantly increases tenure in office. Perhaps dictators are not competing for votes, but they may be accountable to another constituency. The other piece of information, a complicating factor, is that the democrats actually have less to lose (in economic terms and otherwise) from losing office. For example, they can find lucrative employment as consultants or speakers. In contrast, dictators are much more likely to be exiled, jailed, or killed after leaving office. If we believe that democrats are more likely to be punished as a function of a war outcome, but that the punishment is less serious, it is difficult to determine whether democrats or dictators are more biased toward war.

Building on the economic theory of democracy and testing their theoretical result within the sample of dictatorships, Debs and Goemans suggest an explanation for the democratic peace hypothesis that circumvents these difficulties. Recall that in a democracy, the executive is chosen through competitive struggle for people's votes. Voting is a relatively cheap procedure to replace a leader, so that he may be in general more accountable than otherwise. But another feature of voting is that its cost is not much affected by the military power of the leader. The replacement of dictators, typically done by threat or use of force, is largely affected by their military power and, thus, by the outcome of a war. Therefore, taking such a view of the economic theory of democracy, we may rationalize why the survival of dictators is more affected by the war outcome.[22]

Taking this one step further, we can explain why democrats are unlikely to fight wars against one another. If victory is associated with a larger slice of an international pie than defeat, and if war outcomes are informative about the effect of peaceful concessions on a leader's tenure, then we conclude that the survival of dictators is more sensitive to peaceful concessions. Given that they also have more to lose from losing office, dictators are less accommodating partners in peaceful bargaining, and we should see democrats get involved in fewer wars, especially against each other. Debs and Goemans test the logic of the theory, looking at the sample of dictatorships between 1946 and 1996, and find support for it. Leaders who have the most to lose from leaving office (i.e., military dictators) are most likely to get involved in wars.

Therefore, we see that in terms of understanding foreign policy, there are some rewards in unpacking the relationship between members of the ruling elite. In general, economic theories of dictatorships should strive to strike the proper balance between simplicity and a richer match with the real world so as to allow for possible extensions and to generate useful predictions. This determination, of course, depends on the question at hand. Needless to say, much work remains to be done, but the approach offers promising avenues for future research.

Notes

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1. See Amadae and Bueno de Mesquita (1999).

2. Lipset (1959).

3. Przeworski and Limongi (1997); Boix and Stokes (2003).

4. Acemoglu, *et al*. (2008).

5. Acemoglu and Robinson (2000; 2006); Boix (2003).

6. Fearon (1995).

7. Houle (2009).

8. Dunning (2008).

9. Gandhi and Przeworski (2006). There is a growing literature on the effect of legislatures on the stability of dictatorships, which cannot be reviewed here. See, e.g., Lust-Okar (2004); Boix and Svolik (2008); as well as Myerson (2008).

10. Olson (1993).

11. Debs (2008a); see also Svolik (2008).

12. See also Egorov and Sonin (2009) for a related framework. In that model, competent viziers can discriminate against potential coup-plotters, making them risky subordinates for the dictator. In the model discussed in the text, viziers represent the potential successors of dictators and let them take an economic decision (i.e., they decide whether to make an investment), studying the effect of the dictator's concern for survival on economic efficiency (i.e., whether the investment takes place).

13. Debs (2008b).

14. Marshall (2003).

15. Besley and Kudamatsu (2007).

16. See Padro-i-Miquel (2007) for the argument that ethnic divisions could undermine economic performance. In short, citizens may be sufficiently afraid of the rule of another ethnic group so that they could tolerate very low levels of performance from a leader of their own group. (Besley and Kudamatsu, build on this model to make their own argument.) See also Collier (2009) for an excellent review of recent studies on the political economy of weak democracies, detailing how elections are not sufficient to generate public goods or reduce political violence.

17. Or one could model a dictatorship as a self-sustaining coalition, whose members can violently eliminate one another. See Acemoglu, Egorov, and Sonin (2008).

18. Geddes (1999).

19. Wright (2008).

20. Russett (forthcoming).

21. It has long been argued that economic variables, such as trade, have an effect on conflict (Polachak, 2007). Some even claim that the causal effect attributed to democracy is really due to economic development (Gartzke, 2007). This latter claim is controversial and has not been universally recognized in the literature.

22. Debs and Goemans (2009).

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Issues in third-party intervention research and the role of destruction in conflict

Joel Potter and *John L. Scott*

Interest in peacekeeping has blossomed since the end of the cold war. However, academics have only recently begun to study third-party interventions in conflict.[1] We review the flourishing new literature on third-party intervention and point to areas of research in which economic theory may be useful to enhance scholars' and laymen's understanding. Our review highlights three aspects of the literature on third-party intervention. First, what are the goals of third parties who intervene and do they achieve those goals? Second, we review academic work concerning United Nations interventions. And third, paying attention to the recent extension of theory that models conflict as destructive, we suggest that this theory might be usefully grafted onto the theory of third-party intervention.

Goals and success of interventions

Regan discusses the issue of third-party objectives in civil conflict. He states that interventions can reduce or prolong conflict, depending on whether intervention is in behalf of the government or the opposition. He hypothesizes that early intervention in support of the government will shorten the conflict, while early intervention on behalf of the opposition will lengthen duration. He tests these hypotheses using a hazard model applied to monthly data on 150 conflicts drawn from 1944-1999. Contrary to his hypothesis, the empirical results suggest that early intervention in favor of the government does not statistically affect the duration of conflict. However, the estimates show that intervention on behalf of the opposition does tend to lengthen the duration of conflict, although the substantive impact is small. When Regan takes account of the type of intervention—military or economic—he finds that third-party involvement greatly increases the expected duration of conflict. Even neutral interventions—those made on both sides of a conflict—are found to lengthen conflict duration. He writes:

> "Clearly, the notion of what constitutes an effective intervention strategy is an important element in understanding how civil conflicts are managed. When focusing exclusively on military and economic forms of outside interventions, conflicts appear to be not only ineffectively managed, but the interventions themselves also appear to prolong the conflict ... The results further suggest that policy makers need to think more critically about the role of military or economic interventions if their objective is to manage the violent aspects of a conflict."[2]

Collier and Sambanis cite Regan as the gold standard in third-party intervention research. But they view Regan's work as lacking crucial normative content, because third parties likely have strong views on "the perceived justice of the rebellion." This critique might extend to Siquira, who assumes that third parties only value peace.[3] Collier and Sambanis also note that even if the third party seeks swift conflict resolution, it may not be clear which combatant is strongest; that researchers lack data on the cost of both conflict and intervention; and that Regan omits important variables (although Collier and Sambanis do not specify which variables).

If, as Regan finds, third parties do actually prolong conflict, then either they wish to prolong conflict or their actions work against their intentions. However, other factors which are not currently accounted for, such as the intensity of an ethnic conflict, may lead to both third-party involvement and longer expected conflict duration (econometrically speaking, this is an endogeneity problem). Elbadawi and Sambanis, for example, effectively deal with endogeneity issues. They employ economic theory to ascertain how intervention affects conflict, basing their empirical work on the theoretical economic approach of Intriligator and Brito. Elbadawi and Sambanis predict that external assistance to a rebel party will increase duration of conflict, ceteris paribus, later theoretically confirmed by Chang, Potter, and Sanders, and by Chang and Sanders. This is because external intervention will serve to raise rebel capabilities, allowing them to continue their resistance.[4]

But Elbadawi and Sambanis note that this causal relation between intervention and duration is difficult to show empirically. Does intervention on behalf of rebels cause a longer lasting conflict, or do longer lasting conflicts lead to external intervention? To resolve this issue Elbadawi and Sambanis employ the econometric technique of instrumental variables. First, they estimate a random effects probit model to predict interventions. They find that several factors lead to external intervention. Civil wars with high casualties invite intervention; ethnic conflicts invite less intervention; and intervention is more likely when war was present in the previous period. Next, they use these results in an ordered probit model to estimate the duration of conflict. As predicted by theory, the coefficient of expected intervention is positive; hence, they conclude that external intervention on behalf of rebels will increase the duration of conflict.

Chang, Potter, and Sanders, and Chang and Sanders do not assume that interveners

> Our review highlights three aspects of the literature on third-party intervention. First, what are the goals of third parties who intervene and do they achieve those goals? Second, we review academic work concerning United Nations interventions. And third, paying attention to the recent extension of theory that models conflict as destructive, we suggest that this theory might be usefully grafted onto the theory of third-party intervention.

value either peace or war. Instead, they assume that third parties attempt to maximize their own utility with regard to their geopolitical, ideological, or religious interests. In these game-theoretic models the third party subsidizes an ally, which may either prevent or trigger a conflict. Likewise, Chang, Potter, and Sanders develop a theoretical model that demonstrates that third parties are sometimes not interested in peace. In their model a third party may assist an ally by choosing a military subsidy that will reduce the ally's cost of arming. This subsidy may prevent war if the conflict occurs on the ally's land, or cause war if the conflict occurs on the opponent's land. Hence, third parties may be either peacemakers or peacebreakers.[5]

Given the complex nature of third-party intervention, a model that can account for multiple goals for the intervener might prove valuable. An intervening party might simultaneously value an ally possessing a territory and value peace; hence, research on this type of systematic decisionmaking would be preferable to a single-choice variable model.

United Nations interventions

The United Nations is the market leader of the peacekeeping industry. Even when it is not directly involved, it is likely that the U.N. has given explicit approval for the country/coalition that is directly involved;[6] hence most academic research on intervention examines U.N. peacekeeping missions.

The notion of peacekeeping/peacebuilding is evolving. After the cold war, the United Nations became involved in conflicts throughout the world. In the early 1990s, peacebuilding referred to missions carried out through diplomacy and mediation efforts with the United Nations. By the end of the 1990s, peacebuilding became the choice word for multidimensional and increasingly intrusive missions with the goal of stabilizing societies/states. Recently the U.N. has expanded its interventions. From 1999 through 2006, U.N. peacekeeping missions increased by more than 500 percent. This surpassed the deployments of all other regional peacekeeping organizations combined. Benner, Binder, and Rottman state: "In mid-2006, the U.N. Peacebuilding Commission became operational, giving formal recognition to the central importance of peacebuilding for the world body." The authors define peacebuilding as missions undertaken by both civilian and military personnel mandated to consolidate peace and to prevent a recurrence of fighting in a country emerging from war.[7]

Recent research investigates whether U.N. peacekeeping missions produce peace and stability. Collier, *et al*. emphasize economic recovery as a postconflict priority. However, they also argue that reducing the probability of future conflict is another important priority. The researchers conclude that while economic aid and policy can support the first priority, the United Nations is crucial in supporting the latter. They find that a 100 percent increase in U.N. spending leads to a 9 percentage points decrease in the probability of future conflict (from 40 percent to 31 percent). They also propose that democratic elections in a country that has experienced conflict will reduce the probability of further violence; but their data do not support this hypothesis. Countries that have an election after experiencing civil war are just as likely to relapse into conflict as countries that do not have a postwar election.[8]

Studies such as those by Fortna and by Doyle and Sambanis have found that the U.N. does foster peace while other studies such as Gilligan and Sergenti cast doubt on the issue. Thus, Fortna finds evidence that U.N. peacekeeping missions are not random. Instead, peacekeepers are generally sent to severe conflicts. In addition, after controlling for conflict specific factors (i.e., duration), she finds that peacekeeping missions are in fact successful for keeping the peace. Gilligan and Sergenti are suspicious of Fortna's results because the cases in which the U.N. intervened were different from those in which it did not; thus, Gilligan and Sergenti conclude that Fortna's estimates of the effects of the U.N. operations were largely extrapolations from the available data.[9]

Doyle and Sambanis find that U.N. peacekeeping missions are positively correlated with peace in a region. They make the case that the United Nations brings about peace where it would not have otherwise existed. The researchers found that it was easier to build peace (1) in nonidentity wars; (2) in countries with relatively high development levels; and (3) following long wars of low intensity. But Gilligan and Sergenti argue that Doyle and Sambanis do not deal with serious issues in their sample. They point out that the United Nations only carried forth an actual postconflict role when disputes had more than 148 cumulative battle deaths. Gilligan and Sergenti conclude that Doyle and Sambanis's predictions concerning a dispute with a small number of deaths are not based on the data:[10]

> "Speaking metaphorically, Doyle and Sambanis's analysis compares apples and oranges or more precisely it makes inferences about the effect of a given treatment on apples based on observations of the effect of the treatment on oranges."

To account for this apples and oranges issue, Gilligan and Sergenti pre-process their data using matching techniques suggested by Ho, Imai, King, and Stuart. These are designed to more reliably infer causality. They find that postconflict involvement increases the chance for peace but that U.N. involvement does not foster peace when war is ongoing, casting doubt on the effectiveness of the organization's peacemaking mission. They also note that their own methods may omit unobservable factors which may cause both war and U.N. involvement. To resolve this issue, researchers might use instrumental variables, as in Elbadawi and Sambanis, which we previously detailed.[11]

What is the true goal (or goals) of the United Nations? The single goal of securing peace might be too simplistic an answer. As Balch-Lindsay and Enterline assert, "[p]olicymakers often trumpet the potential for third parties to stop the killing associated with civil wars, yet third parties as strategic actors also have incentives to encourage longer civil wars."[12]

Destruction in conflict

In 2000, the *Journal of Conflict Resolution* dedicated an entire issue to the economics of conflict featuring leading scholars in the field. Articles by Gershenson and Grossman and by Garfinkel and Skaperdas explored conflict with perfect information. Both utilized a two-party framework where both sides compete for a resource. In Gershenson and Grossman the parties compete over territory (i.e., land). They do not model the destructiveness of conflict, implicitly assuming that the amount of destruction in any conflict is zero—that territories will be unscathed in an armed conflict. In Garfinkel and Skaperdas's article the parties produce a civilian good that gives utility and a military good that may only be used to potentially capture or defend supplies of the civilian good. In contrast with Gershenson and Grossman, Garfinkel and Skaperdas allow for destruction in conflict. They conclude that as conflict becomes more destructive, other things equal, war becomes less likely.[13]

In an extension of Gershenson and Grossman, Chang, Potter, and Sanders use the same approach, but relax a key assumption—they introduce a nonnegative destruction term.[14] They model conflict in one time period as reducing the land's or territory's value in the following period. Hence, an aggressor who wishes to take control of a territory, in part because of its economic value, faces a dilemma. On the one hand, the aggressor must engage in armed conflict in order to secure the desired territory. On the other hand, engaging in armed conflict reduces the value of the territory the aggressor wishes to possess. This model also assumes that the amount of destruction may vary from conflict to conflict. Advances in technology allow aggressors more freedom of choice in the amount of destruction they cause. For instance, precision guided and remotely targeted munitions may allow an aggressor to reduce the amount of destruction necessary to secure a territory. Alternatively, with greater mobility and advanced destructive munitions, the aggressor may threaten greater destruction. Accordingly, the model predicts that as conflicts become more destructive, ceteris paribus, they will end more quickly. Additionally, the authors assume that parties cannot choose the level of destruction they desire to wreak on the disputed territory; rather, they can only choose the level of resources devoted to the conflict. More resources increase the likelihood of victory, ceteris paribus. So when an aggressor increases the quantity of resources devoted to the war, other things equal, their chance of securing the territory increases. But, according to the model, the level of resources is independent of the amount of destruction. Given these assumption, the aggressors have no choice concerning the level of destruction wrought. This is also true for Gershenson and Grossman and for Garfinkle and Skaperdas. Future research on third-party intervention may model opponents as being able to choose both an optimal amount of resources and destruction.

Conclusion

Research into third-party intervention has grown quickly since its recent birth. Scholars have begun to grapple with complex theoretical relations that are complicated by the possibility that we are uncertain about the goals of the parties involved—whether they seek peace, whether they favor one party, or whether they have more complex motivations. Empirical work has attempted to untangle the effects of intervention in either prolonging conflict or promoting peace. The flexible statistical model of Elbadawi and Sambanis stands out at this time. Finally, researchers have begun to model the destruction of conflict, pointing toward a new direction in modeling the incentives and effects of not only conflict in general, but also specifically of third-party intervention.

Notes

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1. Interest: Fortna and Howard (2008); recently: Regan (2002).

2. Regan (2002); quote from p. 72.

3. Collier and Sambanis (2002, pp. 7-8); Siquira (2003). Researchers that assume the only goal of the third party is peace are called idealists by Regan (1998).

4. Elbadawi and Sambanis (2000); Intriligator and Brito (1988); Chang, Potter, and Sanders (2007b); Chang and Sanders (2008).

5. Both references are to Chang, Potter, and Sanders (2007b).

6. Fortna and Howard (2008).

7. U.N. became involved: Johnstone, Tortolani, and Gowan (2006); early 1990s: Benner, Binder, and Rottman (2007); expanded missions: Johnstone, Tortolani, and Gowan (2006); quote: Benner, Binder, and Rottman (2007, p. 9).

8. Collier, Hoeffler, and Soderbom (2008).

9. Fortna (2004); Doyle and Sambanis (2000); Gilligan and Sergenti (2008).

10. Doyle and Sambanis (2000); Gilligan and Sergenti (2008); quote to follow: Gilligan and Sergenti (2006, pp. 6-7).

11. Gilligan and Sergenti (2008); Ho, Imai, King, and Stuart (2007); Elbadawi and Sambanis (2000).

12. Balch-Lindsay and Enterline (2000, p. 615).

13. Gershenson and Grossman (2000); Garfinkel and Skaperdas (2000).

14. Chang, Potter, and Sanders (2007a).

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Conflict persistence and the role of third-party interventions

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The persistence of war is a central issue in conflict studies. In addition to the sizeable direct human toll of warfare, persistent conflict creates a host of social and economic problems in the region of conflict. Paul Collier finds that GDP declines in a country by 2.2 percent, on average, during periods of civil war. This is due to loss of production and of capital stock in warfare. Therefore, each day of war puts the conflict at a lower economic starting point in the aftermath of conflict.[1]

As peace-minded third parties, such as the United Nations, become more active in protecting regions against the ravages of ongoing conflict, it is important, from an allocative standpoint, that a firm understanding is developed as to which emerging conflict situations are likely to persist if left alone. A number of conflict models have made significant strides in addressing this issue. Many such models follow a contest approach by assuming that the probability of victory for each party to a conflict is governed by a Tullock contest success function. Such a function treats the probability of victory for a party as equal to a ratio of own party arms spending to aggregate arms spending for a conflict, where the effectiveness of a unit of arms spending can depend upon a party's status (defender or challenger) and strategic or military effectiveness. The contest approach is quite useful and has been employed in many areas of economics (e.g., rent-seeking, sibling rivalry, sports, and conflict). It provides a reasonable first- and second-order qualitative assumption as to the interconnected objectives of two or more parties to a contest (conflict) for economic rents. Hirshleifer was among the first to introduce the contest approach to the study of conflict.[2]

One downside of this approach to conflict modeling is that it limits the additional complexity that a model can assume. For example, the nonlinearity of a contest success function makes it difficult or impossible to solve in an iterated manner. Thus, no contest model of conflict appears to tell the whole story of dynamic conflict. Rather, it is more likely that each such model provides a reasonable description of an aspect of war. In this article, we focus upon theoretical conflict studies that use a contest approach and that address one of two particular aspects of national or international conflict, namely, conflict persistence and a third-party's potential effect upon conflict persistence and outcome.

Civil conflict and the persistence of war

Gershenson and Grossman develop a rational-choice model to identify the determinants of intrastate conflict within a two-party model of conflict.[3] In explaining the onset and persistence of intrastate conflict, their model focuses on the values, intrinsic and economic, that rival parties place on political dominance. This model pays particular attention to what might happen in the case that a rebellion occurs and the rebel group wins state control. At such a juncture, the party from which control was wrested can choose either to fight for repossession or to acquiesce to the opposing party's rule. Within the Gershenson-Grossman model, a fight for repossession implies that the conflict will be never-ending (i.e., neither side will effectively deter the opposing party) in the absence of outside intervention. The authors show conditions under which never-ending conflict occurs. Their main conclusion is that conflict will persist when opposing parties are sufficiently similar in terms of the value they attach to political dominance. That is to say, a party will not achieve optimal deterrence of its opponent unless it is able to "borrow upon" superior future rents from political dominance to allocate a (sufficiently) stronger fighting force.

From the policymaker's standpoint, Gershenson and Grossman suggest that a group's human capital level plays a large role in determining its value for political dominance. If one group has a higher general level of human capital, then its alternatives to political rule (i.e., emigration from the state) are more lucrative. Of course, human capital formation itself certainly depends on which group was in power over past periods. The simple (i.e., non-dynamic) model put forward by Gershenson and Grossman cannot capture such a dynamic process.[4] However, one can think of the level of human capital a party would have in the absence of future political control as influencing the party's present value of political control. A group with greater human capital levels in such a scenario will possess a lower value for political dominance, ceteris paribus. Further, a group with a relatively strong preference for a particular religious or social agenda will value political dominance more highly, ceteris paribus. Lastly, if one of the two conflicting groups faces economic sanctions, its appropriable economic rents from political power will be relatively small. Therefore, if two conflicting parties are sufficiently similar in terms of human capital and socio-religious fervor, Gershenson and Grossman predict a longstanding war that carries with it significant social costs. But the third factor considered indicates that targeted, third-party sanctions can be used to potentially end a stalemated conflict. Although their model is quite simplified in that it assumes two homogeneous players, Gershenson and Grossman shed light upon why many parts of Africa have been historically "cursed" by resource abundance. Resources, such as diamonds, provide

strong incentives for two parties to engage in a bloody contest for political dominance. However, these incentives are virtually undifferentiated across party, leading to longstanding civil strife in many such areas.

Persistent civil strife in Sierra Leone, Liberia, and Angola in recent decades has matched the Gershenson and Grossman profile of never-ending conflict quite well. In the Sierra Leonean civil war (1991-2002), for example, the opposing parties were similar in many respects. Although the Revolution United Front (RUF) began with a group of university students, its main recruits—diamond workers and other subsistence laborers—were almost indistinguishable from state-led forces in terms of human capital levels. Further, opposing parties to the Sierra Leonean conflict were similarly void of strong religious or social motivations but rather fought to appropriate economic rents from control of the diamond mines. As these potential rents were nearly identical across party (i.e., each party possessed a similar technology for extracting and distributing the uncut diamonds), neither side was sufficiently differentiated to deter its opponent.

Building upon the work of Gershenson and Grossman, a study by Chang, Potter, and Sanders develops a model of territorial dispute to further study the issue of conflict persistence. As in Gershenson and Grossman, the authors model conflict as a sequential move arming game, in which a potential challenger responds to the arming levels of a defending party. Although still two-party in nature, the model recognizes that parties to a civil war can differ in terms of their military or strategic effectiveness (i.e., expected return per unit of a military good) and unit cost of arming. As stated in Chang, Potter, and Sanders: "Identity parameters allow for the possibility that military effectiveness differs across parties. For example, in 1940, invading German forces used superior blitzkrieg tactics to overwhelm Allied forces in France despite the fact that military resources between the two sides were roughly equal." Further, conflicting parties might possess different arming costs if one party has a more developed industrial base or better terms of arms trade. The authors find that persistent conflict occurs when two parties are sufficiently close in terms of military effectiveness, unit cost of arming, and value of political dominance. Without an advantage in one of these areas, it is not economically profitable for a party to deter its adversary. This finding is noteworthy from a policy standpoint in the sense that the cost of arming and military effectiveness can be endogenized by a third-party whose goal is to break a stalemated conflict. The authors also consider the role of state infrastructure depreciation in the persistence of conflict. Said depreciation can break a stalemated conflict by driving out parties seeking material value, rather than intrinsic value, from the conflict state.[5]

Although the two highlighted papers have much to say about conflict persistence, there are drawbacks to the type of modeling adopted. As stated, the piece by Gershenson and Grossman assumes that parties are quite symmetric in terms of fighting effectiveness, and both models assume that there are only two parties to conflict. In addition, both models assume myopic group decisionmaking. That is to say, a party to conflict in either of the studies does not take a long-term view toward state control. Rather, such a party worries only about securing state control for next-period rule. This simplification is made due to the complexity of the contest approach within a dynamic model (i.e., one in which agents maximize expected utility over a lifetime of future periods). Also, these models do not address the sustainability of a conflict equilibrium. This is a practical consideration given intermittently persistent conflicts in countries such as Sierra Leone, Liberia, and Angola during recent decades.

The political economy of third-party intervention

Many papers in the literature have addressed the role and effect of third-party intervention in conflict. A common issue of concern is why third parties intervene. Indeed, we cannot determine whether an intervention is successful without understanding its underlying motivation. While some third-party interventions have the goal of conflict management (i.e., United Nations peacekeeping missions), such a motivation does not, by any means, drive all third-party action. Many studies contend that outside nations choose to intervene when their own national interests are at stake. Regan considers this view as the "paradigm of realism" and identifies it as the dominant philosophy in international politics. In a study on the historical nature of third-party intervention, Morgenthau states: "All nations will continue to be guided in their decisions to intervene ... by what they regard as their respective national interests."[6]

It is important to note that a nation's interests may not always be consistent with international peace. Unsurprisingly, most models that adopt the realist perspective find that third-party influence on the persistence and outcome of conflict is ambiguous.

Gershenson adopts a largely realist view of conflict in a study of economic sanctions amidst conflict, where economic sanctions are defined as trade restrictions imposed upon a group with the design of weakening that group's economic output. Gershenson states that: "In general, sanctions can be imposed against diverse countries, and the objectives of the party imposing sanctions vary considerably from one episode to another." He further assumes that the objectives of the party imposing sanctions are based upon that party's underlying interest in what it views as a desired outcome. Gershenson uses a contest approach to examine the effectiveness of sanctions that target one party to civil conflict. Specifically, Gershenson takes a case in which an intervening party sanctions a conflict state each time a particular party is in power. If sufficient in magnitude, he finds that targeted economic sanctions can tip the balance of a conflict in a way that is desired by the intervener. However, Gershenson also finds a perverse outcome of sufficiently "weak" targeted sanctioning, in which the intended beneficiary party does not obtain (or retain) state control, and sanctions act to hurt this party. As he admits in the paper, his model does not provide

a complete theory of sanctions. As the third party is exogenous (i.e., not prescribed a specific objective function pertaining to the conflict), the model is more useful in explaining how civil sanctioning works as opposed to the specific geopolitical motivations for its undertaking.[7]

In a second paper, Chang, Potter, and Sanders also consider a contest model of conflict intervention. The authors observe that third parties, operating as realist scholars predict, will manipulate a conflict in any way that meets their objectives. Specifically, the authors develop equilibria that are consistent with particular third-party objectives. If a third party values the status quo sufficiently, it can either deter rebellion or make rebellion less likely to succeed. If a third party values a change of the status quo sufficiently, it can motivate rebellion. Although intuitive, this theoretical result shows that an intervener following its national interest can have several disparate effects upon the equilibrium outcome of a conflict. The paper therefore calls into question many empirical studies, such as that by Regan and Stam, assuming all interveners to be peace-minded conflict managers. Indeed, there are examples of interveners admitting that their actions follow realist motivations. During the cold war, for example, internal documents show that the Soviet Union intervened militarily on behalf of Afghanistan's ruling Marxist government not to promote peace in the region but to protect its own national security against anti-Soviet forces.[8]

Some noteworthy contest models of conflict intervention follow the idealist paradigm. This paradigm assumes that an intervener wishes to promote peace in a conflict state. Papers following the idealist paradigm generally focus upon how such a third party can most efficiently manage a conflict for the purpose of peace promotion. The idealist paradigm is not without basis. The United Nations has conducted 63 peacekeeping missions since 1945. Such missions, which have occurred both in the shadow of conflict and amidst fighting, feature the explicit goal of conflict prevention and management. Siqueira explores the efficacy of third-party interventions that seek to prevent or end a two-party, civil conflict. Within his model, interveners either seek to influence the costs or benefits of conflict, where said costs and benefits are specified according to a standard contest model. Among other modes of intervention, he analyzes outside efforts to raise the marginal cost of arming. Siqueira warns that there are significant indirect effects associated with conflict intervention, as parties to a conflict react to one another strategically. A conflict manager must recognize such effects in order to accurately estimate the total influence of an intervention policy. As in the case of many other contest models of intervention, Siqueira's model fails to address under what conditions a third-party would choose to intervene in the interest of conflict management.[9]

In a work by Amegashie and Kutsaoti, the intervening party acts as a conflict manager of the social planning variety. Rather than assume that peace is ideal, the third party influences conflict to maximize a weighted sum of utilities for the parties to conflict and the noncombatant population. The authors find that outside parties can achieve such a goal through biased (i.e., one-sided) or unbiased intervention efforts.

In viewing conflict intervention as almost an extension of market regulation, Amegashie and Kutsoati are able to achieve new insights into effective conflict management. Namely, they focus not only on the conditions for a peaceful outcome to conflict but also upon the valuations associated with such an outcome. Many studies of conflict management, e.g., Regan and Stam, address the issue of creating a quick peace without assessing the values, albeit the stability, attached to a particular peaceful equilibrium. As African states such as Sierra Leone, Angola, and Liberia have encountered intermittently persistent conflict in recent decades, additional work is necessary to understand the stability of a peaceful equilibrium.[10]

Concluding remarks

This article discusses the contributions and limitations of the contest approach to theoretical conflict research. Specific topics of discussion herein include the persistence of war and the motivation and effect of third-party intervention in altering the outcome and persistence of conflict. The persistence of intrastate conflict and the political economy of third-party interventions are central issues in international politics. Gershenson and Grossman, and Chang, Potter, and Sanders find that conflict persists when neither party to the fighting is sufficiently differentiated to "borrow upon" future ruling rents and optimally deter its opponent.[11] Third-party intervention aimed at breaking a persistent conflict should focus upon creating differences across parties in factors such as the value of political dominance, effectiveness of military arms, and cost of military arming. There are limitations to these works and to contest models of conflict in general. These models do not address the sustainability of a conflict equilibrium. This is a practical consideration given intermittently persistent conflicts in countries such as Sierra Leone, Liberia, and Angola during recent decades. Also, the studies feature a two-party model of conflict, in which parties to conflict are short-sighted (i.e., do not see beyond the next period when making present conflict decisions). This short-sightedness is often necessary within contest models due to the analytical complexity of contest success functions.

The article also discusses the effect of outside intervention upon conflict persistence and outcome. Of particular interest is a work by Amegashie and Kutsoati, who not only identify a peaceful equilibrium but discuss the degree to which a particular peaceful equilibrium is valued. Considering the value of a peaceful equilibrium may be a first step toward understanding the stability of peace. There are several issues related to civil conflict and third-party intervention that remain to be examined in future research. For example, destruction of resources in conflict is an important factor in the consideration of conflict persistence. A model that acts to endogenously account for the destructiveness of conflict would have descriptive and predictive value. Further theoretical research might explain how a peace-valuing, unbiased third party affects the outcome of intrastate conflict.

Notes

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1. Collier (1999, p. 175).

2. Tullock (1980); Hirshleifer (1989). See Garfinkel and Skaperdas (2007) for a systematic review of studies on the economics of conflict.

3. Gershenson and Grossman (2000).

4. Thank you to an anonymous referee for suggesting the endogenous nature of this relationship.

5. Chang, Potter, and Sanders (2007a); quote from p. 186.

6. Many studies: e.g., Morgenthau (1967); Bull (1984); Feste (1992). Regan (1998). Quote from Morgenthau (1967, p. 430).

7. Gershenson (2002); quote from p. 185.

8. Chang, Potter, and Sanders (2007b); Regan and Stam (2000).

9. Siqueira (2003).

10. Amegashie and Kutsaoti (2007).

11. Gershenson and Grossman (200); Chang, Potter, and Sanders (2007a).

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Preferences for privacy and security: an experimental investigation

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In the United States, the events of 11 September 2001 led to increased efforts to reduce the risk of another terrorist attack. One way to reduce such a risk is to increase surveillance and other security measures. Increasing surveillance, however, reduces privacy. In determining optimal policy, policymakers must weigh the value of a reduced risk of a catastrophic event against the value of privacy. While the debate is not new, interest in the tradeoffs between security measures and individual privacy has grown.[1] We conducted experiments in which participants chose between these two commodities. We use participants' choices, as well as demographic and other information, to analyze the relative importance of privacy and security across a heterogeneous group of university students.

We assume that there exists a tradeoff between privacy and security: giving up some degree of privacy improves security.[2, 3] While the decision as to the appropriate balance is collective, our focus is on the privacy loss to the individual. We do not account for the governing authority's costs and benefits due to increased security.[4]

We asked undergraduate and graduate students to choose among various levels of surveillance in return for reduced risk of loss. Our participants are heterogeneous both in demographics and response, ranging from 19 to 41 years of age, with an average age of almost 22. About 40 percent identified themselves as Caucasian, 32 percent as Hispanic, 6 percent as Native American, 10 percent as Asian, and 2 percent as African American. Like most convenience samples, this pool is younger than the general population and differs from both the typical sample of largely Caucasian, 18-22 year-old college students and the U.S. population generally.[5] Most choose to give up some privacy in exchange for reduced risk but are unwilling to submit to the most invasive measures in return for a very low risk of loss. A nonnegligible percentage of the participants' decisions reflect preferences that are either high privacy (HP) or high security (HS). Participants whose decisions take relatively extreme values are distinguishable from the participants with more moderate preferences both in the ways they respond to feedback and in some of their demographic characteristics.

We begin with a theoretical model explaining the choice of optimal levels of surveillance and privacy and then describe the experimental design. Then, we present regression models and results, and a summary concludes the article.

Theoretical model

We model individuals as voting on allowable surveillance levels. Higher surveillance levels reduce the risk of a catastrophic event, like a terrorist attack; however, to reduce that risk, individuals bear a loss of utility due to invasion of personal privacy.[6] In our model, individuals have preferences over net wealth. Net wealth is determined by the original wealth endowment, utility gained from the provided level of security, disutility from the corresponding privacy invasions, and the probabilistic occurrence of a catastrophic event. Individuals vote for optimal levels of surveillance and hence the corresponding optimal levels of privacy loss. The prevailing surveillance level is determined by a specified voting rule, such as majority vote. We assume that individuals do not know the choices of other members of society. Consequently, each person selects the surveillance level that maximizes his or her expected utility over net wealth, conditional on what they expect others to do. Thus, there are two types of uncertainty: first, there is uncertainty regarding the votes of other members of society; second, there is uncertainty regarding the occurrence of a catastrophic event.

Each individual's optimal surveillance level choice equates the marginal cost of that privacy invasion level to the marginal benefit of increased security, plus a term incorporating income elasticity of utility as well as the inherent riskiness of providing security. Security, even if provided at high levels, cannot fully protect against a catastrophic event; as a result, individuals choose higher levels of surveillance and submit to more privacy invasions when there is a probabilistic resolution of a disastrous event.[7]

Individual differences in preferences over money and security and in sensitivity to privacy invasions yield different optimal choices. High privacy decisions are consistent with high marginal costs of additional privacy invasions, whereas high security decisions are consistent with greater marginal utility from higher levels of security relative to the cost of privacy invasions. Differences in the individual cost and benefit functions explain why high privacy participants optimally vote for fewer privacy invasions and high security participants allow more privacy invasions.

If preferences change over time, optimal decisions will likewise change. For example, a person may not have well-formed preferences over risks not personally experienced. If the risky event were to occur, that person may adjust his or her preferences between security and privacy. In our experiment, we observe some participants choosing different privacy loss levels after observing a negative outcome,

We conducted experiments in which participants chose between privacy and security. A nonnegligible percentage of the participants' decisions reflect preferences that are either high privacy (HP) or high security (HS). Participants whose decisions take relatively extreme values are distinguishable from the participants with more moderate preferences both in the ways they respond to feedback and in some of their demographic characteristics.

suggesting that people do adjust their decisions based on experience.

Experimental design

Our participants were asked to imagine themselves in a hypothetical scenario. We presented participants with choices between sacrificing some degree of privacy in return for increased security. Because we could not subject participants to realistic privacy invasions, nor could we subject our participants to acts of crime or terror, we used financial loss and gain to give saliency to their choices. Thus, a violation of privacy cost the participant a specified amount of experimental earnings, while realization of the threat resulted in a complete loss of all earnings. In this sense, the investigation resembled an insurance market. Participants could sacrifice a specified amount of earnings in exchange for a reduced probability of complete loss.

Other features of the experiment distinguish it from an insurance market. Ex ante payment did not secure compensation in the event of loss; it only reduced the chance of loss. In addition, decisions about the appropriate tradeoff between security and privacy are necessarily collective. A policy that subjects citizens to various security-enhancing methods must apply to all. Therefore in this investigation, groups of participants voted on the degree to which they were willing to accept privacy invasions in return for more security.

Because we characterized privacy invasions as a cost, a necessary first step was to determine dollar values of various privacy invasions so that those values, in an ordinal sense, were aligned with participants' perceptions of those invasions. Thus, our design has two parts. In the first stage, we asked 46 undergraduate students recruited from three lower-division undergraduate economics courses to rate several privacy invasions by the degree to which that invasion was perceived as intrusive. That first stage of our design informed the second stage. In the second stage, a different group of students, randomly and anonymously assigned to groups of five, voted on the level of surveillance their group would tolerate in exchange for different levels of security.

Stage one

We investigated students' reactions to a number of possible steps that a governing authority might take by asking students to complete a Likert-scale survey. Students were presented with a list of thirteen different surveillance practices and a brief explanation of each practice. They then rated those practices on a scale from one to five, where five indicated a practice perceived as most intrusive.[8]

We used Stage One results to rank each security measure by the extent to which most students would be offended and to identify those practices for which the perception of invasiveness was most uniform. In the second stage, we included those invasions for which student responses were most consistent and allowed the greatest

Table 1: Costs and benefits of each choice

Step	Cumulative cost (in tokens)	Probability of complete loss	Expected value
No measures taken	0	0.80	6.00
Security camera	2	0.50	14.00
Drug test	5	0.35	16.25
Body search	9	0.22	16.38
Email, internet monitoring	14	0.12	14.08
Property search	20	0.05	9.50
Wiretap	27	0.02	2.94

degree of spread between the least invasive measure and the most. Stage Two participants completed the same instrument after completing the experiment. Their responses are similar to the responses of the Stage One participants as shown in the last column of Table S1 (online supplemental material).

From least intrusive to most, the six practices that we selected were security camera monitoring, drug test, body search, email or internet monitoring, property search, and wiretapping. Both the initial Stage One participants and the Stage Two participants were drawn from a university student body, a population whose experiences with these measures may be quite different from the experiences of the adult population generally.

Stage two

The second stage of our investigation addresses our primary interest. We recruited 85 undergraduate and graduate students, none of whom participated in the first stage. After they completed the experiment, Stage Two participants provided demographic information, completed the Stage One instrument, and responded to the following question: "On a scale of one (1) to five (5), which number best describes your attitude?" One (1) is equivalent to: "Reduced privacy doesn't bother me: I am not doing anything wrong so I don't have anything to hide." Five (5) is equivalent to: "Reduced privacy bothers me. It imposes on my rights and allows governmental agencies too much access to my personal information." Responses were fairly symmetric: 40 percent of our sample chose the middle ranking, a 3, in response to this question, 13 percent chose 1, the lowest ranking, and 12 percent chose 5, the highest. Sixteen percent leaned toward not being bothered, choosing 2, and 19 percent leaned toward being bothered, choosing 4.[9]

Second stage participants were asked to imagine themselves in a hypothetical

Table 2: Absolute and relative frequencies of privacy choices

Privacy choice (up through and including)	R1 Freq. n=85	R2 Freq. n=85	R3 Freq. n=85	R4 Freq. n=40	All Freq. n=295
0: None	1 (1.2)	4 (4.7)	5 (5.9)	3 (7.5)	13 (4.4)
1: Security cam.	13 (15.3)	9 (10.6)	11 (12.9)	5 (12.5)	38 (12.9)
2: Drug test	20 (23.6)	20 (23.6)	15 (17.6)	5 (12.5)	60 (20.3)
3: Body search	36 (42.4)	36 (42.4)	35 (41.2)	15 (37.5)	122 (41.4)
4: E-mail monit.	7 (8.2)	10 (11.8)	9 (11.6)	7 (17.5)	33 (11.2)
5: Property search	4 (4.7)	3 (3.5)	4 (4.7)	5 (12.5)	16 (5.4)
6: Wiretapping	4 (4.7)	3 (3.5)	6 (7.1)	0 (0)	13 (4.4)
Average (s.d.)	**2.7 (1.3)**	**2.7 (1.3)**	**2.8 (1.5)**	**2.8 (1.4)**	**2.8 (1.3)**

Group divisions (see text for explanation):
‣ 0 and 1   => HP (high privacy)
‣ 0 through 4   => Base
‣ 0 through 6   => HS (high security)

situation that would lead to a complete loss of all earnings with an 80 percent probability if no security-enhancing steps were taken. That probability would be reduced with increasingly invasive security measures. Participants were asked to vote on the proposed security measures that their group would endure. Security measures were constrained to be cumulative in the order presented, so that a participant who voted to accept one security measure was accepting all lower-cost measures as well. Participants were given an endowment of 30 tokens at the beginning of each round. Each token was worth 40 cents, so that the participants' starting endowment was USD12. Table 1 summarizes the cumulative cost of taking each step and the reduction in the probability of loss associated with each level of security.[10] While it can be clearly seen from Table 1 that accepting security measures through the level of a body search maximizes expected return, this information was not explicitly provided to participants.

Once all members of a group made their decisions, the experimenters determined the highest level of security accepted by at least three members of the group. A draw from a bingo cage, done in full view of all participants, determined whether or not the loss occurred. Rounds were repeated with no rollover of earnings. Group membership changed with each round and the number of rounds was not pre-announced. In five separate administrations of the experiment, three groups completed three rounds and two groups completed four rounds.

Earnings

Only one round of the hypothetical scenario was chosen for payment. In addition to earnings from the decisions and outcomes, participants were given a USD5 participation fee. Earnings ranged from USD5 to USD15 and averaged USD12.60.

Model and results

The frequency of participants' choices among the seven security/privacy tradeoff levels is presented in Table 2. Body Search (which includes the lower-ranked surveillance methods of Security Camera and Drug Test) is the mode across all rounds. Assigning a numerical value from zero (none) to six (wiretapping) for the seven choices, respectively, the mean response is 2.8 across all rounds (between Drug Test and Body Search), with a standard deviation of 1.3.

We assume that each participant chooses the level of surveillance which he or she is willing to tolerate in order to approximately maximize utility according to

$$(1) \qquad U \text{ (alternative } j) = \beta_j \, \mathbf{x}_j + \epsilon_j \qquad (j = 0, 1, ..., m)$$

where β_j is a vector of coefficients and $\mathbf{x}_j$ is a vector of characteristics that capture participants' perceptions of the benefits and costs of increased surveillance. The observed choice $= j$ if U (alternative j) $> U$ (alternative k) $\forall j \neq k$. The probability a participant makes choice j then is

$$(2) \qquad \text{Prob [choice } j] = \frac{\exp(\beta_j ' \mathbf{x}_i)}{\sum_{k=1}^{m} \exp(\beta_k ' \mathbf{x}_i)}.$$

Incorporating survey and experimental data into equation (2) allows us to consider the following questions:

1. Are observable characteristics correlated with participants' privacy/security preferences?
2. What distinguishes participants who prefer high security from those who prefer high privacy?
3. How do participants' choices respond to a loss event, either to the participant or to others in the experiment?
4. Do participants who had made high security decisions in the first round respond to loss events in the same way as those whose early decisions had reflected high privacy preferences?

The size of the data set prevents modeling the probability of each of the seven

Table 3A: Round one results

Model 1 Variable	High privacy Coeff.	s.e.	p-value	High security Coeff.	s.e.	p-value	Mean value
Experience and attitude							
Attitude	0.91[a]	0.40	0.02	-0.28	0.44	0.53	3.00
Average rank	0.94[c]	0.61	0.12	-1.96[a]	0.84	0.02	2.88
Percentage yes	5.61[a]	2.89	0.05	5.11	3.73	0.17	0.40
Financial check	-0.83	1.10	0.44	-0.48	1.40	0.73	0.27
Sobriety test	-1.65[b]	0.97	0.09	-1.23	1.23	0.31	0.31
Demographics							
Age	—	—	—	—	—	—	21.46
Female	—	—	—	—	—	—	0.60
International	—	—	—	—	—	—	0.05
Non-Anglo	—	—	—	—	—	—	0.61
Junior/senior	—	—	—	—	—	—	0.25
Graduate	—	—	—	—	—	—	0.16
Constant	-9.26[a]	2.47	0.00	1.69	2.34	0.47	

Notes: LL = -44.8; restricted LL = -63.0; chi-sq. = 36.3; pseudo-R^2 = 0.29

[a] = stat. sign. at 5%; [b] = at 10%; [c] = at 15%.

		Actual		
Predicted	Base	HP	HS	Total
Base	60	3	0	63
HP	8	6	0	14
HS	5	0	3	8
Total	73	9	3	85

individual security choice levels, so we aggregate responses into three groups: High Privacy (HP), Base, and High Security (HS). A Base choice is the mean plus or minus one standard deviation, rounded to the nearest whole number. Based on this criterion, we categorize decisions to accept None or surveillance by Security Camera only as reflecting HP preferences. Approximately 17 percent of all decisions made in the experiment meet this criterion. The Base group includes choices to accept surveillance

practices up to and including Drug Test, the Body Search or Email/internet Monitoring, which accounts for more than 75 percent of the responses. The remaining responses reflect HS preferences and include the most costly levels of security in terms of privacy loss. These three designations are the dependent variables in our analysis.

Explanatory variables fall into three categories: (1) experience and attitudinal; (2) demographic, and (3) experimental (which reflect choices and outcomes of previous rounds). Experience and attitudinal variables capture pre-experiment attitudes and experiences. PERCENT YES is the percentage of security events that a participant had experienced. AVERAGE RANK is the participant's average ranking of invasiveness of the thirteen survey items. ATTITUDE is the participant's ranking of the extent to which reduced privacy bothered them (where a 5 indicated that reduced privacy "bothers me"). Thus higher scores on AVERAGE RANK and on ATTITUDE indicate a relative preference for privacy. Finally, we considered experience with each of the 13 privacy issue variables, but include only those two variables which were statistically significantly (at 15 percent) associated with either HS or HP decisions in our initial model.[11]

Demographic variables include AGE, education (binary variables for JR/SR and GRAD), ethnicity (NON-ANGLO), gender (FEMALE), and international student status (INTERNATIONAL). These capture cultural and other systematic differences (if any) that might influence participants' tastes for privacy and security.

Experimental variables allow us to test a participant's response to prior round outcomes. A participant's choice in round one provides a baseline, pre-feedback prior about security and privacy (R1 CHOICE). We investigate whether a good or bad outcome in one round influences a participant's choice in the next round by including the following variables: the participant's outcome in the previous round (OUTCOME LAST), the percentage of groups that experienced a loss in the previous round (PERCENT INCIDENT LAG), the sum over all previous rounds of losses that happened to the participant (SUM INCIDENT), and the participant's group security level from the previous round (GROUP LAST).[12]

Round one models

To distinguish the influence of pre-experiment experience, attitudes, and demographics from experience in the experiment, we estimate two separate sets of multinomial logit models. Models 1 and 2 employ only round one data (n=85). This provides a baseline to which we can compare the impact of experiment outcomes. In Model 1, we include only experience and attitudinal variables. Model 2 adds the demographic variables. The results are presented in Tables 3A and 3B (statistically significant variables are indicated with a superscript), with the actual versus predicted values provided in the last row of the tables.[13]

Table 3B: Round one results

Model 2 Variable	High privacy Coeff.	s.e.	p-value	High security Coeff.	s.e.	p-value
Experience and attitude						
Attitude	0.95[a]	0.56	0.00	-1.70[a]	0.88	0.05
Average rank	0.90	0.79	0.25	-2.33[b]	1.33	0.08
Percentage yes	7.13[a]	3.34	0.03	11.22[b]	6.30	0.07
Financial check	-2.11	1.51	0.16	-6.12[c]	3.84	0.11
Sobriety test	-1.28	1.01	0.20	-3.62[c]	2.43	0.14
Demographics						
Age	0.20[c]	0.13	0.11	0.22	0.26	0.39
Female	0.43	0.89	0.63	-3.72[a]	1.89	0.05
International	-25.30	>100	1.00	6.39[b]	3.64	0.07
Non-Anglo	-1.24[c]	0.86	0.15	-1.68	1.21	0.17
Junior/senior	-0.32	0.98	0.75	-1.94	1.66	0.24
Graduate	-1.24	1.79	0.49	2.28	3.06	0.46
Constant	-13.56[a]	4.50	0.00	2.68	6.10	0.66

Notes: LL = -33.2; restricted LL = -63.0; chi-sq. = 59.5; pseudo-R^2 = 0.47
[a] = stat. sign. at 5%; [b] = at 10%; [c] = at 15%.

		Actual		
Predicted	Base	HP	HS	Total
Base	62	1	0	63
HP	8	6	0	14
HS	2	0	6	8
Total	72	7	6	85

Participants who indicated on their surveys that reduced privacy bothers them generally (ATTITUDE), as well as specifically in the context of the thirteen surveillance practices (AVERAGE RANK), and who had relatively more experiences with those practices (PERCENT YES), were more likely to make an HP choice than the Base choice. Participants who had experienced a sobriety test were less likely to make an HP choice. Participants whose decisions reflected an HP preference assigned higher invasiveness scores to the thirteen surveillance practices and those whose decisions reflected an HS preference assigned lower invasiveness scores to the items.

Adding demographic variables in Model 2 only moderately changed the results for the attitude and experience variables. Frequency of experience with the named surveillance practices continues to explain HP decisions, but, somewhat puzzling, is also positively associated with HS decisions. However, specific experience with financial record disclosure and sobriety tests was negatively associated with a HS decision. It appears that for some, having experienced a privacy violation made them more tolerant of violations in the future (HS) while for others the experience made them less tolerant (HP), indicating different people will respond to the same stimulus in different ways.

Of the demographic variables, older participants were more likely to choose HP and non-Anglo participants were less likely to choose HP. Women were less likely to choose HS while international students were more likely to choose HS, but this result must be interpreted with caution given the relatively small number of international students in this data set.

Table 4 presents the marginal effects, estimated at the sample means of the RHS variables. The marginal effects provide the changes in the probability that an individual will choose HP (or HS) over Base, for a one-unit change in the variable.

In Round 1, participants tended to make choices that were generally consistent with their pre-experiment attitude toward privacy. Experience with security measures cuts both ways, perhaps because of differences in how those measures were executed.

Feedback models

We now turn to the models that incorporate immediate feedback from the

Table 4: Round one model marginal effects (evaluated at the mean)

Variable	Model 1 HP	HS	Model 2 HP	HS
Experience and attitude				
Attitude	0.07	—	0.02	-0.01
Average rank	0.08	-0.01	—	-0.01
Percentage yes	0.43	—	0.15	0.04
Financial check	—	—	—	-0.02
Sobriety test	-0.13	—	—	-0.01
Demographics				
Age	—	—	0.01	—
Female	—	—	—	-0.01
Non-Anglo	—	—	-0.03	—
International	—	—	—	0.02

Table 5: Immediate feedback model marginal effects

Variable	Model 3 HP	Model 3 HS	Model 4 HP	Model 4 HS	Model 5 HP	Model 5 HS
Experience and attitude						
Attitude	—	-0.01	—	-0.01	-0.04	—
Average rank	—	-0.07	—	-0.04	—	-0.01
Percentage yes	0.43	—	-0.44	—	-0.42	—
Financial check	—	—	—	-0.07	—	-0.01
Demographics						
Age	—	—	0.02	—	0.02	—
Female	—	—	—	-0.02	—	-0.01
Non-Anglo	—	—	-0.09	-0.01	-0.04	—
Junior/senior	—	—	-0.32	—	-0.28	—
Graduate	—	—	—	0.07	—	0.01
Experimental						
R1 choice	—	—	—	—	-0.66	0.001
Outcome last	—	—	—	—	—	0.002
Sum incident	—	—	—	—	0.16	—
Group last	—	—	—	—	—	0.001
Constant and time						
Constant	-0.74	0.08	-0.43	0.15	—	—
Round 4	—	—	—	0.02	—	—

experiments. We lose all first round observations when we lag variables, leaving us with 210 observations. Model 3 replicates Model 1, but with data from later rounds of the experiment and binary round variables. Similarly, Model 4 replicates Model 2 with this data and binary round variables. While the magnitudes of the coefficients have changed, we observe many of the same patterns. Older participants continue to choose HP, and women continue to avoid choosing HS. In the new data, though, pre-experiment attitude no longer predicts HP choices, and experience with the thirteen security measures is negatively associated with HP choices. Model 5 incorporates the experimental variables (feedback) and suggests that pre-experiment attitudes and experience may be supplanted by the outcomes of earlier experimental rounds. Results are provided in Table A1, appended to this article.[14]

The number of statistically significant experience and attitude variables related to HS declines when immediate feedback is included: attitude and experience are partially supplanted by immediate experience. Relative to Model 2, fewer demographic variables explain HS choices, but having experienced a loss in a prior round and having higher security imposed in a prior round are associated with an increased likelihood of a HS choice. Thus, current events appear to influence privacy/security tradeoff preferences. The tendency to make HP choices appears less sensitive to inclusion of feedback variables. Only the cumulative count of losses in prior rounds is statistically significantly associated with the likelihood of choosing HP, and its influence is to increase HP choices.

First round choices strongly predict choices in subsequent rounds. The likelihood that a participant will display HP preferences increases as the overall faring of the experimental group in the last periods worsens (SUM INCIDENT), while the likelihood of displaying HS preferences is positively associated with a loss that is personally experienced by the participant, as well as with the level of security chosen by his or her group in the previous period (OUTCOME LAG and GROUP LAST).

The marginal effects for statistically significant variables from Models 3, 4, and 5 are presented in Table 5. The marginal effects for HP are larger than those in Models 1 and 2, while the magnitude of marginal effects for HS are relatively small in magnitude. Current events affect participants' choices, and there is a distinct difference in how those events lead to HP or HS choices. Pre-experiment experience and a pro-privacy attitude, when immediate experimental feedback is included in the model, reduce the probability of making an HP choice in the later rounds. Regardless of the specification, older participants tend toward HP preferences. The decision to make an HP choice is impacted by the community-centric variable—what happened to the entire experimental group last period—rather than by the individual-centric variables. In this case, a one-percent increase in loss in the last period increased the probability of a HP choice by 16 percent. This counter-intuitive result may reflect the tendency for participants to apply a heuristic assessment of risk: if a terrorist attack happens on a given day, another incident may seem highly unlikely on the following day.

HS participants appear much different from their HP counterparts. As in every other specification, being female reduces the probability of HS. This may at first seem at odds with other studies that find women are more risk averse than men, but in this context, there is more than one risk domain that must be considered. Other researchers have found that women's risk attitudes differ depending on the domain.[15] There is the security (and hence financial) risk, but there is also a personal risk associated with being subjected to invasive actions.

In contrast to the case for HP choices, the immediate feedback variables that impact the probability of HS are the individual-centric variables. What happened to me? What did my group do? An adverse own-group event increases the probability of HS.

Switching behavior after a loss

There were 50 instances in which a subject experienced a loss in a round prior to the last round of play.[16] Of those who experienced a loss, 21 switched their choice from the previous round. Among these switchers, the average privacy invasion chosen in the round leading to the loss was 2.81, whereas the average privacy invasion selected after the loss was 3.38. Thus, these individuals increased their tolerance for privacy invasions after suffering a loss.[17]

Switchers differed attitudinally and demographically. Switchers' response to the overall attitude question (where 5 indicated that privacy violations bothered the person) averaged 2.95, while non-switchers entered the experiment with more strongly-held preferences for privacy; their average ATTITUDE rank was 3.69.[18] Switchers are less sensitive to reduced privacy and so are more willing to submit to increasing privacy violations in exchange for risk reduction. Switchers also tended to be younger. The average age of the switchers is 21.2, while the average age of non-switchers is 23.0.[19] This is consistent with the positive correlation between age and pro-privacy attitude.

Summary and conclusions

We sought insight into people's preferences for privacy and security when an explicit tradeoff exists between the two. While most participants chose a moderate level of privacy in exchange for a moderate level of security, some made choices that were consistent with a very strong preference for security, and others made choices that were consistent with a very strong preference for privacy.

In response to the first two questions we pose, we find that older participants tended to make high privacy choices and women were less likely than men to choose high security measures. Non-Anglo participants were less likely to make high privacy choices; international students tended to make higher security choices. These suggest that policies intended to enhance security, at the expense of privacy, must be sensitive to the relative values that citizens of diverse backgrounds place on privacy and security.

We answer our third and fourth questions by investigating choices over multiple rounds, observing how choices change when a participant experiences a loss or when a participant observes others' loss. Other participants' losses were associated with high privacy choices, while high security choices were more likely after participants experienced a loss themselves. However, a participant's first round decision remained predictive even when controlling for loss experience.

We find evidence for diversity of preferences for security and privacy, and we find that this diversity is correlated with observable characteristics and pre-experiment experience with surveillance. But those preferences are not immutable. Experimental experience led some participants to change their decisions, although not in uniform ways. This suggests that the relative value that citizens place on security and privacy will change as circumstances change and as events unfold.

Notes

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1. A search on LexisNexus Academic finds 121 references to "privacy security debate" in major U.S. and world publications between 16 September 2008 and 16 December 2008, of which 86 were in newspapers. In the prior 3 months, there were 134 references, with 100 of them in newspapers. See www.lexisnexis.com [last accessed 16 December 2008].

2. Both privacy and security are broad concepts, so it is important to clarify their definitions in the context of this article. The most accurate description of privacy for our purposes comes from Schoeman (1984), who described privacy as one's right to determine what information about oneself is communicated to others, one's degree of control over personal information, and who has sensory access to oneself, and a state or condition of limited access to oneself. These ideas are related to those found in Hirshleifer (1980), Stigler (1980), and Posner (1981). These authors consider privacy in both narrow and broad terms. Narrowly, privacy is the restriction or concealment of information (secrecy); broadly, privacy is freedom and autonomy from society, or the right to manage information about oneself. We adopt Baldwin's (1997) notion that security is a "low probability of damage to acquired values."

3. See Chandler (2009).

4. Lenard and Rubin (2006).

5. Compared to U.S. Census Statistics, our sample is younger and under-represents Caucasians and African Americans, while it over-represents Hispanics and Native Americans.

6. The formal model, including definitions and proofs, is available online as supplementary material. See www.epsjournal.org.uk, vol. 5, no. 1.

7. Figure S1 in the online supplementary materials illustrates this result.

8. The Stage One survey instrument is available in the online supplementary materials. Summary statistics of the results of this stage of the investigation are presented in Table S1.

9. Demographic detail and the distribution of responses to this attitude question are given in Table S2.

10. This information was presented to the participants in an expanded narrative. All experiment forms and instructions are available in the online supplementary materials.

11. The privacy issue variables were added one at a time to Model 1. If the additional variable was significant for either or both HP and HS it was kept; otherwise, it was dropped. In the case where the addition of a new privacy issue variable resulted in making an already included privacy issue variable insignificant, the variable which had the higher explanatory power was kept and the other was dropped.

12. Table S3 provides descriptive statistics for these prior-round variables.

13. The log-likelihood ratios indicate both models are a better fit than a restricted model with only a constant. Further, including demographic information in Model 2 provides better explanatory power than Model 1, as indicated by the log-likelihood ratio, as well as by the pseudo R-squared. Finally, the Wald statistic for the demographic variables is 11.11, implying rejecting the null of joint insignificance at the usual levels.

14. Again, Wald tests indicate the additional variables in Models 4 and 5 are jointly significant at the usual levels.

15. For example, Weber, Blais, and Betz (2002) find that women are more risk averse than men in four domains: financial decisions, health/safety, recreational, and ethical; however, women are not more risk averse than men in the domain of social risk. Fellner and Maciejovsky (2007) find that women are more risk averse than men when choosing between binary lotteries.

16. Three subjects experienced two losses, in rounds 2 and 3.

17. These means are different at about a 91% level of significance.

18. These averages are significantly different at a 97% level.

19. These values are significantly different at the 85% level.

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Table A1: Immediate feedback results

Variable	Model 3 High privacy Coeff	s.e.	p-value	Model 3 High security Coeff	s.e.	p-value	Model 4 High privacy Coeff	s.e.	p-value	Model 4 High security Coeff	s.e.	p-value	Model 5 High privacy Coeff	s.e.	p-value	Model 5 High security Coeff	s.e.	p-value	Mean
—Experience and attitude—																			
Attitude	0.09	0.19	0.64	-0.43c	0.29	0.14	-0.22	0.24	0.35	-0.95a	0.42	0.02	-0.43c	0.28	0.12	-0.60	0.62	0.33	2.97
Average rank	0.27	0.31	0.39	-2.26a	0.55	0.00	0.27	0.37	0.46	-2.89a	0.77	0.00	0.30	0.41	0.46	-4.96a	1.70	0.01	2.87
Percent yes	-2.89a	1.39	0.04	0.03	2.36	0.99	-3.78a	1.56	0.02	1.29	2.97	0.66	-4.56a	1.76	0.01	4.50	4.46	0.31	0.40
Financial check	0.11	0.60	0.86	-1.39	1.05	0.18	-0.19	0.83	0.81	-4.96a	2.02	0.01	0.05	0.87	0.95	-9.48a	4.54	0.04	0.26
Sobriety test	0.10	0.44	0.82	0.36	0.63	0.57	0.26	0.52	0.62	0.34	0.85	0.69	0.67	0.59	0.26	-0.30	0.99	0.76	0.31
—Demographics—																			
Age	—	—	—	—	—	—	0.21a	0.09	0.02	-0.08	0.18	0.65	0.21a	0.11	0.05	-0.25	0.26	0.33	21.15
Female	—	—	—	—	—	—	=0.42	0.48	0.38	-1.32b	0.77	0.08	-0.47	0.51	0.36	-1.95b	1.05	0.07	0.60
International	—	—	—	—	—	—	-0.53	1.28	0.68	1.99	1.72	0.25	0.43	1.50	0.78	-0.77	2.81	0.78	0.05
Non-Anglo	—	—	—	—	—	—	-0.79a	0.38	0.04	-1.09a	0.54	0.04	-0.81b	0.42	0.06	-0.58	0.60	0.33	0.63
Junior/senior	—	—	—	—	—	—	-2.81b	0.85	0.04	-0.37	0.88	0.68	-3.02a	0.91	0.00	0.13	1.18	0.91	0.25
Graduate	—	—	—	—	—	—	-1.52	1.17	0.19	4.41a	1.71	0.01	-1.71	1.54	0.27	8.15a	3.52	0.02	0.13
—Experimental—																			
R1 choice	—	—	—	—	—	—	—	—	—	—	—	—	-0.66a	0.28	0.02	1.35a	0.62	0.03	2.75
Outcome last	—	—	—	—	—	—	—	—	—	—	—	—	-0.46	0.67	0.49	2.01b	1.10	0.07	0.24
Percent incident last	—	—	—	—	—	—	—	—	—	—	—	—	-1.07	0.76	0.16	-0.60	1.47	0.68	0.45
Sum incident	—	—	—	—	—	—	—	—	—	—	—	—	1.75a	0.87	0.04	1.77	1.83	0.34	0.81
Group last	—	—	—	—	—	—	—	—	—	—	—	—	-0.43	0.30	0.16	0.98b	0.59	0.09	2.60
—Constant and time periods—																			
Constant	-1.70c	1.09	0.12	4.38a	1.64	0.01	-3.58b	2.14	0.09	9.69a	4.3	0.02	-0.44	2.65	0.87	7.85	5.93	0.18	
Round 3	0.32	0.42	0.45	0.84	0.65	0.19	0.38	0.46	0.40	1.03	0.72	0.16	-0.32	0.61	0.59	-0.17	1.33	0.90	0.40
Round 4	0.43	0.52	0.41	0.93	0.75	0.21	0.69	0.56	0.22	140b	0.84	0.09	-0.72	0.94	0.44	0.55	1.94	0.77	0.19

LL = -135.5; restricted LL = -161.7
chi-sq. = 52.5; pseudo-R^2 = 0.162

LL = - 115; restricted LL = -161.7
chi-sq. = 93.38; pseudo-R^2 = 0.29

LL = -101; restricted LL = -161.7
chi-sq. = 120.6; pseudo-R^2 = 0.37

Actual Predicted	Base	HP	HS	Total
Base	147	2	3	152
HP	35	0	2	37
HS	14	0	7	21
Total	196	2	12	210

Actual Predicted	Base	HP	HS	Total
Base	148	1	3	152
HP	26	10	1	37
HS	11	0	10	21
Total	185	11	14	210

Actual Predicted	Base	HP	HS	Total
Base	146	5	1	152
HP	24	13	0	37
HS	8	1	12	21
Total	178	19	13	210

Notes: a = stat. sign. at the 5% level; b = at the 10% level; c = at the 15% level.

On forgetful goldfish and failed mnemonics: transforming political economies of conflict using voluntarism, regulation, and supervision

Neil Cooper

> "[M]any international workers ... speak privately about the futility of their missions; of having impacts as lasting as training goldfish." William Reno (2008, p. 390).

One of the features of the post-cold war era has been a remarkable growth in academic and policy attention devoted to the role played by economic actors and economic agendas in the inception and perpetuation of civil conflicts as well as in shaping the prospects for postconflict peacebuilding. This has incorporated a large and diverse range of themes ranging from the trading of specific conflict goods, the conflict dynamics resulting from the interaction of greed, feasibility, and grievance factors at the local level, the broader economic and governance challenges arising from what has been labeled the resource "curse," and the even broader challenges produced by the interaction of local, regional, and global economic structures.[1]

This diversity of themes has also been reflected in the production of a rather disparate set of policies aimed at transforming economies of conflict. Indeed, a feature of these policies is that they have mostly been produced as subsets of other initiatives (e.g., environmental sustainability, good governance, poverty reduction, anticorruption, corporate social responsibility). One of the first observations to be made about the challenge of transforming war economies then, is that while it is widely recognized as a vital element in resolving conflicts, the universe of potentially relevant policy action is so diffuse, and so disaggregated into other policy arenas, that there is a sense in which it does not really exist as a discrete field of policy in its own right.

On one view, this dissipation into other policy frameworks does not really matter as issues of good governance, anticorruption, etc. all are integral elements of a broader liberal peace project capable of transforming war economies via the export of democracy, rights, and free markets. There is also a sense, even in much of the more critical literature, that while the technicalities of specific policies may need refinement, the broad reform agenda on issues such as ethical trading or anticorruption is nevertheless part of a progressive liberal history of ethical global regulation under which the range of issues tackled has gradually widened and the frameworks of ethical regulation have become ever deeper or more substantive. The remainder of this article is devoted to challenging these assumptions. In particular,

three sets of initiatives are examined that are most closely associated with the task of transforming war economies: voluntary ethical trading schemes, formal or de facto regulation to promote ethical trading or good resource governance, and economic supervision schemes.

The mainstream literature is characterized by a heated debate over the relative weight that should be given to these approaches, with voluntarism and formal regulation, in particular, often characterized as mutually exclusive options. In essence however, this represents a debate over what constitutes the best strategy to achieve a common goal: to set a framework that balances the pursuit of business (whether conducted to make profit, make war, or simply make-do in situations of acute poverty) against the broader economic and nonmaterial needs of individuals, societies, states, and the global system as a whole, and to do so in a context that takes liberal market precepts as a given. In short, the aim is deemed to be the creation of a more harmonious and pacific liberal political economy. Thus, the task of voluntarism, regulation, or economic supervision is simply to get economic actors operating under the imperatives of market logic to remember they have a broader social responsibility rather than succumbing to the regular temptations of narrow profit-making and the functional amnesia it can generate. As in the quote at the start of this article from William Reno's critique of economic supervision in Liberia, the common task is assumed to be akin to training goldfish to remember. To the extent that there is a disagreement it is principally over how widespread and how profound the predilection for amnesia is, how easy it is to bring back memory, and of course exactly where the point of harmony in a political economy of peace is located. In contrast, the final section of this article suggests that what is more striking from a critical political economy perspective is the way in which discourse and practice effectively works to obscure the recycling of failed policies, the retreat from more ambitious forms of ethical regulation and the absence of substantive action.

Three sets of initiatives are examined that are most closely associated with the task of transforming war economies: voluntary ethical trading schemes, formal or de facto regulation to promote ethical trading or good resource governance, and economic supervision schemes. This article suggests that what is striking from a critical political economy perspective is the way in which discourse and practice effectively work to obscure the recycling of failed policies, and points to the retreat from more ambitious forms of ethical regulation and the absence of substantive action.

Voluntary ethical trading schemes

The post-cold war era has witnessed an explosion in voluntary ethical trading

schemes. Proponents of voluntarism emphasize the difficulties involved in persuading states and companies to agree binding regulation, noting that the nonbinding nature of voluntary initiatives makes them more attractive to such actors and thus far more likely to be adopted. At the same time, they also adopt an essentially optimistic view of both the scale of ethical amnesia to be addressed and the ease with which memory can be restored. The logic underpinning voluntarism is either that the peer and civil society pressure exerted via nonbinding commitments are sufficient to remind the majority of companies and governments of the need to trade responsibly, or alternatively, that voluntarism can act as a stepping stone toward formal regulation—a kind of ethical mnemonic adopted in order to get to the full moral memory of formal regulation.

Advocates of voluntarism are also relatively optimistic about the ease with which the demands of profit-making can be reconciled with some kind of ethical trading framework. Indeed, on this view, ethical trading represents a form of enlightened self-interest on the part of economic actors who have just as much interest as consumers in ensuring strong states, law and order, wealthy customers, and brand loyalty. For example, a number of empirical studies have suggested a positive relationship between socially responsible behavior and the financial performance of companies.[2]

Critics highlight the way in which voluntary initiatives tend to be characterized by nonexistent or anaemic monitoring of compliance and little in the way of sanctions for noncompliance. The United Nations' Global Compact (GC), launched in 2000, is typical in this respect. It seeks to align business operations with a voluntary set of principles covering areas such as human rights, labor standards, the environment, and (since 2004) anticorruption. With a membership that includes over 4,700 businesses from 120 countries, it has been described as "the world's largest corporate social responsibility initiative" and as offering companies "one-stop shopping [on] …human rights, environment and labor standards, thereby reducing their transaction costs." But with an estimated 77,000 transnational firms with some 770,000 subsidiaries the scheme still only covers a minority of firms. Moreover, participation merely requires companies to publicly advocate for the GC, produce a communication on progress outlining how the company is working to advance the GC, and participate in GC policy dialogues—one of the earliest of which was on the role of business in zones of conflict. Crucially however, the arrangements to monitor claims made by companies in their Communication of Progress are limited to a provision introduced in 2005 under which third parties can report serious violations of Compact principles to the GC office. While this can prompt negotiations within the GC, complainants are prevented from making public statements until the issue is resolved. Despite these quite limited obligations, the GC's Annual Review for 2007 nevertheless recorded nearly a third of participants as either noncommunicating or inactive, and a 2004 study found that only 6 percent of participating companies were undertaking actions they would not have taken if they had remained outside the initiative.[3]

Perhaps a more fundamental criticism of the GC is that its very existence allows companies to resist calls for formal regulation by pointing to the action supposedly being undertaken as a result of voluntarism. This criticism can also be leveled at the Extractive Industries Transparency Initiative (EITI), a voluntary multi-stakeholder initiative that includes donor governments, civil society, producer countries, and companies in the extractive sector. The aim of EITI is to promote revenue transparency in the extractive sector through double parallel disclosure of payments by both host governments and companies. The underlying assumption is that transparency will deter the corrupt use of resource payments thus ensuring that money is used for the benefit of local populations and in ways more likely to maximize the developmental impact of natural resource wealth. EITI includes 37 of the world's largest oil, gas, and mining companies and 23 EITI candidate countries. The latter are required to implement EITI processes that include publishing information on state revenues from the extractive sector and engaging with a national stakeholder group. If certified as compliant by an EITI Validator, countries are then labeled as an EITI Compliant country. At the time of writing, no country has yet been validated by EITI although it is expected that Azerbaijan and Nigeria will achieve this status soon. In response to criticism that the EITI focuses on just one part of the revenue chain—company payments to governments—the World Bank has, in addition, sponsored a separate program, labeled EITI++, which aims to cover the entire resource chain from extraction, processing, and managing revenues to promoting sustainable utilization of resource wealth.

The voluntary nature of EITI means that membership remains patchy; only one of the word's top ten oil producers (Norway) and only one OPEC country (Nigeria) is a member of EITI. Moreover, the record of many candidate countries is not inspiring: Nigeria has failed to comply with legal requirements to audit 2006 and 2007 extractive industry revenues, and in 2008 the former head of the company Kellogg Brown and Root (now KBR) pleaded guilty to providing USD180 million in bribes to Nigerian officials between 1995 and 2004. In Iraq, another EITI country, Judge Rahdi, a leading anticorruption official has fled the country in fear of his life while only Burma and Somalia have a worse ranking in Transparency International's Corruption Perception Index. Furthermore, while the World Bank may have sponsored EITI++, one 2008 survey found that it only designated transparency as a program benchmark in 19 percent of country lending programs and that 90 percent of World Bank operations in resource-rich countries failed to promote contact disclosure. The key problem with the EITI however, as noted above, is that it can be understood as a voluntary, and thus weaker, alternative to calls for more rigorous formal regulation, in particular the "publish what you pay" (PWYP) campaign to make the listing of companies on stockmarkets contingent upon transparent publication of all payments to national governments.[4]

Formal regulation

The perceived failings of voluntarism have spurred calls for more formal regulation and/or de facto regulation via the creation of strong international regimes to address the different dimensions of war economies. Such calls have largely come from an NGO sector that has tended to hold a pessimistic conception of both the scale of ethical amnesia on the part of economic actors and the severity of the tension deemed to exist between the pursuit of profit and the broader economic and social responsibilities of such actors. For these proponents of formal regulation, market logic creates particularly strong imperatives for amnesia that require equally strong mechanisms of monitoring and enforcement if economic actors are to be persuaded to resist the siren temptations of functional forgetfulness.

Formal regulation is usually viewed, by supporters and opponents alike, as an ethical high water mark, even where commentators advocate some mix of voluntarism and regulation as the most pragmatic and effective means of promoting responsible business practices. Examples of formal regulation include national regulations such as the United States' Alien Torts Claims Act which allows companies to be sued at home for their behavior abroad; United Nations commodity sanctions imposed on actors in conflict, and multilateral initiatives such as the OECD 1997 Convention on Combating Bribery. An example of a relatively strong regime is the Kimberley Process Certification Scheme (KPCS) agreed in 2002 to prevent the trade in conflict diamonds. At the heart of the scheme is a requirement for participating governments to issue a certificate for each parcel of rough diamond exports declaring them to be conflict-free and for importing countries to only accept rough diamonds when accompanied by such certificates. Although Kimberley is a voluntary multi-stakeholder initiative, it nevertheless involves members enacting domestic legislation to support the scheme and it can punish noncompliance by expulsion. Given that the scheme involves all the major rough diamond producing, exporting, and importing companies and countries this is, in theory at least, quite a severe sanction. Indeed, for supporters this means that "in real terms it is compulsory." With the ending of sanctions on Liberia (see below) the only remaining example of conflict diamonds as defined by Kimberley are those exported from the rebel-held areas of Côte d'Ivoire. This trade, under U.N. sanction since 2005, has been valued at between USD12 and USD21 million annually, thus allowing the Kimberley Process to claim that conflict diamonds account for less than 0.1 percent of world production.[5]

Nevertheless, even formal and de facto regulatory approaches suffer from a number of weaknesses. For example, like action on conflict trade more generally they can be criticized as shaped by a "drugs, thugs and rocks" bias that primarily targets nonstate actors such as rebel groups, specific rogue states, and particular pariah goods (drugs, conflict diamonds) rather than the phenomenon of conflict trade or war economies per se. Thus, one study examining 26 conflicts involving resources in the period 1989-2006 found United Nations commodity sanctions were used on only seven occasions. Formal regulation and regime development also tend to occur within a security (e.g., antiterror) or policing and law and order framework that fails to address the political economies driving involvement in shadow trade and underpinning civil conflict. More generally, initiatives have also been criticized as being shaped by the interests of developed world actors, predominantly aimed at the developing world, and underpinned by crude representations of postcolonial states as arenas of poor governance and endemic corruption.[6]

The Kimberley Process Certification Scheme embodies many of these criticisms. For example, while the regime, which came into operation in January 2003, is ostensibly designed to prevent the trade in conflict diamonds, it operates under a restrictive definition that describes them as "rough diamonds used by rebel movements or their allies to finance conflict aimed at undermining legitimate governments as described in relevant United Nations Security Council (UNSC) resolutions." Consequently, even as it aims to prevent the trade in conflict diamonds, KPCS does not necessarily prevent the trade in diamonds from conflicts—either because the definition excludes both the trade in polished diamonds and trade conducted by "legitimate governments" or because the trade has not, anyway, been subject to U.N. sanction. As Kimberley has evolved, actual practice has tended to exacerbate such definitional problems.[7]

For instance, diamond sanctions imposed on Charles Taylor's Liberia in 2001 were not only continued for four years after his eviction and the formation of a transitional government in 2003 but for over a year after a new democratically elected government came to power in January 2006. This was on the grounds that although conflict was over, it was necessary to keep sanctions in place until Liberia improved governance of the diamond sector. Consequently, Liberian diamonds were effectively treated as conflict diamonds by the Kimberley Process. More recently there has been growing pressure for Kimberley to go beyond the formal definition of conflict diamonds and take action against particular pariah states whose governance of the diamond sector has been criticized. Most notably, NGOs such as Global Witness and Partnership Africa Canada have called for the expulsion of Zimbabwe following reports of human rights abuses committed against informal diamond miners and subsequent government collusion in the illicit diamond trade from Maranga, close to the border with Mozambique. In January 2009, the European Union also urged the Kimberley Process to probe Zimbabwe's diamond trade, and in March 2009 a high-level envoy team was dispatched by the Kimberley Process to express its concerns to the government of Zimbabwe. To date, Zimbabwe has not been expelled from Kimberley, although in April 2009 the World Federation of Diamond Bourses did call on all members to ensure that they did not trade in diamonds from Maranga (although not other diamond producing areas in Zimbabwe).

For critics, the failure to take stronger action against Zimbabwe has highlighted the weaknesses of the regime. At the same time the willingness to stretch the

definition of conflict diamonds in the case of pariahs such as Zimbabwe is notably at odds with action toward other actors. For example, diamond exports from the Democratic Republic of the Congo (DRC)—even by nonstate domestic actors or regional neighbors such as Uganda or Rwanda—have never been subject to a U.N. ban and thus never been labeled as conflict diamonds. Similarly, the Israeli government recorded net exports of polished diamonds (after returns) of USD6.6 billion in 2006 and net exports of rough diamonds of USD2.7 billion. Separate Kimberley Process data recorded a slightly higher figure for rough diamond exports of USD3.5 billion, making Israel the world's largest exporter of rough diamonds in 2006. In total, official net diamond exports accounted for almost 15 percent of goods and services exported from Israel in 2006, thus making a significant contribution to the Israeli war economy. Yet despite the ongoing Israeli-Palestinian conflict, Israel's continued breach of U.N. resolutions, and its 2006 war in Lebanon, neither its polished or rough diamond exports were (or are) deemed to be conflict diamonds by either the United Nations or the Kimberley Process. Instead, Israel has been elected as Deputy Chair of the Kimberley Process for 2010.[8]

A further problem with regard to Kimberley is that it was primarily established to address the issue of conflict diamonds via a system of policing and monitoring, rather than to address the broader political economies of diamond production that contributed to the production of conflict economies in the first place. For supporters, Kimberley has, nevertheless, produced important developmental benefits. For example, while Kimberley only came into being after the end of conflicts such as those in Sierra Leone or Angola, it is argued that NGO campaigns on conflict diamonds and the subsequent negotiations on Kimberley provided a deterrent effect that restricted the ability of rebel groups to raise funds, thus contributing to the peace necessary to spur development. It is also argued that certification has produced marked rises in official exports from such states, thus raising the tax revenue also necessary to promote development. Moreover, the absence of a formal development component in Kimberley itself has been addressed via the creation in 2005 of the Development Diamond Initiative (DDI), a separate but complementary multi-stakeholder effort involving many of the same industry and NGO actors associated with Kimberley. The aim of DDI is to "optimize the beneficial development impact of artisanal diamond mining to miners and their communities." In addition, donors such as the United Kingdom and the United States have promoted various initiatives (e.g., the creation of cooperatives in Sierra Leone) aimed at addressing the exploitation of diggers and improving governance of the diamond sector in postconflict states.[9]

However, the experience of postconflict Sierra Leone illustrates the development deficiencies in this broader conflict/development diamond regime. First, donor initiatives to address the pay and conditions of diggers have mostly been tokenistic and short-term. Thus only five cooperative projects involving 50 to 70 people were implemented in an industry estimated to involve at least 120,000 diggers, and even

these have now ceased. Similarly, while the DDI has produced a number of reports on the conditions of diggers, it has, to date, resulted in few concrete projects. Diggers in Sierra Leone therefore continue to earn an estimated one to two U.S. dollar a day while in 2005 the country's top three exporters officially transferred diamonds worth USD105 million. Second, although the government's tax take from diamond exports has risen, this amounted to just USD5.2 million in 2004 and is constrained by the fact that higher taxes stimulate shadow trade across porous borders. In neighboring Liberia, government revenue from the now sanction-free diamond sector is predicted to be just USD500,000 to USD750,000, enough to cover the costs of implementing Kimberley but little else. Third, while smuggling certainly remains a problem for countries like Sierra Leone, its principal problem is arguably the phenomenon of capital flight which has meant that "hardly any of the profits generated by the diamond sector are reinvested in Sierra Leone." Fourth, neither Kimberley nor the DDI addresses the fact that the economic returns from Sierra Leone's diamond sector are limited as a result of the way value is added elsewhere in the global diamond economy. For example, one estimate for 2007 calculated that while the global value of rough diamond production amounted to USD12.5 billion, the value after polishing was USD19 billion, after going through the jewelry wholesale pipeline it increased further to USD30 billion and finally amounted to some USD70 billion in the jewelry retail sector.[10]

A combined conflict/development diamond regime that responds to the structural exploitation inherent in the global diamond industry with acts of ethical tokenism is perhaps best understood as a simulation of an ethical trading regime rather than a substantive manifestation of one. Similarly, a conflict diamond regime that permits Israeli diamond exports in the middle of its war in Lebanon while simultaneously proscribing diamond exports from postconflict Liberia is best described as a disciplinary tool directed against nonstate actors and weak and pariah states, rather than one aimed at the phenomenon of conflict diamonds per se.

Economic supervision: amnesia meets polyphasia

The third approach to the interrelated problems of conflict trade, the resource curse, and the challenge of transforming war economies has been to use various forms of economic supervision to address the economic agendas of actors during conflict or

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to improve economic governance during peace. This has most commonly occurred when donors have been able to take advantage of a state's permanent or temporary dependence on external funds or troops to impose forms of oversight or guidance that significantly undermine the sovereign powers of a particular aid or security supplicant—albeit with the aim of transforming war economies. Such initiatives are underpinned by acutely pessimistic assumptions about the willingness of local political elites to engage in ethical amnesia. Indeed, there is often an assumption that corruption and exploitation are so widespread and ingrained as to be intrinsic to the political economy of society, in short, that there is not much in the way of ethics to forget in the first place. At the same time, it is also assumed there is a latent demand among the general population for liberal forms of political and economic governance that is simply waiting to be released. The solution advocated therefore is emergency external oversight to deter and detect abuse combined with radical projects of societal transformation (e.g., capacity building, civil society empowerment) aimed at reforming elites, releasing pent-up demand, and thus preventing or demobilizing war economies.

The most cited example of economic supervision is the way in which the need for World Bank support of the Chad/Cameroon oil pipeline was used as a lever to impose a range of governance conditionalities on Chad, notably the passage of a Revenue Management Law that specifies how funds from the pipeline will be spent (e.g., 80 percent of oil royalties were to be spent on poverty reduction programs). Another example is the Governance and Economic Management Assistance Program (GEMAP) introduced in postconflict Liberia in an attempt to address the pervasive corruption that has dogged successive Liberian governments. A key element in this program is the placing of international experts (or "foreign corruption spotters") in key positions inside major ministries and economic agencies such as the forestry commission and the Central Bank of Liberia to prevent the misuse of resources.[11]

However, local actors are often quite adept at deploying strategies of obstruction, evasion, or cooption of such initiatives. Moreover, a decline in dependence on external support may lead to renegotiation or outright rejection of supervision, particularly in a context where externals place rhetorical emphasis on both sovereignty and local ownership, and tend to suffer from a limited attention span anyway. Thus, once the oil came on tap in Chad the government passed a new law in 2005, ultimately accepted by the World Bank, permitting revenues to be spent on security and administration. In 2008, the World Bank withdrew from the project having concluded it would not achieve its original aims. Similarly, while GEMAP has achieved some short-term successes, Reno has noted how it is merely the latest in a succession of similar initiatives that ultimately had little effect: in 1998 for instance the United States sponsored an initiative that also put foreigners into government agencies. Goldfish-like Liberians, it would seem, are adept at sitting out emergency projects of social engineering and relying on the equal facility of donors to forget both their current ambitions for reform and the fact they have already been tried and failed anyway.[12]

Moreover, projects of economic supervision are framed as exceptional responses to local manifestations of pathologies supposedly common to all nonliberal forms of political economy and which in their local form threaten the security of citizens and externals alike. Thus, economic supervision depends for its legitimization on a one-size-fits-all problematization (and securitization) of local governance and economy while also proffering a one-size-fits-all solution in the form of the liberal peace. Indeed, both the problematization of war economies and the emphasis on the imperative of transformation can be understood as speech acts that securitize and pathologize the local in order to legitimize the extraordinary measures deemed necessary to bring about liberal governance.[13]

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The crude representations of both the problem and the solution are equally flawed. For example, certain forms of corruption may actually facilitate growth or provide stability, and even certain features of war economies can be engines of development. Part of the task of transforming political economies of conflict, then, is to avoid dismissing them as wholly dysfunctional and instead to identify the building blocks of peace and development existing inside local war economies. Furthermore, liberal projects of societal transformation imposed on postconflict societies can actually exacerbate features of poor governance, e.g., by introducing new opportunities for corruption linked to electoral or privatization processes, which can be further fanned by the unwillingness of donors to critique key economic or security allies.[14]

For some commentators the attempt to transform or prevent war economies via economic supervision has echoes of imperial imposition or can be understood as a strategy of biopolitics that aims to regulate the actions and transform the sensibilities of target populations, albeit under a simulacra of empowerment. Such analyses provide important insights into the politics underpinning economic supervision strategies. However, it is also important to recognize that the multiple strategies of cooption and resistance employed by local actors combine with selective strategies of accommodation on the part of externals to actually create hybrid forms of the liberal peace that, at least partly, frustrate the aims of external engineers. Moreover, these hybrids are often as problematic, as the modes of governance and economy they replace, with only temporary external instruments of pacification (troops and increases in aid) concealing this fact. Rather than concluding that local ownership and accountability therefore represent a prerequisite for the successful transformation of war economies, advocates of liberal intervention often view dysfunctional hybridity as a reason for even more extensive attempts to engineer liberal mimesis in the

societies of the "other."[15]

The combined effect is to leave projects of economic supervision looking more like examples of cognitive polyphasia on the part of externals who simultaneously invent more ambitious projects of reform while fetishizing sovereignty and local ownership, engaging in serial accommodation with local actors, and forgetting that their strategies have often been tried (and failed) before anyway.

The production of forgetting

In many respects the problem-solving debates over the appropriate balance between voluntarism, regulation, and economic supervision are fierce, as is the discussion on how best to reform the technicalities of initiatives such as EITI or Kimberley. Underpinning these fierce debates, however, is a shared understanding of the goal and direction of action. The goal is deemed to be the creation of frameworks that will transform economic actors capable of evincing the moral memory of goldfish into ethical elephants who never forget their broader obligations to state, society, and the international system. Moreover, whatever the nature of temporary setbacks, the direction of action is assumed to be ever onward and upward to the production of more extensive and more substantive ethical frameworks.

From a critical political economy perspective, however, the frameworks of voluntarism, regulation, and supervision, and indeed the dominance of the consensus, are better understood as cornerstones in an architecture of forgetting that functions in a number of ways and has a number of features. First, the assumption of linear advancement in ethical initiatives requires (and reinforces) extensive amnesia over the extent to which contemporary policies have either been recycled from past failures or actually represent a retreat from ethical regulation. In the first instance, programs for monitoring in Liberia, or as in Sierra Leone cooperative experiments that echo the push to promote cooperatives in the early 1950s, are presented as elements of a new, more progressive architecture of liberal intervention to transform war economies, rather than examples of history rhyming. Moreover, the ballooning of voluntary multi-stakeholder ethical trading initiatives in the post-cold war era is best understood as actually working to mask the general failure of attempts in the 1970s to impose meaningful constraints on corporate power and rebalance the relationship between the developed and developing world as part of Southern demands for a New International Economic Order. Thus, the 1974 U.N. Charter of Economic Rights and Duties of States had little effect as it was resisted by those countries with most jurisdiction over transnational corporations. The U.N. Center on Transnational Corporations (UNCTC), also established in the mid-1970s, was disbanded in the 1990s under pressure from Northern governments; the development of a Draft Code of Conduct on Transnational Corporations had stalled by the 1980s; and a similar initiative in the form of NGO pressure to make the 2003 U.N. Draft Norms on the Responsibilities of Transnational Corporations legally binding has been

equally fruitless. In the main, those initiatives that have survived from the 1970s have tended to be the weaker, nonbinding agreements that emerged such as the OECD's Guidelines for Multinational Enterprises or the ILO's Tripartite Declaration of Principles Concerning Multinational Enterprises.

Second, the impression of frenetic ethical activity produced by the current plethora of initiatives obscures the failure to meaningfully address the various iniquities in the global trading system. These include declining terms of trade for low-income countries predominantly dependent on commodities for export and limited in their ability to add value in global trading systems such as that for diamonds—agricultural prices, for example, declined by 70 percent between 1961 and 2001. This problem has been further compounded by the adoption of various strategies to restrict market access to OECD countries while subsidized goods from developed world economies are dumped on the economies of aid supplicants required to open up their markets. In addition, the failure to circumscribe capital flight from the developing world and to take effective action against tax havens means that developing countries lose three times the value of aid provided by the developed world. At the same time, poverty reduction initiatives inside the developing world essentially constitute a relabeling of neoliberal macroeconomic policies emphasizing deregulation, privatization, lowering company taxes, reducing government wage bills, and integration into global markets. In contrast, in 2006 just USD88 million out of a total USD103 billion of aid from OECD countries was dedicated to tax-related tasks.[16]

Third, the simulation of ethical action on both trade and war economies effectively functions as a form of misdirection that obscures the way current initiatives combine a problematic cocktail of disciplinary action aimed at particular pariah actors or goods with either ethical tokenism or simple neglect. Thus, while postconflict Liberia struggled with the legacy of diamond sanctions for four years, the reality is that most forms of conflict trade remain unregulated, uncertified, and unsanctioned. Indeed, there is not even an agreed international definition of what constitutes conflict trade. At the same time, however, the multiplication of tokenistic initiatives gives the impression that a high point of formal and informal ethical regulation has been reached. But it is instructive to compare the panoply of weak ethical trading initiatives with the regulatory frameworks deployed to defend the core principles of neoliberalism. For example, both states and firms face significant penalties for breaching free trade and competition requirements. Thus, the World Trade Organization permits states to impose quite substantial sanctions on other countries deemed to be engaging in anticompetitive practices; the European Union has imposed a series of fines amounting to EUR1.7 billion on Microsoft for breaching competition policy; while Shell had total fines of GBP85 million imposed on it by authorities in the United Kingdom and the United States for overstating its oil reserves and EUR161 million for its role in a cartel designed to fix the price of synthetic rubber.[17] It might be argued that such fines are not that substantial when

compared to the global sales of the firms involved. However, with the possible exception of Kimberley, they provide an embarrassing contrast to current action on the phenomenon of conflict trade.

Conclusion

The analysis presented here suggests that the current mix of voluntarism, regulation, and supervision is characterized by a drugs, thugs, and pariah bias that serves to discipline various weak, pariah, and nonstate actors rather than imposing regulation to transform war economies per se. Thus, on the one hand, the problematization of war economies serves to securitize the presumed pathologies of local governance and economy in order to legitimize the application of extraordinary measures designed to induce liberal mimesis inside weak and postconflict states, measures that are resisted in ways that actually produce dysfunctional hybrids of the liberal peace. On the other hand, on the outside of the weak and postconflict state, the apparent profusion of ethical action on conflict trade not only masks the failure to undertake substantive action to reform global structures that promote economies of conflict but significant elements of retreat from this goal. This is not to suggest that initiatives such as Kimberley or EITI are totally without merit; rather it is to suggest that even where individual initiatives achieve limited successes the broader structures of the global economy and the application of one-size-fits-all neoliberal prescriptions inside the weak and postconflict state militate against any substantive transformation. If the aim of action really is to encourage economic actors with a tendency for ethical amnesia to remember their broader responsibilities beyond narrow profit-making, then current action is more akin to training goldfish in a desert. However good individual training programs might be, the broader context in which they occur means they are ultimately destined to fail.

Notes

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1. Ballentine and Nitzschke (2005); Ross (2004); Pugh and Cooper (2004).

2. Enlightened self-interest: e.g., Schwab (2008); empirical studies: e.g., Margolis and Walsh (2003).

3. On the GC, including membership, see http://www.unglobalcompact.org. Quotes from Ruggie (2007, p. 2) and Kell and Ruggie (2000, p. 20); number of transnational firms: Kell and Ruggie (2000, p. 6); complainants: Smith (2008, p. 15); noncommunicating: Global Compact (2007, p. 51); 6 percent: Smith (2008, p. 16).

4. EITI membership: Taylor (2008); bribes: "Former Head of Haliburton Firm Faces Seven Years in Jail for Bribery," *The Guardian* (London: 4 September 2008); Iraq, Burma, Somalia: U.S. Senate (2008, p. 66); World Bank: Global Witness (2008, p. 1); PWYP: Turner (2006, p. 375).

5. High-water mark: Lunde and Taylor (2005); KPCS quote: Smillie (2005, p.4); Côte d'Ivoire sanctions: letter dated 8 October 2008 from the Chairman of the Security Council Committee established pursuant to resolution 1572 (2004) concerning Côte d'Ivoire addressed to the President of the Security Council, New York: United Nations, S/2008/598, 9 October 2008, p. 33, para. 133; claim regarding conflict diamond world production: http://www.kimberleyprocess.com/faqs/index_en.html.

6. Seven occasions: Le Billon and Nicolls (2007, p. 620); vested interests: Lunde and Taylor (2005).

7. Quote: http://www.kimberleyprocess.com/documents/basic_core_documents _en.html.

8. Zimbabwe: see, e.g., the Partnership Africa Canada reports listed in the references; Israeli diamond exports: Office of the Diamond Controller, Facts and Figures: Diamonds, Precious Stones and Jewelry, 2006, and Ministry of Industry, Trade and Labor, Diamonds, Precious Stones and Jewelry Administration, Office of the Diamond Controller, May 2007; KPCS data on Israeli diamond exports: https://mmsd.mms.nrcan.gc.ca/kimberleystats/publicstats.asp; Israeli diamond export contribution to Israeli economy: Israel (2007).

9. Deterrence effect: Partnership Africa Canada (2008, p. 22); tax revenue effect: Partnership Africa Canada (2006); quote from: http://www.ddiglobal.org/pages/ddi_mission.php.

10. Sierra Leone's ceased cooperative projects, diggers' earnings, export earnings, tax revenues: Cooper (2008); Liberian tax revenues: Partnership Africa Canada (2007); quote: Zohar (2003); value-chain: DIB Online, "Chaim Even-Zohar Addresses Diamond Industry Issues at Mining Indaba Conference," 5 February 2008 (http://www.diamondintelligence.com).

11. Royalties: Alexander and Gilbert (2008); "spotters": United Nations Integrated Regional Information Network, "Foreign Corruption Spotters Are Now in Place," 24 May 2006.

12. Reno (2008, p. 388).

13. Jennings (2008).

14. Corruption may facilitate: Reno (2008); Kang (2002); engines of development: Cramer (2006); exacerbation of poor governance: Le Billon (2008, p. 351).

15. Biopolitics: Duffield (2007); Chandler (2006); simulacra of empowerment: Pugh, Cooper, and Turner (2008, p. 391); dysfunctional hybridity: see, e.g., Krasner (2004).

16. Agricultural prices: Willett (2008, p. 70); aid: Gurria (2008).

17. *The Guardian*. "EU Fines Microsoft Record £680m 'to Close Dark Chapter' in Fight Against Monopoly." 28 February 2008; *The Guardian*. "Shell Faces New Damages Claim." 10 January 2006.

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