

Energy security, world system, and Jervis' spiral security dilemma; Case of Russo-Ukraine War

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Article Info	Abstract
<p>Original Article Main Object: Interdisciplinary Scope: Russo-Ukraine War</p> <p>Received: 10 May 2023 Revised: 30 June 2023 Accepted: 01 July 2023 Published online: 11 July 2023</p> <p>Keywords: energy security, Robert Jervis, security dilemma, spiral model, world system.</p>	<p>Political decisions and actions at the international level are formed by complex psychological mechanisms, perceptions, and misconceptions. It makes difficult to predict the outcome of political and social interactions. In International Relations (IR) and political psychology, the security dilemma, or the spiral model, which was first seriously presented by Robert Jervis, states government's actions to increase its security can lead to the adoption of security measures by creating a misperception as a threat in another government. Such an action-reaction cycle can cause tensions, escalation, and the emergence of numerous conflicts between the parties. The role of energy as one of the main drivers of socio-economic affairs, its interrelationships with countries' national security and geopolitical issues push governments pay special attention to energy security as one of their various forms of security. This research seeks to investigate the relationship between the area of energy security and the security dilemma, especially with regard to the regulators of the security dilemma from Jervis' perspective (physical-material factors and psychological-perceptual factors). In line with the physical-material factors of the security dilemma, we examine the role of energy and energy systems where they are exposed to security threats or are themselves the cause of insecurity. Also, in psychological-perceptual factors, the potential of energy security to generate misperceptions and their diverse origins is explored. A brief case study of the Russo-Ukraine war has also been examined in this regard. Finally, by conceptualizing the "Spiral Energy Security Dilemma", the domains of cooperation in the shadow of the security dilemma and the challenges of energy security are analyzed.</p>
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Extended Abstract

Introduction

The international system is a complex multifaceted system with economic, social, political, cultural, scientific, and military components. It is quite difficult to comprehend the behavior and dynamics of this system. Forecasting international order's future situation is even more complicated. The decisions made by decision-makers lie at the center of dynamic mechanisms. The issue to be addressed is political and economic decision-makers are susceptible to a variety of perceptual errors and biases. The collision of wide and varied perceptions in different economic, political, security, and environmental concepts and domains, can lead to the emergence of numerous disputes and conflicts at the regional or international level. Hence, decision-makers should examine not only their own perceptions, but also the perspectives of others.

Method

John Herz originally presented the security dilemma, which was later taken seriously by Robert Jervis in the form of a Spiral Model. Jervis' spiral theory attempts to explain the origins of unwanted wars. Jervis' spiral model for justifying war causes from the standpoint of substances is pitted against Deterrence Theory. The essence of Jervis's theory can be considered political psychology, in which the perceptions and misperceptions of political actors are assessed. Jervis believes people mistakenly assume their harmless intentions and motivations are transparent to everyone. As a result, governments' non-aggressive security measures foster misunderstandings on the other side, trapping them in a cycle of escalating security measures on both sides while presuming the other side has a hostile and aggressive motivation. Jervis' viewpoint on the security dilemma incorporates some novel ideas. Physical-material and psychological-perceptual factors, according to Jervis, are the regulators of the severity of the complexity emerging from the security dilemma. Jervis also believes that the security dilemma is not the cause of all wars.

Discussion

Clearly, in today's modern world, energy is one of the key socio-economic drivers and has significant impacts on economic growth and sustainable development of the countries. As a result of the ubiquitous usage of energy in the economic, health, security, and political spheres, policymakers are seeing energy through the prism of national security. Numerous historical events, such as wars over different resources, energy weaponization in wars, oil shocks, environmental changes, and territorial issues have caused governments to be concerned about their energy situation. Accordingly, the concept of "Energy Security" was coined. The traditional definition of energy

security refers to the continuous and uninterrupted supply of energy at an affordable price. It is clear that the concept of energy security encompasses more than just supply and demand security. Although the economic, political, and security dimensions of energy security have been examined in previous decades, there is no unified and universal definition of energy security. The concept of energy security still has several facets that require further investigation.

Results

The current research attempts to investigate the function and compatibility of energy security with the security dilemma in the emergence of conflict between governments and different groups by employing the security dilemma from Jervis' perspective as an independent research variable. For this purpose, in the "Conflict, Perception, and Spiral Model" section, we will compare Jervis's perspective on the security dilemma to other perspectives as well as Jervis's innovations in his security dilemma model, namely, the regulators of the security dilemma (physical-material and psychological-perceptual). In this regard, we analyze the function of energy and energy systems as the physical-material regulator of the security dilemma from Jervis' perspective in the "Energy and Security" section. Subsequently, to explore the psychological-perceptual factors regulating the security dilemma, we have to examine the concept of energy security. As a result, given the novelty and dispersion of energy security definitions, it was attempted to investigate several aspects of energy security in accordance with the "Conceptual Analysis of Energy Security" section in order to gain a comprehensive understanding of energy security and its issues, and thus the section "Imagination, bias, and cultural differences in energy security" will go through the psychological-perceptual dimension that regulates the security dilemma.

Conclusion

The main hypothesis in this research is that the challenges surrounding energy security, from Jervis's point of view, have the potential to cause conflict between countries in a variety of ways. Finally, by raising the "Conceptualization of the Spiral Dilemma of Energy Security", this issue and the domains of cooperation have been discussed in the shadow of this security dilemma. Furthermore, the potential of several regulators of the security dilemma of the Russo-Ukraine war, which can play a role in establishing or intensifying Jervis' spiral model through the channel of energy security, has been examined as a brief case study.

Conflict of interest

The authors declared no conflicts of interest.

Authors' contributions

All authors contributed to the original idea, study design.

Ethical considerations

The author has completely considered ethical issues, including informed consent, plagiarism, data fabrication, misconduct, and/or falsification, double publication and/or redundancy, submission, etc.

Data availability

The dataset generated and analyzed during the current study is available from the corresponding author on reasonable request.

References

- Akresh R, Bhalotra S, Leone M, Osili U. (2012). "War and stature: Growing up during the Nigerian civil war". *American Economic Review*. 102(3): 273-77. <https://doi.org/10.1257/aer.102.3.273>.
- Ariely D. (2010). *Predictably Irrational: The Hidden Forces that Shape Our Decisions*. Harper.
- Baldwin D. (1997). "The concept of security". *Review of International Studies*. 23(1): 5-26. <http://www.jstor.org/stable/20097464>.
- BBC. (2012). "Germany: Nuclear Power Plants to Close by 2022". Accessed January 9, 2012. <http://www.bbc.co.uk/news/world-europe-13592208>.
- Butterfield H. (1951). *History and Human Relations*. Collins.
- Casier T. (2011). "The rise of energy to top of the EU-Russia agenda: From interdependence to dependence?". *Geopolitics*. 16(3): 536-552. <https://doi.org/10.1080/14650045.2011.520862>.
- Cheraghlou A, Aladekoba N. (2023). "China in Sub-Saharan Africa: Reaching far beyond natural resources". Accessed: March 10, 2023. <https://www.atlanticcouncil.org/in-depth-research-reports/issue-brief/china-in-sub-saharan-africa-reaching-far-beyond-natural-resources/>.
- Cherp A, Jewell J. (2011). "The concept of energy security: beyond the Four As". *Energy Policy*. 75: 415-421. <https://doi.org/10.1016/j.enpol.2014.09.005>.
- Chester L. (2010). "Conceptualising energy security and making explicit its polysemic nature". *Energy Policy*. 38: 887-895. <https://doi.org/10.1016/j.enpol.2009.10.039>.
- Clinton White House. (1999). <https://clintonwhitehouse4.archives.gov/WH/New/Europe-9911/briefings/1999-11-18a.html>.
- Congressional Research Service. (2023). "U.S. Security Assistance to Ukraine". Accessed: June 24, 2023. <https://crsreports.congress.gov/product/pdf/IF/IF12040>.
- Cote S. (2013). "A war for oil in the Chaco, 1932–1935". *Environmental History*. 18(4): 738-758. <http://www.jstor.org/stable/24690460>.
- Dahl R, Lindblom C. (1992). *Politics, Economics, and Welfare*. Transaction Publishers.
- Doran P. (2009). "Collective Energy Security: A New Approach for Europe". *Journal of Energy Security*. http://www.ensec.org/index.php?option=com_content&view=article&id=177:collective-energy-security-a-new-approach-for-europe&catid=92:issuecontent&Itemid=341.
- Field C. (2020). "Book Review Perception and Misperception in International

- Politics: New Edition". Accessed: January 21, 2023. https://cove.army.gov.au/article/book-review-perception-and-misperception-international-politics-new-edition#_ednref4.
- Fiske S, Pratto F, Pavelchak M. (1983). "Citizens' images of nuclear war: contents and consequences". *Journal of Social Issues*. 39: 41-65.
- Flyvbjerg B. (2021). "Top ten behavioral biases in project management: An overview". *Project Management Journal*. 52(6): 531-546. <https://doi.org/10.1177/87569728211049046>.
- Glaser C. (1997). "The security dilemma revisited". *World Politics*. 50(1): 171-201. <http://www.jstor.org/stable/25054031>.
- Great Britain Foreign Office. (1929). "British Documents on the Origins of the War". *Gooch G, Temperley H.A.* H.M. Stationery Office.
- Herz J. (1950). "Idealist internationalism and the security dilemma". *World Politics*. 2(2): 157-180. <https://doi.org/10.2307/2009187>.
- Hippel D, Savage D, Hayes P. (2011). "Introduction to the Asian Energy Security project: Project organization and methodologies". *Energy Policy*. 39(11). <https://doi.org/10.1016/j.enpol.2008.01.010>.
- Hobbes T. (1886). *Leviathan*. 2nd Ed., George Routledge and Sons.
- IEA. (2020). *Ukraine Energy Profile*. Paris. <https://www.iea.org/reports/ukraine-energy-profile>.
- Jakson H, Byrne J, Cecchetti E, Ciampor J, Hajek J, Hausler M. (2016). "Energy in conventional warfare". *NATO Energy Security Center of Excellence*. https://enseccoe.org/data/public/uploads/2017/02/conventional_warfare_176x2_50mm_draft6.pdf.
- Jervis R. (2019). *How Statesmen Think: The Psychology of International Politics*. Tr. Maleki A and colleagues. Tehran: Allameh Tabataba'i University Press. [in Persian]
- , (1978). "Cooperation under the security dilemma". *World Politics*. 30(2): 167-214. <https://doi.org/10.2307/2009958>.
- , (1976). *Perception and Misperception in International Politics*. Princeton University Press. <https://doi.org/10.2307/j.ctvc77bx3>.
- Jin Y. (2022). "Exploring the impact of the war between Russia and Ukraine on Germany's energy policy". *Journal of Education, Humanities and Social Sciences*. 6: 31-37. <https://doi.org/10.54097/ehss.v6i.4037>.
- Jing X. (2023). "The Russia-Ukraine war and energy security: Impact and policies, from a European perspective". *Highlights in Business, Economics and Management*. 3: 215-222. <https://doi.org/10.54097/hbem.v3i.4745>.
- Johansson B. (2013). "A broadened typology on energy and security". *Energy*. 53. <https://doi.org/10.1016/j.energy.2013.03.012>.
- Johnson D. (2012). "The Heglig oil dispute between Sudan and South Sudan". *Journal of Eastern African Studies*. 6(3): 561-569. <https://doi.org/10.1080/17531055.2012.696910>.
- Joskow P. (2009). "The U.S. energy sector: prospects and challenges, 1972-2009". *US Association for Energy Economics 'Dialogue'*. 17(2): 1-42.
- Khadduri M, Ghareeb E. (1997). *War in the Gulf, 1990-91: The Iraq-Kuwait Conflict and Its Implications*. Oxford University Press.
- Keller C, Visschers V, Siegrist M. (2012). "Affective imagery and acceptance of replacing nuclear power plants". *Risk Analysis*. 32(3): 464-77.
- Kempton W, Boster S, Hartley A. (1996). *Environmental Values in American Culture*. MIT Press.
- Klare M. (2014). "Twenty-first century energy wars: how oil and gas are fuelling global conflicts". *Energy Post*. Accessed: June 17, 2023. <https://energypost.eu/twenty-first-century-energy-wars-oil-gas-fuelling-global-conflicts/>.
- Kydd A. (1997). "Game theory and the spiral model." *World Politics*. 49(3): 371-400. <http://www.jstor.org/stable/25054007>.

- Lascurettes K, Poznansky M. (2021). "International order in theory and practice". *Oxford Research Encyclopedia of International Studies*. 1-28. <https://doi.org/10.1093/acrefore/9780190846626.013.673>.
- Lee R. (2015). "Stability of energy imageries and affect following shocks to the global energy system: the case of Fukushima". *Journal of Risk Research*. 18(7): 965-988. <https://doi.org/10.1080/13669877.2015.1042501>.
- Maleki A, Reardon R. (2014). "Improving U.S.-Iranian relations and overcoming perceptual biases". In Malek A, Tirman J. *U.S.-Iran Misperceptions: A Dialogue*. Bloomsbury Publishing. <https://www.bloomsbury.com/uk/usiran-misperceptions-9781623569273/>.
- Månsson A. (2014). "Energy, conflict and war: Towards a conceptual framework". *Energy Research & Social Science*. 4. <https://doi.org/10.1016/j.erss.2014.10.004>.
- Matuszak S. (2023). "Russia shows its frustration – 15 attacks on Ukraine’s energy infrastructure". *OSW Center for Eastern Studies*. <https://www.osw.waw.pl/en/publikacje/analyses/2023-03-10/russia-shows-its-frustration-15-attacks-ukraines-energy>.
- Morgenthau H. (2010). *Politics Among Nations: The Struggle for Peace and Power*. Tr. Moshirzadeh H. Tehran: Publications of the Publishing Department of the Ministry of Foreign Affairs. [in Persian]
- Mousavian H. (2012). *Iran Nuclear Crisis: A Memoir*. Washington: Carnegie Endowment for International Peace. <https://carnegieendowment.org/2012/05/03/iranian-nuclear-crisis-memoir-pub-48040>.
- Mufson S. (2014). "Shifting energy trends blunt Russia’s natural-gas weapon". *The Washington Post*. Accessed: June 17, 2023. https://www.washingtonpost.com/business/economy/shifting-energy-trends-blunt-russias-natural-gas-weapon/2014/02/28/7d090062-9ef7-11e3-a050-dc3322a94fa7_story.html
- NBC News. (2015). "Full interview with Iranian foreign minister Mohammad Javad Zarif". Accessed: November 16, 2022. <https://www.nbcnews.com/storyline/iran-nuclear-talks/full-interview-iranian-foreign-minister-mohammad-javad-zarif-n317516>.
- Nourian A. (2009). "Perception and constructivism in security theories". *Political Science*. 12(45): 85-110. [in Persian]
- Pallin C. (2016). "Future Approaches to the Shared Neighborhood." European Union. *Institute for Security Studies*, 26: 63-68.
- Rhode A, Schönbohm A, Vliet J. (2014). "The tactical utilization of cognitive biases in negotiations". Berlin School of Economics and Law, Institute of Management Berlin.
- Reuters. (2013). "China completes post-Fukushima nuclear safety inspection". Accessed February 20, 2023. <https://www.reuters.com/article/china-nuclear-safety-idAFL3E7JB0K920110811>.
- Sayman S, Öncüler A. (2009). "An investigation of time inconsistency". *Management Science*. 55(3): 470-480. <https://psycnet.apa.org/doi/10.1287/mnsc.1080.0942>.
- Scheidel A, Bene D, Liu J, Navas G, Mingorría S, Demaria F, Avila S, Roy B, Ertör I, Temper L, Martínez-Alier J. (2020). "Environmental conflicts and defenders: A global overview". *Global Environmental Change*. 63. <https://doi.org/10.1016/j.gloenvcha.2020.102104>.
- Schelling T. (1966). "Arms and influence". *American Political Science Review*. 61(3): 766-767. <https://doi.org/10.2307/1976097>.
- Schellnhuber H. (2009). *Climate Change as a Security Risk*. Routledge.
- Sovacool B. (2016). "Differing cultures of energy security: An international comparison of public perceptions". *Renewable and Sustainable Energy Reviews*. 55: 811-822. <https://doi.org/10.1016/j.rser.2015.10.144>.

- (2011). *The Routledge Handbook of Energy Security*. Routledge, London. [http://refhub.elsevier.com/S2214-6296\(16\)30149-9/sbref0465](http://refhub.elsevier.com/S2214-6296(16)30149-9/sbref0465).
- Statista. (2023). "Russian gas transit volume in Ukraine 2022-2023, by route". Accessed February 28, 2023. <https://www.statista.com/statistics/1308480/ukraine-russian-gas-transit-volume-by-route/>.
- Stein J. (1992). "Deterrence and compellence in the Gulf, 1990-91: A failed or impossible task?". *International Security*. 17(2): 147-179. <https://doi.org/10.2307/2539171>.
- Stern J, Pirani S, Yafimava K. (2009). *The Russo-Ukrainian Gas Dispute of January 2009: A Comprehensive Assessment*. Oxford Institute for Energy Studies. <https://doi.org/10.26889/9781901795851>.
- Swissinfo. (2011). "Swiss to Phase out Nuclear Power by 2034". swissinfo.ch. Accessed March 4, 2013. http://www.swissinfo.ch/eng/politics/internal_affairs/Swiss_to_phase_out_nuclear_power_by_2034.html?cid=30315730.
- Szulecki K. (2018). "The Multiple Faces of Energy Security: An Introduction". Szulecki, K. (eds) *Energy Security in Europe. Energy, Climate and the Environment*. Palgrave Macmillan, Cham. https://doi.org/10.1007/978-3-319-64964-1_1.
- Tahmassebi H. (1986). "The impact of the Iran-Iraq war on the world oil market". *Energy*. 11(4): 409-411. [https://doi.org/10.1016/0360-5442\(86\)90127-1](https://doi.org/10.1016/0360-5442(86)90127-1).
- Talmazan Y. (2023). "Biden warns the threat of Putin's using tactical nuclear weapons is 'real'". *NBC News*. Accessed: June 17, 2023. <https://www.nbcnews.com/news/world/putin-nuclear-weapons-threat-real-biden-warns-rcna90114>.
- Tang S. (2009). "The security dilemma: A conceptual analysis". *Security Studies*. 18(3): 587-623. <https://doi.org/10.1080/09636410903133050>.
- Thaler R, Sunstein C. (2008). *Nudge: Improving Decisions About Health, Wealth, and Happiness*. Yale University Press.
- Thucydides. (1989). *The Peloponnesian War: The Complete Hobbes Translation*. Chicago: University of Chicago Press.
- Truelove H. (2012). "Energy source perceptions and policy support: image associations, emotional evaluations, and cognitive beliefs". *Energy Policy*. 45: 478-89. <https://doi.org/10.1016/j.enpol.2012.02.059>.
- Tversky A, Kahneman D. (1981). "The framing of decisions and the psychology of choice". *Science*. 211(4481): 453-458. <https://doi.org/10.1126/science.7455683>.
- Tversky A, Kahneman D. (1974). "Judgment under uncertainty: heuristics and biases". *Science*. 185(4157): 1124-1131. <https://doi.org/10.1126/science.185.4157.1124>.
- Venkatachary, SK, Prasad J, Samikannu R. (2017). "Economic impacts of cyber security in energy sector: A review". *International Journal of Energy Economics and Policy*. 7(5): 250-262. <https://www.econjournals.com/index.php/ijeeep/article/view/5283>.
- Vivoda V. (2010). "Evaluating energy security in the Asia-Pacific region: A novel methodological approach". *Energy Policy*. 38(9). <https://doi.org/10.1016/j.enpol.2010.05.028>.
- Vivoda V, Manicom J. (2011). "Measuring success in oil import diversification: a comparison between China and Japan". *Journal of East Asian Studies*. 11(2): 223-254. <https://doi.org/10.1017/S1598240800007177>.
- USAID. (2023). "Energy and Energy Security". Accessed: June 17, 2023. <https://www.usaid.gov/ukraine/energy-and-energy-security>.
- U.S. Department of State. (2022). "Energy Security Support to Ukraine". Accessed: June 17, 2023. <https://www.state.gov/energy-security-support-to-ukraine/>

- Walt S. (2015). "Why arming Kiev is a really, really bad idea". *Foreign Policy*. <https://foreignpolicy.com/2015/02/09/how-not-to-save-ukraine-arming-kiev-is-a-bad-idea/>.
- Waltz K. (1988). "The origins of war in neorealist theory". *The Journal of Interdisciplinary History*. 18(4). <https://doi.org/10.2307/204817>.
- Yergin D. (1988). "Energy security in the 1990s". *Foreign Affairs*. 67(1): 110-132. <https://doi.org/10.2307/20043677>.
- Zampano G, Zevi N. (2011). "Italians Vote to Abandon Nuclear Energy". Accessed February 20, 2023. <https://www.wsj.com/articles/SB10001424052702303714704576383452729642270>.