"Stop" Signs and Missing Points for Preventing Nuclear War and WW3：Immunological Viewpoints

Yue Zhang*

Shenzhen Futian hospital for Rheumatic Diseases, Shenzhen, China

Abstract

We face the threat of nuclear war and new research is needed. Laureate Schilling and game theorists and their nuclear gambling strategy might encourage an alliance to dominate the adversary and mobilize to maximize their subsystem's interest. However, while looking into Schilling model of segregation, we noted "stop "signs and missing points for preventing nuclear war and WW3. Therefore, we aimed to create a nuclear risk rating system, to identify potential abusers of Schilling's nuclear gamblers strategy by using the Dunning–Kruger effect, information cocoons and the free exchange of information. As the goal of >80% similarity can trigger conflict, we must work together for a "No First Nukes" pact and increased international collaboration to achieve nuclear disarmament.

Keywords: Schilling models; "Stop" signs; Nuclear game of "chicken" ; Humanity's survival; Immunological viewpoints

*Corresponding author: Yue Zhang, Shenzhen Futian hospital for Rheumatic Diseases, Shenzhen, 518000, China

Introduction

We agree new research is needed to achieve nuclear disarmament [1]. Year 2023 Nuclear clock was 10 second less and only 90 second left. The world faces the threat of nuclear war, as hinted at by Putin, Russians' demand of nuclear-missiles deployment, and our ignorance of survivor-bias effects. Reducing nuclear inventories may not avoid war. Similar to how humans need an immune system, the world needs a better system to prevent war. Research must advance alongside negotiations about not manufacturing new nuclear weapons and signing a "No First Use" pact. The world is a single system, where alliances are the subsystems [2]. In laureate Schelling's segregation model [3], even if agents tolerate dissimilar neighbors, they segregate themselves. If the agents are content with <80% similarity, no conflict arises; with >80% similarity, agents shift endlessly and no clusters form. If we extend Schelling's model to limit how often agents can relocate but their tolerance can fluctuate; clusters disintegrate alongside conflicts [4]. Another possibility is a nuclear risk rating system for politicians' psychological status to identify potential abusing Schelling's nuclear gamblers strategy via Dunning–Kruger effect. Information cocoons weaken democracy, and multiple views are needed. Because nuclear states are culturally diverse, disarmament is complicated. The free exchange of information will help achieve this goal.

We need a "No First Nukes" pact and increased international collaboration. As the goal of >80% similarity-squash can trigger conflict, a nuclear risk rating system will be meaningful. We must work together. War is a systemic failure like cancer and COVID19 pandemic [5-8]. We could use the "1-3-5" model of medicine (1=humanity; 3=the technological frontier; 5=the Predictive–Preventive–Personal/population–Participatory–Promotional model) to predict and prevent war, especially assisted by AI-Web 3.0 simulations. Even if we cannot prevent war, we can minimize the damage.

We Need A "No First Nukes" Pact

A Chinese saying states: "If the skin is not there; there is nowhere for the hair to attach itself." The world is facing the threat of nuclear war, as hinted at by Putin and Russian civilians' recent demonstration outside the US embassy in Moscow. The efforts by ICAN laureates need to advance alongside negotiations and adjustments towards a realistic ratification by nuclear states. Think-tanks like RAND may contribute further. Nuclear states should not deter alliances to take up a catalytic posture and sign the ICAN policy independently. Furthermore, nuclear states should not make any new nuclear bombs after the old ones' expiry. We should pay more attention to AI-aided mixed wargames and secretly developing nuclear states, and persuade more nuclear states to lower the risk of asymmetric escalation by signing a "No First Use of Nuclear Weapons" pact. We cannot rule out the impetus to use nuclear bombs, since Americans have done so. Ironically, we celebrate the lack of a nuclear war every decade [9], although we do not have true freedom, as we often read that we are on the brink of nuclear war. However, we should not reassure ourselves that Colonel Tibbets felt no guilt about bombing Japan with his Little Boy nuclear bomb. If nuclear war breaks out, we (military, politicians, academics and civilians) must all take responsibility for it. More researchers with correct information and academics with understanding must convince politicians that people desire a world not just free from the fear of nuclear war but the fear of conventional war as well [10]. This needs to be done now, along with a clear and comprehensive model based on correct information to achieve a world free not only of conventional and nuclear war but also the fear of one. Ultimately, we will all benefit from a "No First Nukes" pact and increased international collaboration to prevent wars.

Applying the 1-3-5e Model to Global Conflict

Humans need an immune system to prevent diseases. Similarly, we could initiate a strategy to prevent war, based on the "1-3-5e" model, where 1 is humanity; 3 is the frontier of AI, blockchain and Web 3.0; 5 is the Predictive–Preventive–Personal–Participatory–Promotional Medicine (5PM) model of precision medicine; and e is extreme longevity, as used for "Health 2035". Similarly, the frontiers of innovation in neutron detection, noble gas monitoring and sensor technology may help to apply the Predictive-Preventive-Population-Participatory-Promotional 5PM approach for Precise Military Control ("5PMC") . This would act as a quantitative prediction and qualitative alert if applied to a Web 3.0 simulation of a global nuclear war. If our models are correct, we can predict the future with diverse strategies and we may develop institutions that preclude undesirable patterns. Our world includes states with distinct cultures, governments, geographies and resources [6-11]. Self-organized systems can produce cooperative, robust outcomes, but they can also spiral into chaos. We need to understand how to encourage the former and guard against the latter. Using a gambler's lens to view the Ukraine war (>80% similarity for NATO-USA-Japan; ≥83.3% nearest neighbor dissimilarity for Russia), the

Korean Peninsula (>80% similarity for Australia–South Korea-USA-Japan; ≥80% nearest neighbor dissimilarity for North Korea) and the Taiwan Straits (>70% similarity for Taiwan-South Korea-USA-Japan–Australia; ≥5/7 near neighbor dissimilarity for Mainland China) is dangerous. Reducing the dynamic networks of these separate agents will make them"diseased"or will induce the tipping point of a clash [12]. We share the world as one system and any alliance is a subsystem [6]; as in cancer, war is a systemic failure [5]. Therefore, we need to work together. Even if we cannot stop all wars, we may lower its damage through our efforts.

An Extension of Schelling's Segregation Model for Nuclear Disarmament

We should work towards nuclear disarmament via Putin's threat to use nuclear weapons [1]. However, focusing on reducing nuclear inventories alone may not avoid escalation into a nuclear war. We should look to a self-organization model using comprehensive information and research. Nobel laureate Thomas Schelling, explored the factors that motivate governments towards conventional war and approach the brink of nuclear war like gamblers. In Schelling's self-organization segregation model [3], an agent might represent different races, ethnicities, etc. The model implies that even when agents tolerate being surrounded by agents who are different, they choose to segregate themselves over time. If all agents were satisfied with <80% similarity, all states could get along well. However, if we pursue >80% similarity, some agents will shift continually, and no clusters (integration) will form. Moreover, if A has nine bombs and B has one, B's only chance is to attack first. If A has eight bombs but B has two, B could survive A's first attack. Even if one bomb were destroyed, B has another for retaliation; therefore, B would not need to attack first. Therefore, in Schelling's model, the tipping point for "stop signs" is 20% for the isolated minority vs. 80% for the majority. We can extend Schelling's model of segregation so that the number of times that agents can relocate is restricted but agents' tolerance of other members in the same area is variable and could decrease because of the scarcity of resources. After increasing initially, segregation in an artificial society becomes unsustainable and clusters disintegrate [4], leading to conflict. The greater the degree of similarity pursued, the greater the likelihood of conflict. States with lower similarity needs would be helpful for a peaceful outcome in this extended model. Understanding Schelling's model could thus help us restrain the impetus to go beyond the tipping point.

A Nuclear Risk Rating System

The Ukraine war necessitates a nuclear risk rating system, like that for tropical storms. We could prevent conventional war from expanding into nuclear war by maximizing the difficulty of this. The world could need to greatly reduce or even exclude nuclear gamblers. The psychological status of leaders who control the nuclear bombs and their partners must be rated. Maybe we need a system to allow decision-makers to inform multi-parties such as Switzerland or NATO alliance members before a nuclear war occurs,

doing so democratically rather than autocratically by single parties or even a totalitarian dictator. We could turn to the Dunning–Kruger effect as inspiration. Dunning–Kruger scores below -1 indicate underestimation ; those above +1 indicate arrogance and less tolerance. The equation is i-1<i>i+1, where i is the ideal, i-1 indicates underestimation and i+1 indicates overestimation or arrogance. If a politician (especially a dictator) has a higher Dunning–Kruger effect (manifesting as vanity or information cocoons), the less tolerance they have and thus the risk of nuclear war will be greater, along with greater resource scarcity. Second, it is dangerous to ignore the survivor effects in events such as the Cuban Missile crisis and when Petrov saved the world from WWIII in 1983. Moreover, according to reports, the USA has recently promoted its novel nuclear bombs in Europe via NATO, and some EU nations seem open to having them. These actions could possibly increase the nuclear risk. We could apply a nuclear risk rating system to alert the people. Behaving democratically today might help a nation avoid becoming an autocracy [1]. Politicians should avoid any immature and non-professional behavior (i.e., high Dunning–Kruger effects). Working to maintain good understanding and the exchange of information between cultures would help avoid insufficient or wrong information being spread. Good information and cultural understanding can act to reduce betrayal, dubious fantasies, autocracy and war.

We Must Increase Cross-Cultural Understanding to Avoid Nuclear Conflicts

Because the nine nuclear states are culturally diverse, disarmament is complicated. More research is needed on how we can work together. Academics can help by contributing their knowledge of human nature and how different cultures work. It seems a bit late for an open letter against the invasion of Ukraine. Instead, we should fight for the free exchange of information to ease this volatile situation. Politicians with an aggressive outlook and no first-hand experience of China could likely have criticized her – and vice versa. Amassing weapons and forging alliances will provoke responses from others [6]. The lack of understanding could exacerbate the risks of such politicians misleading the world (e.g., regarding the Taiwan Strait conflict). Good models of communication and cross-cultural understanding are important to avoid using incorrect models. Collective extremization is likely if agents sever connections and the extremist minority can sway the neutral majority [13]. Seeking the truth helps achieve effective communication and understanding. China and the West could need to hold conversations to avoid misconceptions and be innovative about achieving peace. Our research should not be isolated; instead, we can collaborate to serve the world. MIT former president Rafael Rei said that better international cooperation is needed rather than "Chinese initiatives". By pooling our academics under the UN, we may stimulate all participating states to develop a system controlling the nuclear arsenal. Information cocoons weaken democracy, and a dual view is needed. We must understand the origins of wealth, war and peace [14], as described by Adam Smith. Regimes could imitate Switzerland, with more parties, more diversity and more discussions. During the COVID-19 outbreak, we worked together [7]. Finally, to achieve a victory for counterterrorism if terrorists initiate conflict, we need data and methodological accuracy to examine the local politics, geography, economy, history, religion and culture, and thus act appropriately.

References

1. Herzog S (2022) Beyond nuclear deterrence. Science 378 (6616): 115.

2. Bar Yam Y, Harmon D, Bivort BD (2009) Systems biology. Attractors and democratic dynamics. Science 323(5917): 1016-1017.

3. Cown MF (2014) Schelling's model of segregation.

4. Arpan J (2020) An extension of schelling's segregation model: Modeling the impact of individuals' intolerance in the presence of resource scarcity. Communications in Nonlinear Science and Numerical Simulation 85: 105202.

5. Zhang Y, Moriguchi H (2011) Chromatin remodeling system, cancer stem-like attractors, and cellular reprogramming. Cell Mol Life Sci 68(21): 3557-3571.

6. Jervis R (1997) System effects: Complexity in political and social life. Princeton University Press, US, p. 328.

7. Zhang y (2020) To be and not to be: with wisdom and grace or stupidity and disgrace after the SARS-CoV-2 outbreak. J Child Adult Vaccines Immunol 4(1): 5.

8. Andreoni J, Nikiforakis N, Siegenthaler S (2020) Predicting social tipping and norm change in controlled experiments. Proc Natl Acad Sci USA 118(16): e2014893118.

9. Schelling T (2006) An astonishing 60 years: The legacy of hiroshima. Proc Natl Acad Sci USA 103(16): 6089-6093.

10. (2022) Open letter of Russian scientists and science journalists against the war with" Ukraine".

11. Ehret S, Constantino SM, Weber EU, Jefferson C, Vogt S (2022) Group identities can undermine social tipping after intervention. Nat Hum Behav 6(12): 1669-1679.

12. Liu X, Chang X, Leng S, Tang H, Aihara K, et al. (2019) Detection for disease tipping points by landscape dynamic network biomarkers. Natl Sci Rev 6(4): 775-785.

13. Stokes BM, Jackson SE, Garnett P, Luo J (2022) Extremism, segregation and oscillatory states emerge through collective opinion dynamics in a novel agent-based model. The Journal of Mathematical Sociology.

14. Kelly RC (2000) Warless societies and the origin of war. University of Michigan Press, USA.

Copyright © : Yue Zhang