Escalating International Conflicts: Is There Anything Economists Can Do?

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Abstract

We are seeing sharp escalations of international conflicts in various parts of the world. Israel's genocide in Gaza and its invasion of Lebanon and Syria, the Russian war in Ukraine, the US threats against China, and the civil war in Sudan stand out, but there are myriad additional conflicts escalating elsewhere too. We naturally wonder what could stop these escalations in violence, destruction, and death? In this paper, we specifically ask what economists could do to reduce the conflicts and foment peace. Unfortunately, mainstream neoclassical economics, with its assumptions of market efficiency, is very poorly equipped to deal with conflict. Game theory offers more scope for addressing conflict, as in the case of Axelrod's prisoner's dilemma tournament, but the arbitrariness of its specifications makes definitive conclusions impossible. However, the differences in outcomes between one-time and repeated games suggests a long-term perspective is more conducive to peace. Some game theorists suggest supplementing game theory with a focus on institutions to capture the complexity of international conflicts. We argue that economists' best strategy for peace is to embrace the methodology of materialist dialectics, which is at the same time dynamic, historical, systemic, and institutional. Most importantly, materialist dialectics focuses on the continual emergence of conflicts, stresses, and contradictions within moving complex systems, a more realistic framework of analysis within which to assess the possibilities of peace.

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I. Introduction

Even a short glance at news headlines today reveals numerous conflicts throughout the world. Many of these conflicts seem to be escalating into more violent and deadly wars. We are today observing the government of Israel carrying out a genocide live on television in Gaza and now also Lebanon and Syria. We also watch the devastating conflict between Russia and Ukraine, the expanding threats against China by the US, and numerous conflicts in Africa. Surely you have wondered how this persistent escalation of violence could be interrupted and peace re-established.

Unfortunately, history suggests that war, conflict, mass murder, and genocide are a common state of human affairs. Peace can prevail over extended periods of time, but there have been few human societies in which violence has been completely eliminated. We humans do not always "give peace a chance." But, what can we do to rid humanity of the recurring plagues of violence, cruelty, genocide, and oppression? In this paper we will ask a more focused question: What can we economists do to reverse the spirals of violence and shift government policies toward peace?

II. How Economists Think about War and Peace

The field of economics is not well positioned to deal with conflicts of any type. The field of economics has difficulties analyzing war and other escalating conflicts because, for more than a century, most economists have modeled an economy as a complete system of efficient markets in which the competing interests of suppliers and demanders are consensually and peacefully reconciled by merely adjusting some prices and quantities. The great accomplishment of mainstream Neoclassical economics is to show that with a detailed list of strong assumptions and

the application of mathematical logic, self-interested consensual market interactions can be shown to optimize society''s total well-being. Beginning with Léon Walras (1873) and other early Neoclassical economists, through Arrow and Debreu (1954), Debreu (1959), and finally Ferguson (1972) and McKenzie (1981), the most popular economic models have depicted the capitalist economic system as a general equilibrium system in which individuals with conflicting interests interact to maximize their individual well-being. War, violence, oppression, exploitation, and other forms of open conflict are viewed as alien aberrations or exogenous shocks unrelated to the fundamental behavior of the assumed economic system and thus outside the domain of economic theory. In sum, economists are functionally and intellectually unprepared to address issues like war and peace.

Some exceptions

This is not to say that all economists restricted their analysis to such an idyllic world of stable equilibria, optimal production levels, and non-violent market interactions. Karl Marx, for example, saw the capitalist economic system as a battle over the surplus with clear winners and losers, and battle that the proletariat was losing and the bourgeoisie was unjustly winning. He predicted a social revolution in which the working class would seize all of the means of production. At the start of the 20th century, Thorstein Veblen (1899, 1904, 1917, 1923) described the various forms of market behavior as anything but peaceful or mutually satisfying to most people. In 1920, John Maynard Keynes famously published *The Consequences of the Peace* to argue that the Paris Conference of 1919 had created economic and political conditions that were more likely to result in another major war rather than a lasting world peace. And heterodox

economists today continue to address inequality, exploitation, discrimination, monopolization, financialization, and numerous other variations in human interactions that do not fit the Neoclassical general equilibrium framework.

Thinking beyond the self

A fundamental failure of economics has been to oversimplify the behavior of human beings. Human beings are complex creatures. On the one hand, they tend to look out for themselves, and they often seem to favor their own interests over those of others. On the other hand, human beings are group animals who are not only very aware of their status within their group, but they are quite capable of sacrificing their own immediate interests in favor of the well-being of the group.

The evolutionary biologist, Edward O. Wilson (2014) points out that humans are somewhat unique. Most species tend to be either almost entirely social — like ants, bees, termites — so that individuals almost never deviate from their particular social functions, or they tend to be entirely individual to where each living organism pays no attention at all to others or the social consequences of its actions. Wilson claims that the only possible explanation for this dual individual and social meaning of human life is that humans evolved along dual paths of natural selection: individual and group selection. That is, there was competition among individuals inside the group as well as competition among groups. The competition among individuals is clear, but once the formation of groups began to give such organized individuals a natural advantage over disconnected individuals, group competition began to bring about survival of the fittest groups. In the process humans ended up neither entirely individualistic nor entirely group

subservient. Our mixed individual/social interests imply that decisions require huge amounts of information about other people, their situations, and their likely reactions to our actions. We needed to think abstractly to deal with such complexities, and such abstract thinking required brain power. Those with the biggest brains were more likely to survive in the complexity of human society that also give their group an advantage over less complex groups, thus the evolutionary process of natural selection expanded human brains. This evolution of the human brain occurred very rapidly, over a period of just a few million years, as indeed it had to in order to avoid group failures that would throw humans back into a state of either complete individualism or group subservience.

Wilson (2014, p. 75) suggests that this dualistic evolution has been advantageous for humanity:

> The origin of the human condition is best explained by the natural selection for social interaction—the inherited propensities to communicate, recognize, evaluate, bond, cooperate, compete, and from all these the deep warm pleasure of belonging to your own special group. Social intelligence enhanced by group selection made Homo sapiens the first fully dominant species in Earth's history.

Interestingly, Wilson also argues that the conflict between "self" an "us" is what gives our lives meaning. This conflict also gives us some space for exercising free will; we are neither completely selfish in that we strictly base every decision on a neat calculation of cost and benefit, nor do we completely fall in line with what our society prescribes. Humans seem to judge their own success in life by, on the one hand, the satisfaction of individual needs and wants, and, on the other hand, by their status within a peer group, within a culture, and within a whole society.

A large body of evidence from many different fields suggests that the value that humans attribute to the satisfaction of individual needs versus their group needs varies greatly. Among the determining factors are culture, social position, and experience. Some societies are more interested in the common well-being than others. The variability in human behavior translates into variability in the success of groups of individuals. A healthy community, nation, or world requires a certain amount of cooperation among its members. Cooperation can occur, not only within a group of individuals who often or mostly act as self-centered individuals, but among groups or nations of individuals who pursue group interests.

This complex human behavior is not well represented by models that assume, as general equilibrium models do, that all human interactions occur in markets. One popular alternative set of models of human interaction that have been developed to capture more of the complexities of human behavior is the field of game theory. We examine game theory in the next section.

III. Using Game Theory to Model Conflicts

Michael Richter and Ariel Rubinstein (2024, p. 1) contrast market models and game theory:

> Almost all models of interaction between agents in current Economic Theory belong to one of two families: Markets or Games. In market models, there are conflicts over limited resources that are resolved through the emergence of prices, which are taken as given by the agents. These prices bring order to the economic chaos by orchestrating the behaviour of selfish agents. In game-theoretical models, each agent (player) chooses a strategy, and an equilibrium is a profile of strategies such that each agent's strategy is individually optimal, given the correct prediction of other players' behavior. In other words, in a market, each agent chooses his best alternative given the prevailing prices, while in a game, each agent chooses his best strategy based on correct forecasts of what other agents intend to do.

An interesting application of game theory is the tournament organized by the economist Robert Axelrod (1984), in which economists and other social scientists were invited to play each other in the *Prisoner's Dilemma* game. This game involves two prisoners suspected of having jointly committed a serious crime, but the authorities do not have sufficient proof to convict them in court. Before they are forced to release the suspects, the police devise an interesting strategy to entice one or both of the prisoners to confess to the crime. They isolate each prisoner is isolated from the other and offer each a light sentence of one year in prison in exchange for confessing and implicating the other. If the prisoner admits nothing, but the other takes the offer, the silent prisoner will be sentenced to ten years in prison. If both prisoners remain silent, both will go free, clearly the optimal outcome for the prisoners, but if the two prisoners do not trust each other to remain silent, the optimal strategy for each individual seems to be to confess and at least avoid the onerous ten year prison term.

Note that the prisoner's dilemma game is not a simple zero-sum game in which the gains for the winner come directly from the losses of the loser. Depending on how they interact, both players can win or they can both lose. This characteristic of the prisoner's dilemma game makes it quite relevant for strategic decisions made in an interdependent system such as an economy.

3.1 Tolerant tit for tat

The likely choices of the prisoners will most likely differ depending on whether the players play once or they play repeatedly. In a repeated game, the players have time to build, or destroy, trust. Axelrod's tournament consisted of repeated games, a series of 200 repetitions to be exact. The player who accumulated the least amount of jail time over the total all of the series of 200 games

played with each of the 28 other players was declared the winner of the tournament. The winner of the tournament was Anatol Rapoport, a mathematical psychologist. He played the game according to the strategy known as *tolerant tit for tat*:

1. Unless provoked, cooperate with your fellow prisoner and remain silent.

2. If the other implicates you, retaliate by doing exactly the same thing to the other player in the next round.

3. After retaliating in kind, forgive and cooperate again in the subsequent round.

The term *tit for tat* implies that a player responds by doing to the other exactly what the other did to her in a previous round. Thus, one player's silence and refusal to confess triggers similar behavior by the other player the following round. A violation of trust leads the other player to punish the uncooperative player by confessing and implicating the first player in the following round, which pushes both players to worse outcomes. The game's strategy is *tolerant* because, after one tit-for-tat punishment, a player goes back to *not confessing* and thus risking the worst outcome in the hope that the other player has come to see the futility in confessing and instead decides to remain silent in the future.

The tolerant tit for tat strategy's win at the tournament surprised many participants. They had expected that tolerant tit for tatters would be exploited and repeatedly made to serve ten year jail sentences. Those who were surprised should, perhaps, have realized that the prevalence of tolerant tit for tat rules across all cultures throughout history suggests that strategy has indeed been found to work in many contexts. Evolutionary biologists have, in fact, discovered that many animal species follow the rules of tolerant tit for tat. There is also ample evidence showing that humans are hard-wired to not only accord some degree of trust to others, but also to retaliate

when others do not cooperate and then, at a later date, to forgive and move on. For example, most people naturally smile when they meet a stranger for the first time, which is a sign that they are naturally inclined to start the game with a cooperative strategy. At the same time, people feel anger when someone takes advantage of their tolerance; for example, people get very angry when someone cuts into a waiting line, cheats on an exam that they did not cheat on, or violates what they perceive as the "rules of the game." Such anger serves a useful purpose; if there was no "tit for tat" retaliation, violations would quickly escalate, and all would suffer. However, to keep society in a cooperative mode, retaliation to violations of the social rules of the game must be proportional to the violation. Overreaction causes a conflict to escalate, which makes a return to mutually beneficial cooperation more difficult.

Psychological studies also show that humans have an innate biological tendency to forget and forgive others. The fact that evolution has instilled in people a willingness to forgive others suggests that this is a useful social behavioral characteristic for maintaining group cohesion and permanence. After all, in nature numbers are important for survival of the group. The tit for tat strategy is also recognized in international law, which adheres to the principle that countries cannot initiate a war, but they are justified in retaliating against those who violate that principle. The tit for tat strategy also effectively describes Cold War nuclear policy, where the United States and the U.S.S.R. each promised to refrain from using its weapons so long as the other also refrained. It worked because the consequences of first strike and a promised retaliation were so awful. Both sides apparently clearly saw that an attack would be devastating to everyone in both countries and probably the rest of the world.

3.2 Yet, vengeance and disproportionate responses are really common throughout history

Proportionality is important for avoiding escalation of conflict because when the retaliation exceeds the damage done by the initial deviation from cooperation, the overreaction will tend to be perceived as the sum of a "fair" response plus a new violation that must then be retaliated against. Hence, disproportionate retaliation tends to escalate a conflict. Unfortunately, disproportionate retaliation is common throughout history. One such historical example of excessive retaliation is the imposition of reparations payments on Germany by Britain and France at the end of World War I even though it was not entirely clear that Germany was more to blame for the war than many of the countries allied with the declared victors. Adolph Hitler later exploited this injustice in his political campaigns and later on used the issue to gain domestic political support for rearmament and eventual war. On the other hand, the willingness of the allied countries to forgive and invite their adversaries, Germany and Japan, into the Western coalition after World War II resulted in a long period of cooperation and peace. There is also the more recent example of the US alleged retaliation against Iraq after the September 11, 2001 terrorist attack on the World Trade Center in New York. The United States' violation of the tolerant tit-for-tat strategy has left Iraq, and the entire Middle East with continued violence. Another obvious example of how disproportionate responses lead to escalation is the expansion of Israel at the expense of Palestinians after 1948. 2009 Israeli attack on Gaza, which killed 1,350 Gazans, represents another violation of the tit-for-tat strategy.[2] The Israeli attack was allegedly in retaliation for home-made rockets launched by Gazans which did only minimal damage in Israel. Israel's disproportionate response of killing 1,359 Gazans appears to have been

[2] FAIR (2009), "The Blame Game in Gaza," Media Advisory by Fairness & Accuracy in Reporting, January 1.

intended to escalate the conflict. And sure enough, there was eventually a more serious retaliation by Gazans in 2012 that killed 6 Israelis, and the Israeli army responded by killing 158 Gaza's. Then in 2014, insurgents in Gaza attacked and killed 67 Israeli soldiers and 6 civilians, and Israel responded by killing more than 2000 Gazans, two thirds of which were civilians. Well, you get the picture. Israel was not seeking justice, but escalation. Today in Gaza, Lebanon, and Syria we see how far that escalation has spiraled out of control.

3.3. Results of another tournament

The Prisoner's Dilemma tournament was repeated in 2004, on the twentieth anniversary of Akerlof's original tournament.[3] The rules were changed somewhat: participants were allowed to enter more than one player in the competition so that players could form coalitions and carry out pre-arranged joint strategies with other players. A team from Southampton University in the United Kingdom entered the computer tournament with a large set of players, one of which won the tournament while most of its teammates ended up at the bottom of the standings. This time the winner was not a tolerant tit for tatter.

The Southampton players preformed as a team. They were programed to perform certain initial moves that enabled them to recognize each other. One assumed the role of "master", the rest were "slaves" programmed to sacrifice themselves for the benefit of the masters. Whenever a slave player did not recognize the other player as a Southampton player, it would immediately play the role of spoiler and do a lot of damage to the other player by repeatedly not cooperating. When it recognized its "master," it would repeatedly allow the master to exploit them. The lesson

[3] Reported in Wendy M. Grossman (2004), "New Tack Wins Prisoner's Dilemma," *Wired*, October 13.

to be drawn from the 2004 competition is that when players do not play the game as equals, such as when there is oppression or enslavement by some players, a small number of players can achieve a higher score than they could by playing a tolerant tit-for-tat strategy, but such a win for the master comes at a devastating expense to both opponents and slaves.

The past 500 years of imperialism and colonialism provide many examples of forced subservience and oppression of some players in the global economic system. Imperial powers often forced or corrupted leaders in colonies and dominated regions to sacrifice the interests of their fellow citizens and, instead, serve the interests of the foreign imperialists. The colonists gained cheap resources, a captive market for their industries, soldiers for their colonial armies, and relatively high incomes for their home populations. While it may have been rational for the European colonial powers to colonize and oppress, the overall worldwide gains from human interaction were not optimized under the economic strategy of colonization.

In applying these results to the real world today, we are tempted to ask to what extent transnational corporations (TNCs) and international financial institutions are designed to behave like colonialists. TNCs use their economic and political clout to gain military protection and to shape institutions in their favor, thus effectively assembling a team of international players who act as masters and slaves to promote the interests of the masters (TNCs) at the expense of labor, smaller competitors, and consumers.

3.4. Some tentative conclusions

The key lesson learned from Axelrod's and other game tournaments is that in a repeated game context, conflicts can be ended, sustained, or escalated, depending on how opposing players

respond to the other's actions and reactions. Players' actions also depend on the rules of the game — institutions matter. There are also the potential gains and losses, the preferences of each player for peace, revenge, or conquest, and, of course, the perceptions — or misperceptions — of the institutions, gains and losses, and preferences of other players. For example, the observed fact that people have some sense of justice vs. injustice plays an important role in determining how the players react to each other's actions. At the same time, our understanding of human nature iscritical to how repeated human interactions evolve over time. In formulating group strategies both individual behaviors and collective actions must be dealt with, and we must do so with an imperfect information set.

Axelrod (1984) interprets the results of the first tournament as suggesting that deescalation and peace are most likely when conflicting groups behave as follows:

1. *Don't be envious* - Because most games are not zero-sum games, do not compare your own outcomes directly to your opponent's outcomes; rather, judge the situation by asking how much each possible game strategy improves your own situation.
2. *Do not be the first to defect* - Because trust or predictability are important underlying characteristics of mutually beneficial repeated games, being "nice" from the first encounter onward avoids future conflicts.
3. *Reciprocate both cooperation and defection* - Responses of equal severity and magnitude to the consequences of others' actions seems to satisfy a sense of fairness that builds trust and predictability.
4. *Don't be too clever* - Cooperation is more easily achieved when each player is clear about her intention; uncertainty makes your opponent less willing to risk cooperation.

We should add that another very important factor for the success of the benevolent tit for tat strategy was that it was applied in a repeated game; players had time to establish a reputation, and focus on a strategy for the long term.

Following Axelrod's tournament, there was great enthusiasm about forging peace agreements. But we must recognize that Axelrod's conclusions are drawn from playing the prisoner's dilemma game under one particular set of rules and conditions. When the rules changed in the later tournament, being nice, transparent, and predictable did not win.

3.5. What can game theory really tell us?

There is a basic problem with game theory: Conclusions are entirely driven by the rules of the game, and the designer of the game can set any rules he wants. Robert Skidelsky (2024, p. 5) notes after examining the general assumptions routinely made by two of the most prominent originators of game theory, Oscar Morgenstern and John von Neumann (1944):

> The flaw in game theory is obvious enough: it presupposes perfectly rational and logical agents, interested only in winning (maximizing their utilities), who possess a perfect understanding of the rules, a total recall of all past moves, and a flawless awareness of the ramifications of their own and of their opponents' actions at every single stop in the game. It did not take a Keynes to point out that this is not normal.[4]

[4] Interestingly, in 1946 von Neumann designed a designer of the first computer powerful enough to handle the calculations needed for creating a hydrogen bomb, the Mathematical Analyzer, Numerical Integrator and Computer: MANIAC. At a conference in 1956, he argued: "You insist that there is something a machine cannot do. If you tell me precisely what it is a machine cannot do, then I can make a machine which will do just that." That was the beginning of artificial intelligence (AI).

The fact is that game theorists have been making the same very unrealistic assumptions about human behavior in game situations that Neoclassical economists have been making about human behavior in an idealized market system. Interestingly, the contemporary game theorists Michael Richter and Ariel Rubinstein explicitly seek "to disrupt the convention that every economic model should be either a market with prices or a strategic game."[5] They urge economists to focus more on the roles that institutions play in the economy. We take their advice in the next section.

4. Institutions, History, and Materialist Dialectics

A society's institutions are a complex mix of moral principles, social traditions, ethnic customs, informal cultures, formal laws and regulations, and many other rules and norms that guide human behavior. What is important to note is that, as Thorstein Veblen, the founding father of the American Institutional school of thought, famously pointed out, institutions institutions are historical and the result of a gradual process of accumulation. Because they are intimately related to the social, economic, and ecological systems in which humans live and work, they continually evolve in response to social, economic, natural, and technological changes. Veblen thus urged his contemporary mainstream economists to abandon their acceptance of "the notion of a definitive normality" in favor of a "habit of mind which seeks a comprehension of facts in terms of a cumulative sequence."[6] He was even more to the point in his first work, *Theory of the Leisure Class* (1898, p. 391):

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[5] From "A Personal Note" at the start of Richter and Rubinstein (2024).
[6] Thorstein Veblen (1906), "The Socialist Economics of Karl Marx and his Followers," *The Quarterly Journal of Economics*, Vol. XX, August. Veblen

> The economic life history of the individual is a cumulative process of adaptation of means to ends that cumulatively change as the process goes on, both the agent and his environment being at any point the outcome of the last process. His methods of life to-day are enforced upon him by his habits of life carried over from yesterday and by the circumstances left as the mechanical residue of the life of yesterday.

Institutions are the result of people's struggles and adjustments to changing economic, social, and natural conditions, but people's changing behavior again, sooner or later, changes their institutions, which then feeds back into their economic, social, and ecological conditions. But there are timing inconsistencies all along the way. Veblen argued that the historical evolution of institutions generally lagged the real material changes in the economic system brought about by technological change and capital accumulations, and in his many works he explained how the resulting conflicts between the material world, human thought, and the institutional guidance for human behavior provided powerful feedback that, in turn, shaped the evolution of human society and its economic system.[7]

Given the complex movement of the economic, social, and ecological systems, it seem obvious that economists should abandon their dependence on static models and, instead, develop and adopt more dynamic analytical methodologies. And in reference to our purpose in this paper, a dynamic perspective would also be more appropriate for analyzing the escalation over time of conflict, violence, and war. One especially promising methodology for capturing the continual evolutionary movements of our interrelated economic, social, and ecological systems is *materialist dialectics*.

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[7] For example, see Veblen, 1904, 1914, and 1923.

A brief introduction to materialist dialectics

The concept of *dialectics* dates from ancient Greece and philosophers such as the Stoics, Plato, and Aristotle, who advocated *dialogue* as the best method for finding the truth about some phenomenon or issue. Unlike a *debate* or *rhetoric*, dialogue or *dialectics* involved an objective back and forth of ideas during which all the participants could flesh out the details, the contradictions, and the missing pieces in order to get closer to the truth of a matter. All participants may end up changing their views and understanding of the subject under discussion. In the early 19th century, the German philosopher, Georg Wilhelm Friedrich Hegel essentially adapted Socrates' argument that human knowledge naturally evolves according to a dialectic process as people struggle find answers to various problems, conflicts, inconsistencies, and gaps in their knowledge of their world. Hegel's description of how human ideas about the world change and shift over time is commonly referred to as *idealistic dialectics.*

The 19th century economist, Karl Marx, combined the idealistic dialectics of Hegel with the *materialism* of the 16th century Dutch philosopher Baruch Spinoza and the 19th century German philosopher Ludwig Feuerbach to arrive at *materialist dialectics.* Unlike Hegel, who focused on how human thought interpreted the material world, Marx argued that the real (materialist) ecological, social, and economic structures in which people live also evolve dialectically in response to the stresses, conflicts, contradictions, and openings for action. These material dialectic stimuli emerge as populations grow, capitalists accumulate capital, technologies change the processes of production, new generations modify cultures, political choices change formal institutions, and all other interrelated complex systems move in contradictory directions, at different speeds, and with different intensities. Marx argued that human thought evolves in

response to these real evolutionary changes. Therefore, Marx urged social scientists to stop seeking constant relationships in an assumed constant and unchanging system and, instead, look for the conflicts and contradictions most likely to alter the ever-changing economic, social, and ecological systems. Engels (1939, p. 155) described dialectics as "nothing more than the science of the general laws of motion and development of Nature, human society and thought."

Viewing the world as a dialectically changing system greatly complicates economic analysis. In an economic or social system in which so many dynamic processes and accumulations interact in complex ways, relationships between any subset of variables are conditioned by the changing states of all the other variables, relationships, and accumulations, the structure of an economy or social system is never the same across different times and places. This is not to say that there are no universal "laws" that govern the actions and reactions of humans, or that there is no pattern to the overall movements of the economic, social, and natural systems in which humans live and act. But materialist dialectics requires the social scientist to look for the capabilities, forces, and conditions that make the system change rather than the characteristics of stable or equilibrium relationships. Friedrich Engels ([1883]1940), for example, points out that people are endowed with consciousness, they act with deliberation or passion, and they usually work towards some vague set of goals. But deliberate individual behavior does not neatly translate into predictable aggregate outcomes in a complex dialectic system. Individuals have different experiences, education, status, and levels of wealth, so they will not all make identical choices. And, of course, the complexity of economic and social systems, and their evolution, means that aggregate outcomes are never the simple sum of the desired outcomes of its individual members. Wrote Engels ([1883]1940): "in spite of the consciously desired aims of all individuals, accident

apparently reigns on the surface. That which is willed happens but rarely." One obvious conclusion that emerges from the embrace of dialectics is that no static model can ever accurately describe economic relationships across all times and places. This is certainly the case for economic systems.

Marx, however, looked at the world through "a single science" in which "the dialectic of change subverts all reductionisms."[8] Or, in the language of mainstream economics, all aspects of human evolution are *endogenous* to an ever-evolving complex multi-layered economic/social/ natural system. But he also described the dialectic process as possessing a an "arrow of time" because it caused the emergence of irreversible transformations. That is, the complexity of sequence of conflicts, stresses, contradictions, and opening of the ongoing processes of change in our ever-changing systems makes it effectively impossible to reverse history. This irreversibility of the dialectic progression of our human existence is very relevant for our search for peace. How do we achieve a peaceful world after centuries of war and the accumulation of the technologies, tools, organizations, cultural adaptations, and all other changes that have equipped us to violently conduct war? Especially worrisome is the accumulation of the damages of war: Can we ever forgive and forget what others have done to us in the past and not seek retribution or vengeance?

5. Dialectics and Peace: Some Considerations

Getting back to our question of how economists could be more helpful in finding a peaceful ending to the current escalation of international conflicts, we must proceed with humility. First of

[8] As dialectics is described by John Bellamy Foster, Brett Clark, and Richard York (2010), p. 247

all, economists are not normally asked to help bring peace to the world. A few offered their services — e.g., Keynes after the Versailles Conference — but they were largely ignored by those with the power to change the politics. The economics profession continues to look at the world largely through static models that assume efficient markets in which an invisible hand reconciles everyone's wants and desires in an optimal fashion. Our political leaders, the corporate captains of industry, the bankers, and the wealthy class in general show little interest in reconciling their wants with anyone else's interests. They have enjoyed a lifetime of getting their way. And, when they perceive threats to their privilege, they do not hesitate to use their wealth to protect themselves. There is thus a real rift between the culture of economics, which assumes harmonious market interactions, and the reality of a modern capitalism that is based on monopoly power, a compliant workforce, broad institutional support, and, if necessary, military force.

Game theory can give us some insight into the conflicts within the global economic system, but that insight does not necessarily lead to peace. We can easily imagine games justifying war. Games do not change the reality that guides human behavior toward conflict and violence. Nor does the study of institutions bring peace. The study of institutions is very likely to focus more attention on how governments, organizations, business firms, and other groups can manipulate the development of institutions in their favor, and when such groups enjoy disproportionate power, the institutions will be shaped to permit oppression, accumulation, and exploitation. However, alternative perspectives on our economic, social, and ecological systems do undermine, at least somewhat, the very damaging rhetoric of neoliberalism that the economics profession has so conveniently provided.

As economists, we cannot defeat the capitalist hegemony in combat, but we *can* take away the faux moral justifications of capitalism and make life a bit more difficult for the exploiters and imperialists. To do this, we need to redesign our paradigm, our stories, and our models to more accurately and honestly reflect the real world. I will conclude by arguing that economists' best strategy for peace is to embrace the methodology of materialist dialectics, which is at the same time dynamic, historical, systemic, and institutional.

A Materialist dialectic perspective can contribute to peace for a variety of reasons. First of all, recall how cooperation became more likely in a repeated prisoner's dilemma game compared to a one-time confrontation with an opponent. Once economists view the economic system historically and as part of greater social and natural systems that continually evolve and change, economists will be less inclined to use static models and believe in the permanence of timeless relationships or unrealistic market institutions. Seeing history as a sequence of events, each triggered by the continual emergence of conflicts, stresses, contradictions, and openings for action, makes it a bit more difficult to talk about "unprovoked" attacks, national "greatness," or meritocracy. Dialectics add context that static perspectives obscure. The historical perspective, if seriously pursued, reveals a treasure of ideas and experience with international conflict. History is an immense data bank that economists can use to specify, apply, and test new ways to achieve peace. Of course, the recognition of the dialectic movement of social systems also makes it very clear that harmony is not automatic.. History is full of escalations of violence from seemingly inconsequential initial conflicts. And how many nations have been able to resist foreign aggression for economic or political gain when they enjoyed a clear military advantage? Intentional human actions are required in order to achieve peace.

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