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From hatred to genuine peace: a dynamic formulation of conflict resolution

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This paper highlights the role of hatred and its evolution in determining the nature of peace between groups, or nations, after reaching, and while implementing, truce. It proposes that weak inertia, diminishing memory of hatred and low propensity to reciprocate hatred are essential for reaching a genuine and stable peace. In the case of mutual abstinence from violence, genuine peace process prevails if both groups have sufficiently weak inertia and strongly diminishing memories of hatred and low proponsities to reciprocate hatred. When these conditions are not satisfied, genuine peace may still be reached if one of the groups has weak inertia and strongly diminishing memory of hatred. Strong inertia, persistent memories of hatred and high propensities to reciprocate hatred are obstacles for reaching genuine and stable peace between groups and nations.

Keywords

From, Hatred, Genuine, Peace, Dynamic, Formulation, Conflict, Resolution

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From Hatred to Genuine Peace:

A Dynamic Formulation of Conflict Resolution

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Abstract

This paper highlights the role of hatred and its evolution in determining the nature of peace between groups, or nations, after reaching, and while implementing, truce. It proposes that weak inertia, diminishing memory of hatred and low propensity to reciprocate hatred are essential for reaching a genuine and stable peace. In the case of mutual abstinence from violence, genuine peace process prevails if both groups have sufficiently weak inertia and strongly diminishing memories of hatred and low propensities to reciprocate hatred. When these conditions are not satisfied, genuine peace may still be reached if one of the groups has weak inertia and strongly diminishing memory of hatred. Strong inertia, persistent memories of hatred and high propensities to reciprocate hatred are obstacles for reaching genuine and stable peace between groups and nations.

Keywords: Conflict; Hatred; Inertia; Compassion; Genuine peace

1. Introduction

In many regions and countries the population is divided by factors such as origin, culture, religion and race into rival nations, or groups. Conflicts between these nations, or groups, constitute a major aspect of their coexistence. The literature on conflicts between nations (external conflicts) stresses political and economic factors that may influence the likelihood of wars. For instance, Grafinkel [8] has studied the interactions between domestic politics and international conflicts and argued that political party competition associated with electoral uncertainty leads to a decline in military spending, and that democratic institutions can be thought of as a possible "pre-commitment" mechanism that moderates conflict between nations. Hess and Orphaniedes [11] have disputed the idea that democracy and democratic institutions

moderate conflicts and frequency of wars between nations. Bearce and Fisher [1] and Dorussen [5] have argued that there is an inverse relationship between trade and war. Nafziger and Auvinen [12] have shown that income inequality and pervasive rent-seeking by ruling elite are linked to war. Hess and Orphanides [10] have stressed the role of recessions in triggering external conflicts. The literature on violent conflicts between groups (internal conflicts) has emphasized the roles of political-economic factors, ideology, ethnicity and religion. For example, Blomberg and Hess [2] have argued that recession combined with external conflict increases the probability of internal conflict. Collier and Hoeffler [3] [4] have argued that civil wars are motivated either by greed for private gains or by grievance stemming from autocracy, ethnic and religious differences, and poor economic performance. Elbadawi and Sambanis [6] have found that democracy is negatively associated with civil violence and that the prevalence of civil war is positively associated with ethnic fragmentation. Reynal-Querol [13] have concluded that religious differences constitute a social cleavage that is more important than linguistic differences in the development of civil wars and that democracy significantly reduces the incidence of civil wars between ethnic groups.

Despite differences and rivalry, abstinence from violence, and even cooperation, are possible outcomes of a conflict. Skaperdas [14] has demonstrated that there is a possibility of cooperation between rival groups when the probabilities of winning an armed conflict are significantly different and when the groups' marginal contributions to useful production are similar. Grossman and Kim [9] have analyzed a general equilibrium model of resource allocation to appropriation and productive activities and highlighted a non-aggressive equilibrium in which no resources are allocated to offensive weapons and claims to property are fully secured.

This paper argues that cessation of violence is a necessary condition, but not a sufficient one, for reaching a stable, genuine peace between rival groups, or nations. It highlights the role of hatred and its persistence, or dissolution, in shaping the nature of peace between groups. In addition to formal agreements, genuine and stable peace requires the dissolution of hatred between groups. In particular, the paper attempts to identify the conditions for convergence to a stable and genuine peace between two groups following a cessation of violence. The co-evolution of hatred between two groups, or nations, is parsimoniously presented by a system of two differential equations. A similar approach has been used by Faria [7] to describe the possible mutual evolution of the rival populations of Neanderthals and modern Homo Sapiens. The inherent nature of the peace between the groups is diagnosed by identifying the asymptotic properties of the system's steady state. The analysis suggests that strong inertia, persistent memories of hatred and high propensities to reciprocate hatred prevent rival groups from reaching a genuine and stable peace.

2. Formulation of hatred evolution and genuine peace process

Consider a situation where two groups, or nations, A and B, do not trust one another and are engaged in a violent conflict. The evolution of A's hatred of B (denoted by H^A with negative values representing A's level of affection of B) and the evolution of B's hatred of A (denoted by H^B with negative values representing B's level of affection of A) are displayed by a differential equation system which, for simplicity, is taken to be first order and linear:

$$\frac{dH_t^A}{dt} = \alpha_{11}H_t^A + \alpha_{12}H_t^B + \beta_1 V_t^B \quad (1)$$

$$\frac{dH_t^B}{dt} = \alpha_{21}H_t^A + \alpha_{22}H_t^B + \beta_2 V_t^A . \quad (2)$$

In this system, t is a continuous time index,[1] V_t^A is the intensity of A's violence against B at t, V_t^B is the intensity of B's violence against A at t, β_1 and β_2 are parameters reflecting the effects of each group's violence on the evolution of its counterpart's hatred, and α_{11}, α_{12}, α_{21}, and α_{22} are the elements of the equation-system's state-transition matrix.[2]

The parameters α_{11} and α_{22} reflect the effects of the current hatred level of each group on the evolution of its hatred of the counterpart. The sign and size of each of these parameters depend on two opposite factors associated with the current level of this destructive mental state. One factor is the group's collective habitual propensity to hate its counterpart—inertia. The other is the group's instantaneous weakening of this mental state that is caused by a fading collective memory of hatred of the opponent. Hence, α_{11} and α_{22} are, positive if the respective group's hatred-inertia dominates the group's diminishing memory of hatred of its counterpart. They are zero, or even negative, otherwise. In many instances, physical factors (such as disputed territories and natural resources) and cultural and religion differences serve as permanent reminders.

The parameter α_{12} indicates the effect of group B's level of hatred of group A on the evolution of group A's hatred of group B. Similarly, α_{21} indicates the effect of group A's level of hatred of group B on the evolution of group B's hatred of group A. That is, α_{12} reflects the collective propensity of the people of group A to reciprocate hatred toward group B and α_{21} reflects the collective propensity of the people of group B to reciprocate hatred toward group A. These parameters are inversely related to the groups' ability to behave compassionately.

In this formulation, a genuine peace process is defined as a course of affair between group A and group B that is free of violence ($V^A = 0 = V^B$) and reflecting a trend of diminishing mutual hatred from the initial positive levels ($H_0^A, H_0^B > 0$). Cessation of violence is a necessary, but not sufficient, condition for having a genuine peace process. That is, although the steady state (SS) of the differential equation-system (1) and (2) associated with $V^A = 0 = V^B$ is free of hatred ($H_{ss}^A = 0 = H_{ss}^B$), there is not necessarily convergence to this steady state. The nature of the A-B peace process is identified by the characteristic roots of the state-transition matrix of the homogeneous part of the aforementioned linear differential equation system:

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[1] Alternatively, time can be taken to be discrete and the evolution of hatred can be depicted by a system of difference equations.

[2] By subtracting from the right-hand-sides of equation (1) and equation (2) factors representing the stationary effect of economically, culturally and politically positive exchanges between the two groups, the system can be broadened to generate a steady state with mutual affection ($H_{ss}^A, H_{ss}^B < 0$).

$$\lambda_{1,2} = 0.5\{(\alpha_{11} + \alpha_{22}) \pm \sqrt{\underbrace{(\alpha_{11} + a_{22})^2 - 4(\alpha_{11}\alpha_{22} - \alpha_{12}\alpha_{21})}_{\Delta}}\}. \qquad (3)$$

When these characteristic roots are negative, or conjugate complex pair with a negative real part, the hatred-free steady state, $H_{ss}^{A} = 0 = H_{ss}^{B}$, is asymptotically stable. That is, cessation of violence starts a genuine peace process between group A and group B.

3. Conclusion

When A and B mutually abstain from violence, genuine peace process prevails if:

i. A and B have sufficiently weak inertia and strongly diminishing memories of hatred so that $\alpha_{11}, \alpha_{22} < 0$, and

ii. A's and B's propensities to reciprocate hatred ($\alpha_{12}, \alpha_{21} \geq 0$) are sufficiently low so that $\alpha_{11}\alpha_{22} > \alpha_{12}\alpha_{21}$.

Conditions i and ii ensure that the characteristic roots are either negative or constituting a conjugate complex pair with a negative real part. In the first case, the hatred-free steady state is a proper node. In the second case, the hatred-free steady state is approachable along a spiralling path. When the groups' propensities to reciprocate aversion are such that $\alpha_{11}\alpha_{22} - 0.25(\alpha_{11} + \alpha_{22})^2 < \alpha_{12}\alpha_{21} < \alpha_{11}\alpha_{22}$, there is convergence to the hatred-free steady state between A and B from any initial level of mutual hatred. If the groups' propensities to reciprocate aversion are sufficiently low so that $\alpha_{12}\alpha_{21} < \alpha_{11}\alpha_{22} - 0.25(\alpha_{11} + \alpha_{22})^2$ (i.e., $\Delta < 0$), the convergence to the hatred-free steady between A and B from any initial level of mutual hatred is along a bumpy road—an oscillating path displaying periods of mutual hatred, one-sided hatred, and mutual affection.

When conditions i and ii are not satisfied, genuine peace can still be reached if one of the groups has weak inertia and strongly diminishing memory of hatred. In particular, there exists two stable manifolds along which the groups' levels of hatred continually decrease as long as one of these groups has weak inertia and strongly diminishing memory of hatred so that, despite the inertia-dominated generation of hatred by the other group, $\alpha_{11} + \alpha_{22} < 0$. In this case, only one of the groups has a dominant, strongly diminishing collective memory (i.e., either $\alpha_{11} < 0$ and $\alpha_{22} > 0$, or vice versa). Recalling the assumption that $\alpha_{12}, \alpha_{21} \geq 0$, $\alpha_{11}\alpha_{22} - \alpha_{12}\alpha_{21} < 0$ and consequently $\sqrt{\Delta} > |\alpha_{11} + \alpha_{22}|$. Given that $\alpha_{11} + \alpha_{22} < 0$, $\lambda_1 > 0$ whereas $\lambda_2 < 0$. Hence the hatred-free steady state is a saddle point. That is, there exist two convergent arms to $H_{ss}^{A} = 0 = H_{ss}^{B}$ from mutual, not necessarily the initial, combinations of hatred.

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