Peace economists and peace economics

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Abstract: We define peace economics as the economic study and design of political, economic, and cultural institutions, their interrelations, and their policies to prevent, mitigate, or resolve any type of latent or actual destructive conflict within and between societies. Differentiating peace economics from defense/military economics, conflict economics, and security economics, we assert that while founded on positive precepts, peace economics is distinct for its normative character. We place peace economics within a larger framework of positive peace and social system sustainability and briefly discuss some challenges.

Keywords: peace, peace economics, normative, positive peace, social system sustainability

JEL: B40, D74, D78, H56

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1. Introduction

On 7 June 1919, two days after his 36th birthday, John Maynard Keynes, resigned from the United Kingdom's Treasury team at the Paris Peace Conference negotiating what was to become the Treaty of Versailles, signed on 28 June 1919. The details of Keynes' already lofty intellectual stature and of the political environments in Britain, France, and the United States at the time can be gleaned from Robert Skidelsky's, and from numerous other, biographies of the man.[1] Upon his resignation, Keynes penned a small book, published in 1920. Called *The Economic Consequences of the Peace*, he prefaced it as follows:[2]

> The writer of this book was temporarily attached to the British Treasury during the war and was their official representative at the Paris Peace Conference up to June 7, 1919; he also sat as deputy for the Chancellor of the Exchequer on the Supreme Economic Council. He resigned from these positions when it became evident that hope could no longer be entertained of substantial modification in the draft Terms of Peace. The grounds of his objection to the Treaty, or rather to the whole policy of the Conference towards the economic problems of Europe, will appear in the following chapters. They are entirely of a public character, and are based on facts known to the whole world.
>
> J. M. KEYNES.
> KING'S COLLEGE, CAMBRIDGE,
> November, 1919.

1. Skidelsky (1983). Of course, one may also consult wikipedia: http://en.wikipedia.org/wiki/John_Maynard_Keynes [accessed 14 October 2011].
2. Keynes (1920); also see Keynes (1922).

Thereupon, Keynes lay out, in so compelling a fashion that neither his argument nor his evidence has ever been seriously challenged, the case for why the allies' Terms of Peace to be imposed on Germany were physically and financially impossible to fulfill. The whole of the book can be read in a single, focused three-hour session, but many a reader soon will submit to Keynes' passionate avalanche of striking, overwhelming, and eventually mind-numbing detail: One begins to skip the painful detail of how the victors intended to punish the loser and reads the book in two.

Keynes writes (Keynes, 1920, pp. 250-251):

> If we take the view that for at least a generation to come Germany cannot be trusted with even a modicum of prosperity, that while all our recent Allies are angels of light, all our recent enemies, Germans, Austrians, Hungarians, and the rest, are children of the devil, that year by year Germany must be kept impoverished and her children starved and crippled, and that she must be ringed round by enemies; then we shall reject all the proposals of this chapter, and particularly those which may assist Germany to regain a part of her former material prosperity and find a means of livelihood for the industrial population of her towns. But if this view of nations and of their relation to one another is adopted by the democracies of Western Europe, and is financed by the United States, heaven help us all. If we aim deliberately at the impoverishment of Central Europe, vengeance, I dare predict, will not limp. Nothing can then delay for very long that final civil war between the forces of Reaction and the despairing convulsions of Revolution, before which the horrors of the late German war will fade into nothing, and which will destroy, whoever is victor, the civilisation and the progress of our generation.

Such were "the economic consequence of the peace" indeed: Restrictions on world trade, hyper-inflation, the depression years in the United States and in Europe, the rise of Hitler, the pogrom that became the Holocaust, and war on such a calamitous scale that "the horrors of the late German war will fade into nothing." How prescient.

Even though it be true that Keynes' efforts at sanity failed, one cannot think of a more dramatic demonstration of what good economists have ever done for peace.

Alas, in late 1944, Henry Morgenthau, the then-Secretary of the United States Treasury, advocated a "harsh peace" for Germany. His eponymous Morgenthau Plan foresaw the partitioning of Germany into several entities, stripping it of its most valuable raw materials and industrial assets in the West—namely, the coal deposits and the iron and steel industry in the Ruhr area—depriving it of any industrial prowess at all. He argued for the complete pastoralization of Germany, reducing the people of the geographic heartland of Europe to mere tillers of the land.

News of a somewhat modified plan agreed by Franklin Roosevelt and Winston Churchill on 16 September 1944 leaked, and then led to a redoubling of Germany's, albeit already-doomed, war effort.[3] Following Victory Day, plans to deindustrialize Germany proceeded apace: Its remaining factories were dismantled, parts, machinery, and equipment shipped abroad, patents expropriated, research forbidden, and—in a mad dash—useful engineers and scientists spirited out of the country just as soon as any of the Allies could lay their hands on them.[4] Despite the

3. See chapter 6 in Brauer and van Tuyll (2008).

4. The story goes that when Soviet and U.S. warplanes met in the skies over Korea, during the Korean war, the pilots were mutually perplexed about the sophistication and similarity of the aircraft, the MIG15 and the F86: It appears both jets were designed, in no small part, by postwar access to German documents as well as post-Nazi

Bretton Woods agreement, in July 1944, to set up a troika of global institutions—the International Monetary Fund, the International Bank for Reconstruction and Development, and the General Agreement on Tariffs and Trade—Europe's economies declined postwar. It looked as if Keynes' *Economic Consequences of the Peace* might be repeated yet again.

But saner heads prevailed—eventually. In the waning moments of the European war, the American presidency changed hands. Roosevelt had died, and Truman assumed the Presidency on 12 April 1945. Morgenthau's term as Secretary of the Treasury ended on 22 July 1945. Even as the deindustrialization of Germany went forward as initially planned, in a famous speech delivered in Stuttgart on 6 September 1946, Truman's new Secretary of State, James Byrnes, took a dismal view of the effects. So did former president Herbert Hoover, in a series of reports penned in 1947. As Germans scraped by on starvation diets, Stalin's Soviet Union was a rising power. Already it held eastern Germany and, as from 24 June 1948, it was to blockade the Western allies' rail and road access to the partitioned Berlin, prompting them to fly in relief supplies and sharply escalate the incipient Cold War. The writing on the wall seemed clear: An economically strengthened, resurgent Germany either could be part of a new Western alliance or be incorporated into a Soviet one. As in the 1920s, it was feared that hungry mouths would flee to those who promised to feed them.

In July 1947, Truman thus came to abolish the punitive measures imposed on Germany, and his new Secretary of State, General George C. Marshall (Byrnes had resigned his post in January that year) formulated what would become the eponymous Marshall Plan, in effect from 1948 to 1952. Not blind to its political purpose, a strange kind of peace economics had been crafted, for which Marshall would be awarded the Nobel Peace Prize in 1953.[5]

So there we have the peace economist, in the person of Keynes, and peace economics, or at least nonwar economics, in the person of Marshall. This sets the stage for two strands one might investigate: One concerning a flurry of books by prominent economists on the problem of peace, the other, a flurry of activity by bureaucrats and politicians to secure it. Among the former are such famed names—among economists at least—as A.C. Pigou, Kenneth Boulding, and Lionel Robbins, Englishmen all, each penning one or more books detailing their thoughts on the matter.[6] Among today's luminaries, economics Nobel Laureate Joseph Stiglitz, together with co-author Linda Bilmes, is probably the outstanding voice regarding the cost of war.[7] Indeed, about a dozen economics Nobel Laureates, Stiglitz among them, grace the board of Economists for Peace and Security in the United States.[8] As happened to Keynes, the political establishment mostly ignores them. But, again as Keynes, this does not render their views false.

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scientific, engineering, and design refugees/migrants, one part having gone West, the other East. Ample documentation is available on the internet but see, e.g., the illustration in Budiansky (2004, p. 372). Much the same was true of rocketry and nuclear engineering; see Rhodes (1995) or google "Operation Paperclip" and "Operation Osoaviakhim," respectively.

5. See the Nobel citation speech at http://www.nobelprize.org/nobel_prizes/peace/laureates/1953/press.html [accessed 14 October 2011].

6. Pigou (1916; 1920; 1921); Boulding (1945); Robbins (1950). See Coulomb (2004) for a history of economic thought on war and peace.

7. Stiglitz and Bilmes (2008).

8. See www.epsusa.org [accessed 14 October 2011].

On the bureaucratic-political side of things, the single-most often told story is that of Jean Monnet and Robert Schuman. Like Keynes, Monnet participated in the Paris Peace Conference in 1919, in Monnet's case as an assistant to the French delegation. Like Keynes, he envisioned a pan-European economic cooperation zone. Like Keynes, he would be disappointed.[9] Despite this, the French appreciated his good efforts and awarded him with the post of Deputy Secretary-General of the newly-founded League of Nations. Monnet was but 31 years old. He resigned four years later and devoted himself to international business and finance. He resurfaced during the early World War II years in positions of high influence in France, Britain, and the United States, urging Roosevelt to get on with an industrial armaments plan, the success of which led Keynes to credit him with shortening the war by a year.[10] Together with Robert Schuman—the Franco-German-Luxembourgian statesman, French Minister of Finance, of Foreign Affairs and, twice, Prime Minister of France—plans were crafted and introduced for what with many a twist and turn eventually would become today's European Union. These plans were wholly based on a vision of a pan-European economic union, so intricately interconnected, so tightly woven, so strongly bound, that European war would no longer be thinkable, nor indeed feasible.

2. Defense, conflict, and security economics

As an academic discipline, what has economics ever done for peace? Plenty, it turns out, even if the modern-day economics profession, certain luminaries notwithstanding, does not seem much interested in the topic. But just one comparative chart illustrates why the profession, and others, should care: Peace pays; violence costs (Figure 1).

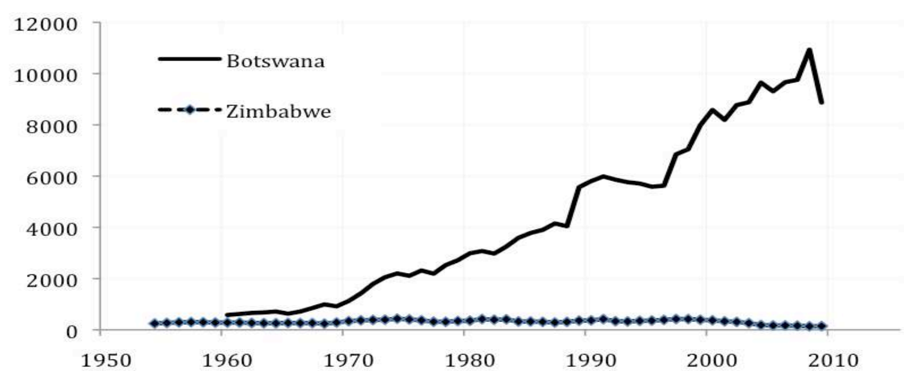

Figure 1: Inflation- and purchasing power parity-adjusted per capita GDP, Botswana and Zimbabwe (I$; base year=2005).

Source: Extracted from Penn World Table, v7.

9. Although routinely described as "an economist," Monnet received no economics training, nor in fact any post-secondary formal education at all.

10. Mayne (1991, p. 117). It is difficult to find an original source for the statement attributed to Keynes, but one source may be http://www.larouchepub.com/other/2000/cheminade_fdr_monnet_2724.html#fnB1 [accessed 14

It is not that Botswana is free of economic troubles, but that its peaceful politics facilitate or, at least, do not impede its economic advancement. The same of course cannot be said about its neighbor, Zimbabwe.

A brief history: In the post-World War II era, **defense economics** might be dated with the arrival of Robert McNamara in the Pentagon as U.S. Secretary of Defense. Defense economics deals with economic aspects of managing the defense sector and includes topics such as military R&D, procurement, and the defense industry (e.g., Gansler, 1980; 1989), military manpower and the debate over moving from conscription to an all-volunteer force (e.g., Ash, Hosek, and Warner, 2007; Poutvaara and Wagener, 2007), the use of game theory to understand the implications and to devise strategies to manage the then-ongoing nuclear arms race between the United States and the Soviet Union (e.g., Schelling, 1960; Harsanyi, 1965), and alliance theory, the theory of how alliances arise and function (Olson and Zeckhauser, 1966). The key conceptual idea is that defense economics deals with aspects *internal* to the defense establishment. However, this soon gave rise to extensions, such as debates over whether military R&D leads to civilian sector "spin-offs" (Ruttan, 2005; Brauer, 2007a; 2007b), whether military spending stimulates underperforming developing economics (Benoit, 1973; Faini, *et al*., 1984; Ball, 1988), and studies on the economic effect of military expenditure on subnational and national economies. For instance, military bases and arms manufacturers were (and are) unevenly distributed across the geography of the United States so that taxes raised in some states were expended in and benefitted other states. Geographically uneven military expenditure, in turn, could skew recruitment of military-related construction, engineering, scientific, consulting, and other work and therefore affect local and regional labor markets. At the national level, military expenditure implied financing by taxation or borrowing, with macroeconomic consequences. An extensive theoretical and empirical literature developed to appraise, for example, the short-term and long-term stimulatory or diversionary effects of military expenditure on national economic output. Whereas defense economics initially was internal to the defense establishment, it soon attracted independent, academic economists studying the potentially beneficial or adverse economy-wide effects of military expenditure per se. The field now might well be said to have broadened into **military economics** (e.g., Smith, 2009).

With the ending of the Cold War in the late 1980s, a series of brutal civil wars broke out during the 1990s, not only but especially in Africa, and led to an increased interest in **conflict economics**. Inasmuch as investments and activities by international financial institutions such as the World Bank Group and the International Monetary Fund were placed at risk, conflict economics, based on academic work by Jack Hirshleifer in particular,[11] became both a catch-all as well as a euphemism. As a catch-all, it broadened the scope of academic work to consider any type of conflict between and among diverging interests. As such, conflict includes conflict within families, between firms and employees, firms and their suppliers, firms and their customers, conflict between vested interests for public sector largesse, and so on. Hirshleifer applied a "contest success function," a mathematical description of the likelihood of succeeding in a contest, or conflict. Anderton and Carter's 2009 textbook is a reflection of this, as is *The Oxford Handbook on the Economics of Peace and Conflict*, edited by Garfinkel and Skaperdas (2012). Yet,

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October 2011] which, in turn, references Mönick (1970).

11. See, e.g., the essays in Hirshleifer (2001).

conflict economics is also a euphemism as, in practice, much of what conflict researchers address is highly violent, shockingly brutal, endemically entrenched, and sometimes genocidal. In addition, conflict economics—reflecting the orthodox, rational choice theory way of doing economics—prides itself on its positive rather than normative mode of analysis. The theoretical basis of conflict economics is the distinction between productive and unproductive activities within economic systems, first emphasized by Vilfredo Pareto in 1906: "The efforts of men are utilized in two different ways: They are directed to the production or transformation of economic goods, or else to the appropriation of goods produced by others,"[12] later recast into the now familiar "guns" versus "butter" metaphor and now a staple of economics textbooks. In the late 1990s, conflict economics, having started out with much theorizing, became a vast empirical literature, especially on civil war (e.g., Collier and Hoeffler, 1998, 1999; Caruso, 2010b).

Although there already had existed a long-standing literature on the economics of terrorism, in the wake of the terror attacks of 11 September 2001 in the United States, economists in recent years have paid increasing attention to forms of politically motivated violence other than war and civil war and, with it, to the cost of security beyond the traditionally understood defense. This has branched to encompass aspects such as high-seas piracy as well as to security-related costs borne by firms and private households and therefore has begun to sidle up to the economics of crime, a well-established field of study. Huge outlays on security in the private and public sectors are the result of defensive, deflective, or avoidance behavior. Security is understood as "a state of freedom from danger or threat,"[13] be it at the personal or supranational level, and as such must be paid for. Seeking security signals intent to insulate oneself, one's family, and one's property and assets from harm. In essence, this amounts to risk management. Although insurance may bring some peace of mind, security is not peace, and **security economics** (Brück, 2005) is not peace economics.

3. Peace economics

The distinguishing characteristic of peace economics is its normative aspect (Caruso, 2010a): How *should* the world look like, and what can be done to bring about a progressively more stable, peaceful state of the world? We thus define our subject matter as follows: **Peace economics concerns the economic study and design of political, economic, and cultural institutions, their interrelations, and their policies to prevent, mitigate, or resolve any type of latent or actual destructive conflict within and between societies.** Peace economics self-consciously studies not only "what is," but also "what should be." This normative character has been emphasized by Isard (1994), Arrow (1995), Coulomb, Hartley, and Intriligator (2008), and others. Peace economics is ecumenical in welcoming a variety of intellectual approaches. For example, within the orthodox domain of rational choice theory, one goal of microeconomists might be to study the conditions under which individuals choose to allocate time and other resources to constructive or destructive ends and what switch in degree or kind of conditions would call forth a corresponding switch in behavior. For example, it is well established that individuals may fall into violent behavior

12. Pareto (1906 [1971], p. 341.
13. Ringel and Tishler (2011, p. 108).

because of poor or unjust economic conditions.[14] An economist might then be concerned with the political, economic, and cultural conditions that shape an individual's motivation and means to engage in destructive behavior. The example as told thus far is positive ("what is") and is filed under the rubric of conflict or crime economics. What pushes the example into peace economics is the normative aspect: to design institutions and policies that prevent, mitigate or resolve actual and potential destruction by influencing the choice behavior of individuals in favor of peace-creating habits. Peace economics thus openly welcomes and embraces one of the trenchant criticisms of orthodox economics: that behind the veil of positivism there lies a distinct normative view of the world.

Peace economics is not unlike engineering. The point is not merely to describe why bridges collapse or remain standing. Rather, the point is to derive and then apply principles such that only bridges will be built whose likelihood of collapse is near zero. Bridges are constructed in varying environments and to varying specifications. These include the soil is which a bridge is anchored, the wind velocities it is subject to, and the traffic it is expected to bear. Likewise, societies large and small operate in varying (and changing) environments. To be productive and to fulfill their economic purpose—the assurance of the livelihood of their population—they need to be built to varying specifications. Among these are the construction of institutions and policies that minimize or prevent contest and unproductive (that is, wastefully destructive) activity.[15]

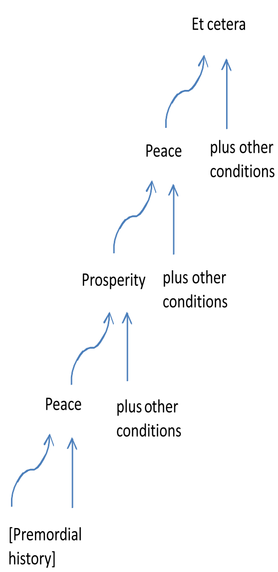

Figure 2: A vulnerable virtuous cycle.

Post-World War II, Kenneth Boulding put this succinctly: "The economic problem of reconstruction is that of *rebuilding the capital of society* ... Reconstruction is merely a special case of economic progress. If we are to understand its problems thoroughly, we must examine *what is meant by economic progress* and try to discover how it comes about" (our emphases).[16] By "capital" Boulding means assets, or things that, in time, yield income based on these assets. Human capital, of which formal education is one example, is one such asset. During periods of violence, its accumulation is delayed and its stock is depreciated or destroyed. Human capital needs to be rebuilt. Physical and financial capital are other forms of assets that need to be (re)constructed. Thus, peace economics becomes the centerpiece of development economics, and—as Boulding reminds us—of all of economics, for which society does not wish to progress further? For Boulding all economics *is* peace economics and all economists *are* peace economists[17]. Without development, there is no stable peace;

14. A classic reference on relative deprivation theory is Gurr (1970). On the evidence for an inverse relationship between economic conditions and political violence see, e.g., Sambanis (2004); Blomberg, *et al*. (2004). On the relationship between economic conditions and crime see, e.g., Neumayer (2005).

15. On productive and unproductive entrepreneurship, see Baumol (1990). On the economics of destruction, see, e.g., Vahabi (2011).

16. Boulding (1945, pp. 4, 73).

[17] Interestingly, Léon Walras nominated himself for the 1906 Nobel Peace Prize. He was convinced that the study of economics was a means to promote the peaceful fraternity of states. See Sandmo (2007).

without stable peace, there is no long-term progress. Prosperity is a necessary (but not sufficient) condition for peace, and peace is a necessary (but not sufficient) condition for prosperity see Figure 2.)[18]

Following from the previous point one issue, among others, pertains to the concept of stability. Like an engineer who wants to build a stable bridge, peace economists want to establish stable, peaceful social systems. Boulding (1978) differentiates among stable (continuous) war, unstable war (war punctuated by occasional peace), unstable peace (peace punctuated by occasional war), and stable (continuous) peace. In medieval Genoa, for example, a strategy of mutual deterrence adopted by rival clans continuously generated mutual increases in military might. But in the long-term, their arms race equilibrium became unstable, leading Genoa first to social unrest and then to civil war (Greif, 2006). As in game theory, peace economics is concerned with the conditions that underpin the existence, uniqueness, and stability of social systems. Evidently, social systems are unstable, or else they would not oscillate between war and peace. Hence, we label Figure 2 as a vulnerable virtuous cycle, and one objective of peace economics is to identify and to mend vulnerabilities in the system.

Peace economics is not opposed to conflict economics. On the contrary, peace economics takes the positive approach as its starting point—we do need to describe, "What is"—but then pushes into the normative arena as well. Rather than to stand aloof from application to policy, peace economics investigates and invests in application to policy. One example comes from the debate on the "democratic peace" versus the "capitalist peace" in which the statistical evidence by now favors the latter.[19] A normative implication is to let matters of political governance take care of themselves and, instead, attend to promote economic freedom: People who trade fight more rarely, regardless of the political arrangements of their societies.[20]

4. Peace economics for the twenty-first century

4.1 Conceptual framework

In a recent article, two researchers write that "peace agreements are fragile" (Bove and Smith, 2011, p. 257). Indeed, depending on how one measures, between one-fourth to one-half of all recent civil wars that ended in peace flared up again, within a few years' time, as war. Like engineering bridges, peace economics is not primarily about the prevention of failure (in the sense of suppressing failure) but about the creation of stable structures of peace. It is

18. Belatedly, the United Nations and the World Bank Group have accepted these conclusions. For example, only in 2009 did the United Nations General Assembly (UNGA) acknowledge that the Millennium Development Goals are impossible to fulfill in the absence of peace, and only in 2011 did the World Bank acknowledge, in its *World Development Report 2011*, that development cannot be achieved in the absence of peace. To quote the UNGA: "Although the linkage between armed violence and development is not explicit in the Millennium Development Goals, they offer entry points for development agencies to consider. Objectives such as reducing poverty, ensuring maternal health and promoting education are all associated with effective armed violence prevention and reduction initiatives. Nevertheless … there is no Millennium Development Goal that specifically deals with conflict, violence and insecurity" (UN General Assembly, 5 August 2009, item #33, p. 11, A/64/228).

19. See, e.g., Gartzke (2005); HSRP (2011, chapter 2).

[20] See Gasiorowski and Polachek (1982), Robst, *et al*. (2007).

about irreversibility, invulnerability, and the fool-proof, unconditional viability of peaceful social systems.

We can now outline our conceptual framework, and the role of peace economics within it, as follows. We define any community of any size as a social system. It consists of political, economic, and cultural domains. Violence is one way by which any domain and the social system as a whole can be threatened. We apply Galtung's distinction between negative and positive peace (see Galtung and Jacobsen, 2000). The former refers to the *absence* of direct violence, the latter to the absence of indirect or structural violence, that is, the *presence* of conditions that eliminate the causes of violence and establish enduring peace. With low levels of negative peace in any domain (that is, high levels of violence), the system can become infected, vulnerable, and "tip" into becoming unsustainable. It can collapse. To be sustainable, the system must be designed to be less vulnerable. Now define positive peace as social system sustainability (positive peace = social system sustainability). Sustainability is characterized by a threshold level of inoculation, or immunity from threat.[21] In principle, sustainability and its threshold can be measured with positive peace indicators of which there are very many by now, even if not universally agreed as yet. Successful positive peace efforts are captured by lower levels of violence, true, but the focus of these efforts does not lie with suppression of that which is destructive; rather, it lies with the upliftment of that which is constructive. The reason for this focus is that negative peace may result from mere repression of violence, leaving underlying causes of violence unaddressed. In contrast, positive peace redresses latent causes of violence to make violence superfluous and even unthinkable.

Negative peace, positive peace, and social system sustainability thus are linked within a common conceptual framework. The objective is to obtain hysteresis—a ratchet-effect—at each stage of successful institution and policy building so that there is no going back.[22] At each stage, achievements are locked in, irreversibly. An ever-higher degree of stability is achieved until a threshold is crossed, and an invulnerable end-state of a stable, peaceful social system is obtained. Peace economics enters this framework because of the definition we gave it: It concerns the economic study and design of political, economic, and cultural institutions, their interrelations, and their policies to prevent, mitigate, or resolve any type of latent or actual destructive conflict within and between societies.

4.2 Challenges

The challenges for peace economics are many. Here, we focus on three aspects. First, peace economists must contribute to the provision of better measures of positive peace. Second, peace economists must re-engage in the discussion about what counts as "progress." Third, peace economics must recover and reclaim its own visibility within economics!

Measurement of social phenomena depends upon the definition of the phenomenon itself. Definitions of peace

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21. Note our choice of "inoculation" and "immunity" over the more common term "resilience." Resilience is a biological term that refers for instance to an ecosystem's ability to bounce back and recover after collapse. But one does not want societies to collapse in the first place; one wants immunity to collapse so that resilience will not be necessary. "Resistance" would be a better term than "resilience."

22. Hysteresis is the dependence of a system state on its own history.

range from cessation of hostilities to the establishment of a just society. As noted, some definitions emphasize the negation of a status (especially of war); others highlight positive components of a peaceful environment. With Galtung, we refer to the first as 'negative peace' and to the latter as 'positive peace'. Both need to be measured, but the measures needed are different. Measurement of negative peace and its effects can refer to a counterfactual state of the world wherein hostility did *not* take place. For example, negative peace is, for now, the conceptual basis of the Global Peace Index (GPI), developed by the Institute for Economics and Peace (IEP), in Sydney, Australia. Presently, the GPI is a combined score consisting of measurements of 23 internal and external indicators mostly related to the absence of or threat to peace. This includes, for example, factors such as levels of violent crime, levels of military expenditure, and weapons availability.[23] But the ultimate goal must be to develop a comprehensive and coherent set of positive peace (social sustainability) measures. Once an initial set of such measures exists, the operational key will be scalability, that is, indicators that can be collected for any arbitrarily-sized community, from village to nation. One problem is that if indicators are overly community-specific, it is unlikely that they can be generalized across all communities. A way around this is to start with top-level indicators, common to all communities, and then scale down to community-specifics by way of "satellite" measures. Because of their training related to data and data analysis, peace economists can make a useful contribution here.

A second fundamental issue relates to Boulding's warning about "what is meant by economic progress," as some varieties of progress can lead to the very chaos and violence that genuine economic progress is meant to prevent. As the International Monetary Fund has belatedly learned, economic growth at all cost will not do: For example, questions about equity of progress invariably enter the picture.[24] At any given point in time, the state of a social system is the outcome of past interactions among political, economic, and cultural domains. It follows that the economic study of institutions and policies then has to take into account things that exceed the usual, narrow boundaries of economics. This makes peace economics a branch of economics enriched by contributions from many fields of study such as philosophy, politics, mathematics, psychology, and sociology. Unlike orthodox economics, peace economics is not obsessed with narrowly applying rational choice theory and its tools. Peace economics does not deny the relevance and usefulness of orthodoxy, but nor does it view orthodoxy as the only way to do science. Interdisciplinarity makes peace economics part of a broader peace science (Isard, 1988).

Third, peace economics needs to recover and reclaim its standing within economics itself. In this regard, it is helpful to list an alphabetized sample of great economists who have devoted considerable effort to think and write about the economics of peace, often in book-length treatments. It includes Kenneth Arrow, Kenneth Boulding, F.Y. Edgeworth, John Kenneth Galbraith, John Harsanyi, Michael Intriligator, Walter Isard, John Maynard Keynes, Lawrence Klein, Wassily Leontief, Friedrich List, Karl Marx, Roger Myerson, Douglass North, Mancur Olson,

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23. Relating the GPI to economic indicators, Brauer and Tepper Marlin (2010) compute an increase in world economic output by about 9 percent, for the year 2007, consequent upon a simulated counterfactual state of complete worldwide nonviolence. Similarly, for 1960 to 2000, Caruso (2003) estimates the loss of potential gains from international trade for the United States because of sanctions—a form of economic violence—it imposed on potential trading partners. He estimates that in the counterfactual absence of sanctions, trade volumes between the United States and the unilaterally targeted countries would have been larger by 59 percent.

24. See, e.g., Del Castillo (2008); Brauer and Dunne (forthcoming).

Vilfredo Pareto, A.C. Pigou, David Ricardo, Lionel Robbins, Joseph A. Schumpeter, Werner Sombart, Thomas Schelling, Adam Smith, Joseph Stigliz, Jan Tinbergen, Thorstein Veblen, Léon Walras, and Knut Wicksell—a surprisingly diverse assembly.[25] Nonetheless, workaday economists today do not appear too much concerned with questions of peace, perhaps because they really do assume, as Boulding implied, that all economics *is* peace economics. Still, if the relevance of a subfield in economics is attested to by inclusion in the *Journal of Economic Literature* (JEL) classification scheme, then something is amiss. Work related to peace economics is captured mainly in subject codes D74 (conflict; conflict resolution; alliances), D78 (positive analysis of policymaking and implementation), and H56 (national security and war). As yet, there is no descriptor for peace economics as we have defined it. Nevertheless, peace economists today can count on a number of specialized outlets that consider their work, including the *Journal of Conflict Resolution* (since 1956), the *Journal of Peace Research* (since 1964), *Conflict Management and Peace Science* (since 1973), *Defence and Peace Economics* (since 1990), *Peace Economics, Peace Science, and Public Policy* (since 1993), the *Economics of Peace and Security Journal* (since 2006), and the *International Journal of Development and Conflict* (since 2011). Peace economics is a growing field of study.

5. Summary

In sum, we assert that while founded on positive precepts, peace economics is distinct for its normative character. Its focus lies on an economic understanding and of putting in place political, economic, and cultural structures that would prevent any type of violent conflict and its adverse consequences. Peace economics is about the maximization of positive peace rather than about minimization of negative peace.

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25. This is a slightly amended list taken from Brauer and Dunne (2006).

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