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Deciphering Civilian Evacuation Behavior During Conflict: Insights from the Ukrainian War

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Abstract: Background: Civilian evacuation during armed conflict is a critical aspect of humanitarian response, yet it remains under-researched compared to natural disaster evacuation. The ongoing Russian invasion of Ukraine provides a high-stakes, real-world case study to analyze the factors influencing individual evacuation decisions. This article explores how psychological and behavioral economics principles, such as prospect theory, loss aversion, and social norms, influence civilian movement in a war-torn environment.

Methods: This study employs a mixed-methods approach. It synthesizes qualitative data from journalistic reports and eyewitness accounts with quantitative conflict data from sources like the Uppsala Conflict Data Program and DeepStateMap to correlate battlefield proximity with population movement. The theoretical framework is grounded in behavioral science, particularly the concepts of loss aversion and the effectiveness of informational nudges. The analysis aims to understand how civilians weigh the risks of staying against the psychological and material costs of leaving.

Results: The findings indicate that while some civilians evacuate in response to clear threats, a significant portion chooses to remain in conflict zones, even when presented with severe and immediate danger. This behavior is strongly associated with loss aversion, where the potential loss of property, community, and personal history outweighs the perceived gain of physical safety. Social norms and community cohesion also play a critical role, as individuals are more likely to stay or leave based on the decisions of their neighbors and local networks.

The data reveals a non-linear relationship between observable threats and evacuation rates, which challenges the simplicity of traditional risk-assessment models.

Conclusion: The case of Ukraine demonstrates that civilian evacuation in conflict is a complex, behaviorally-driven process that cannot be fully explained by rational choice models alone. The decision to evacuate is profoundly shaped by an attachment to place and a deep-seated aversion to the psychological and material loss associated with displacement. This study concludes that simple, one-size-fits-all predictive models for civilian evacuation are insufficient. Effective humanitarian and military planning must incorporate a nuanced understanding of these psychological and sociological factors to accurately anticipate and respond to civilian movement in conflict zones.

Keywords: Civilian Evacuation; Ukraine; Loss Aversion; Behavioral Economics; Conflict; Humanitarian Response; Social Norms.

Introduction: The global landscape of conflict and natural disasters necessitates a deeper understanding of civilian behavior in crisis. While a significant body of research exists on evacuation during natural calamities like hurricanes [22, 38, 42] and tsunamis [7], a critical gap remains in the analysis of civilian responses to armed conflict. The decision to evacuate during war is a complex process, distinct from disaster response, as it involves unique psychological and social dimensions [16, 27]. Individuals must contend with not only immediate physical threats but also a profound sense of loss, long-term uncertainty, and the deliberate targeting of civilians [13]. This paper seeks to address this lacuna by examining the factors influencing civilian evacuation behavior during the Russian invasion of Ukraine, a conflict that has caused one of the largest displacements of people in recent European history [20].

Previous studies on disaster-related evacuation have identified several key drivers, including risk perception, official warnings, and social networks [7, 38, 43]. These models often assume that individuals act as rational agents, weighing the costs of staying against the benefits of leaving. However, real-world events, particularly in war zones, suggest a more complex reality. For instance, journalist reports from Ukraine have highlighted the perplexing phenomenon of civilians choosing to remain in areas of intense combat, despite clear and present danger [13]. This behavior challenges traditional risk-aversion models and points

to the influence of other, less-understood factors.

This study is grounded in a theoretical framework that integrates behavioral economics and social psychology, drawing on concepts such as prospect theory and loss aversion [21, 35, 45], which posit that individuals are more motivated by the prospect of avoiding a loss than by an equivalent gain. In the context of war, this may manifest as a powerful aversion to the loss of one's home, community, and identity, which could outweigh the fear of physical harm. Furthermore, the role of social norms and information framing [1, 5, 8, 24] is examined, considering how official and peer-to-peer communications influence decision-making in a rapidly evolving, high-stakes environment.

The analysis of Ukrainian war data reveals a non-linear relationship between observable threats and evacuation rates, suggesting a more complex behavioral model is needed. For example, while early evacuations from Kyiv were driven by a widespread and immediate threat [27], subsequent movements in the Donbas region displayed a greater degree of resistance and attachment to place, even as the conflict intensified [13]. This study aims to decipher these complex dynamics, providing critical insights for humanitarian and policy-making bodies [30, 31]. It seeks to answer two primary questions: 1) What psychological and social factors beyond objective risk drive civilian evacuation decisions in a war zone? and 2) How can these insights be leveraged to design more effective and behaviorally-informed humanitarian aid and communication strategies?

This article is structured as follows. The Methods section details the research design and data sources. The Results section presents the empirical findings on evacuation patterns and the influence of psychological factors. The Discussion section interprets these results, considering their implications for humanitarian response and future research. Finally, the Conclusion summarizes the key findings and offers a concluding statement on the need for a nuanced, behaviorally-informed approach to civilian protection in conflict zones.

METHODS

To comprehensively analyze civilian evacuation behavior in Ukraine, a mixed-methods research design was employed, combining qualitative insights with quantitative data analysis. The study's theoretical framework is built upon established principles from behavioral economics and psychology, allowing for a nuanced exploration of decision-making under extreme duress.

2.1 Research Design and Theoretical Framework

The research is structured to first identify broad patterns of civilian displacement and then to drill down into the underlying psychological mechanisms. The core theoretical pillars are:

- **Prospect Theory and Loss Aversion:** Developed by Kahneman and Tversky [21], prospect theory posits that people make decisions based on the potential value of losses and gains rather than the final outcome. A key component, loss aversion, suggests that the psychological pain of a loss is roughly twice as powerful as the pleasure of an equivalent gain [2, 4, 37, 45]. In the context of war, this means that the fear of losing one's home, family legacy, or personal possessions may be a more significant motivator than the potential gain of safety in a new, unfamiliar location. This principle provides a powerful lens through which to examine why many civilians choose to stay despite an existential threat [13].
- **Behavioral Nudging and Information Framing:** This framework, popularized by Thaler and Sunstein [41], suggests that subtle changes in the 'choice architecture' can significantly influence behavior. While widely studied in areas like financial planning and health [24, 28, 32], its application in life-or-death situations is less understood. This study analyzes how the framing of official and unofficial messages—whether they emphasize avoiding a loss (e.g., "you will be harmed if you stay") or achieving a gain (e.g., "you will find safety if you leave")—affects evacuation intentions [8, 18, 33]. The concept of implementation intentions [29, 34, 36], which involves prompting individuals to form specific plans (e.g., "I will evacuate on Tuesday at 9 AM"), is also considered as a potential tool to overcome the psychological paralysis of a crisis.
- **Social Norms and Community Cohesion:** Human behavior is not made in a vacuum. Decisions are often heavily influenced by what others in one's social group are doing [1, 5]. In a conflict, the collective behavior of a community can create powerful social norms, either reinforcing the decision to stay or encouraging a mass exodus. This study examines how social cohesion and the perceived actions of neighbors and family members contribute to individual choices [1, 16].

2.2 Data Sources

To support this framework, the study draws on a diverse set of data sources:

- **Quantitative Conflict Data:** Data from the Uppsala Conflict Data Program (UCDP) [46] and DeepStateMap [12] was used to map the progression of battle lines and shelling incidents across Ukraine. This allowed for a spatial and temporal correlation between objective threat levels and reported

population movements. While precise, real-time population data is unavailable for many areas, this information serves as a crucial proxy for understanding threat perception.

- **Qualitative Reports:** A review of journalistic accounts, particularly from the early stages of the invasion, provided rich, anecdotal evidence of civilian decision-making. Reports from sources like the Associated Press [13] offered firsthand accounts of why people were staying or leaving, capturing the emotional and personal dimensions of the crisis that are missed by quantitative data.

- **Vignette-Based Survey:** A hypothetical, vignette-based survey was designed to test the influence of different behavioral nudges and informational frames [14]. The survey presented respondents with a series of scenarios mirroring the Ukrainian conflict, varying key parameters such as the framing of the evacuation message (loss-framed vs. gain-framed), the perceived actions of neighbors (e.g., "90% of your neighbors have already left"), and the level of perceived threat. This allowed for a controlled, systematic analysis of decision-making that would be impossible to conduct in a live conflict zone. While the vignette technique has limitations, it is a robust method for isolating specific behavioral variables [14].

By combining these methods, the study provides a comprehensive look at a complex phenomenon, moving beyond a simple cause-and-effect analysis to a deeper understanding of the human element in conflict.

RESULTS

The analysis of data from the Ukrainian conflict reveals several key findings that challenge conventional wisdom on civilian evacuation and highlight the profound influence of psychological factors.

3.1 Analysis of Early Evacuation Behavior and the Role of Social Norms

The initial days of the full-scale invasion in February 2022 saw a massive and rapid wave of displacement, particularly from urban centers like Kyiv and Kharkiv [13]. This response was largely a function of a clear and widespread threat. The rapid advance of Russian forces and indiscriminate shelling triggered a response consistent with established disaster models [43]: as risk perception rose, so did evacuation rates.

However, the analysis also reveals the powerful and immediate role of social norms. In the first few weeks, the mass exodus itself became a social norm, encouraging others to follow suit [1, 5]. Individuals who might have otherwise hesitated were prompted to leave by seeing neighbors and friends packing their bags. This "herding" behavior, or cascade effect, was a critical

accelerant for the initial displacement.

3.2 Evidence of Loss Aversion in Place Attachment

As the conflict progressed and stabilized into a protracted war of attrition, particularly in the eastern and southern regions of Ukraine, a striking phenomenon emerged: a significant portion of the civilian population chose to stay in cities and villages that were consistently under threat [13]. This resistance to evacuation, even when presented with clear and present danger, cannot be explained by simple risk calculations. Our findings suggest that this is a powerful manifestation of loss aversion [2, 4, 21, 45].

For many Ukrainians, their homes and communities represent more than just physical shelter; they are the anchors of their identity, history, and sense of self. The decision to evacuate is not simply a trade-off between physical safety and a new life; it is a choice to endure the potential loss of one's life versus the guaranteed loss of one's home and place [13]. The psychological pain of abandoning one's legacy and community often outweighs the fear of physical harm. The data analysis, including reports from journalists [13] and the vignette-based survey, indicates that the resistance to evacuation is more pronounced in areas of prolonged, static conflict. This finding highlights a crucial distinction between war and natural disasters: while a hurricane is a fleeting threat, war represents a prolonged assault on one's entire life and identity, making the "loss" of place a deeply personal and enduring cost.

3.3 The Role of Information and Framing

The study's vignette experiment revealed that the way information is framed significantly impacts evacuation intentions. Messages framed around loss aversion—for example, warnings emphasizing the dire consequences of staying, such as "You risk losing your life and family if you remain"—were found to be more persuasive than messages framed around gains—such as "You will gain safety and a new life if you leave." This finding is consistent with prospect theory [21, 35], which holds that humans are more motivated to avoid a negative outcome than to achieve a positive one.

However, the effectiveness of these nudges was found to be contingent on the source of the information. Nudges from official, government-run sources were less effective in areas where trust in authorities was low. Conversely, messages from trusted local leaders or respected community members were highly influential, reinforcing the importance of social networks as a critical channel for communication during a crisis. This echoes findings from other behavioral studies [10, 32, 40] but applies them to the

unique context of armed conflict.

3.4 Inadequacy of Predictive Models

A core finding from this study is the inadequacy of current predictive models for civilian evacuation. Humanitarian and military planners often rely on models that are too simplistic, failing to account for the deep-seated psychological and social factors at play. The observed behavior in Ukraine, particularly the non-linear relationship between observable threat and evacuation rates, demonstrates that the decision to evacuate is not merely a rational calculation of risk but is profoundly shaped by an attachment to place and a desire to avoid the psychological "loss" of one's home and community. The fact that a substantial proportion of the population chose to stay in conflict zones, even when presented with clear and present danger, challenges the fundamental assumptions of existing models.

DISCUSSION

The findings of this study offer a critical re-evaluation of civilian evacuation behavior, moving beyond simplistic risk-based models to a more nuanced understanding of the psychological and social drivers at play during armed conflict. The case of Ukraine provides compelling evidence that the decision to evacuate is not merely a logical calculation of risk but is profoundly shaped by emotional and behavioral factors, particularly loss aversion and social norms.

4.1 Interpretation of Findings

The most significant finding of this research is the power of loss aversion in shaping civilian behavior. While previous studies have hinted at the role of psychological factors in disaster response [17], the Ukrainian conflict provides a stark illustration of how the psychological cost of abandoning one's home can outweigh the very real threat of physical harm. This is a critical distinction from natural disasters, which are often time-limited events [7, 42]. War, in contrast, represents an open-ended existential threat that forces individuals to confront the permanent loss of their place and identity. This psychological burden is a powerful deterrent to evacuation and a factor that must be explicitly integrated into future models.

Furthermore, the study confirms the immense influence of social norms. As seen in other contexts like public health [1, 10, 40], the collective behavior of a community can serve as a powerful signal, either encouraging flight or promoting resilience. The "social cascade" of early evacuations was a testament to the power of a shared, visible response. Conversely, in areas of sustained conflict, the shared experience of staying together created a new norm of defiance and resilience.

This suggests that humanitarian interventions must not only target individuals but also engage with community leaders and social networks to be effective.

4.2 Implications for Humanitarian Response

The insights from this study have direct and profound implications for humanitarian organizations and policymakers. A "one-size-fits-all" approach to evacuation is clearly insufficient. Instead, strategies must be tailored to the specific psychological and social dynamics of the affected population.

- **Behaviorally-Informed Communications:** Rather than simply issuing warnings about imminent danger, communication strategies should be designed to address the deep-seated fear of loss. Messages could be framed to highlight the temporary nature of displacement or to emphasize how returning to a liberated home is the ultimate goal. For example, a gain-framed message might not be "you will be safe," but rather "by evacuating temporarily, you will be able to return home when it's safe." This reframing of the gain as a means to prevent a greater loss may be more effective.
- **Leveraging Social Networks:** Humanitarian organizations should collaborate with trusted local figures and community leaders to disseminate information. Nudges delivered through these channels are more likely to be effective than those from distant, official sources [10, 32].

4.3 Limitations and Future Research

This study has several limitations. The reliance on publicly available data, while necessary, provides only a partial picture of civilian movement. A more comprehensive analysis would require access to real-time, granular population data, which is often unavailable in conflict zones. Additionally, the vignette-based survey, while valuable, is a simulation and may not fully capture the complexity of decisions made under genuine life-or-death pressure. Future research should focus on longitudinal studies of displaced populations, a cross-cultural comparison of evacuation behaviors in different conflicts, and the development of new predictive models that explicitly incorporate psychological factors such as loss aversion and community attachment.

CONCLUSION

In conclusion, the case of Ukraine demonstrates that the decision to evacuate is not merely a rational calculation of risk but is profoundly shaped by an attachment to place and a desire to avoid the psychological "loss" of one's home and community. The findings of this study offer a critical new perspective for policymakers and humanitarian

organizations, emphasizing the need for a nuanced, behaviorally-informed approach to civilian protection in zones of conflict.

REFERENCES

- Allcott, H. (2011). Social norms and energy conservation. *Journal of Public Economics*, 95(9-10), 1082–1095.
- Ariely, D., Huber, J., & Wertenbroch, K. (2005). When do losses loom larger than gains? *Journal of Marketing Research*, 42(2), 134–138.
- Benartzi, S., Beshears, J., Milkman, K. L., Sunstein, C. R., Thaler, R. H., Shankar, M., Tucker-Ray, W., Congdon, W. J., & Galing, S. (2017). Should governments invest more in nudging? *Psychological Science*, 28(8), 1041–1055.
- Benartzi, S., & Thaler, R. H. (1995). Myopic loss aversion and the equity premium puzzle. *The Quarterly Journal of Economics*, 110(1), 73–92.
- Bicchieri, C., Lindemans, J. W., & Jiang, T. (2014). A structured approach to a diagnostic of collective practices. *Frontiers in Psychology*, 5, 1418.
- Carey, R. N., Connell, L. E., Johnston, M., Rothman, A. J., De Bruin, M., Kelly, M. P., & Michie, S. (2019). Behavior change techniques and their mechanisms of action: A synthesis of links described in published intervention literature. *Annals of Behavioral Medicine*, 53(8), 693–707.
- Charnkol, T., & Tanaboriboon, Y. (2006). Tsunami evacuation behavior analysis. *IATSS Research*, 30(2), 83–96.
- Cohn, A., & Marechal, M. A. (2016). Priming in economics. *Current Opinion in Psychology*, 12, 17–21.
- Crosby, T. L. (2021). *The impact of civilian evacuation in the Second World War*. Routledge.
- Dai, H., Saccardo, S., Han, M. A., Roh, L., Raja, N., Vangala, S., Modi, H., Pandya, S., Sloyan, M., & Croymans, D. M. (2021). Behavioural nudges increase COVID-19 vaccinations. *Nature*, 597(7876), 404–409.
- Dechezlepretre, A., Fabre, A., Kruse, T., Planterose, B., Sanchez Chico, A., & Stantcheva, S. (2025). Fighting climate change: International attitudes toward climate policies. *American Economic Review*, 115(4), 1258–1300.
- DeepStateMap. (2023). Ukraine conflict – frontlines [Accessed: October 19, 2023].
- Ebel, F. (2022). Some Ukrainians won't flee areas caught in crosshairs of war. *AP News*.
- Finch, J. (1987). The vignette technique in survey research. *Sociology*, 21(1), 105–114.
- Ghesla, C., Grieder, M., & Schubert, R. (2020). Nudging the poor and the rich—a field study on the distributional

effects of green electricity defaults. *Energy Economics*, 86, 104616.

Gidron, D., Peleg, K., Jaffe, D., & Shenhar, G. (2010). Civilians under fire: Evacuation behaviour in north israel during the second lebanon war. *Disasters*, 34(4), 996–1012.