

UGA Libraries Undergraduate Research Award Essay

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"Prospect Theory and Collective Action Problems: Loss Aversion in International Riparian Treaties"

Military planners and newspaper reporters often speculate that, in the coming decades, international conflict will be driven not by terrorism, arms races, or ethnic tensions but by *water scarcity*. As an international affairs and environmental social science student, the issue of water scarcity is especially engaging to me because it implies military, political, *and* environmental challenges. My background in the social sciences has equipped me to approach this challenge from an institutional and legal perspective: how can we improve the treaties that govern transboundary rivers to render them more effective in managing water scarcity in order to avoid armed conflict and environmental degradation? I hypothesize that findings from cognitive science about human decision-making (specifically, prospect theory) could help us to answer this question.

However, the same qualities that make this question compelling also make it challenging to study. First, this question is inherently multidisciplinary: since my hypothesis proposes a cognitive science explanation for a political phenomenon, my research must integrate literature from several disciplines including cognitive science, political science, and natural resource management. Second, water scarcity research is young and underdeveloped: since water scarcity has only recently emerged as a key military, political, and environmental threat, most research on the topic has been published within the past ten years and new findings continue to stream in. The challenges posed by multidisciplinary research on a developing topic have pushed me to become a more purposeful and skillful researcher.

To develop a solid theoretical foundation for my research, I needed to review literature on two topics: 1. transboundary river treaties and their effectiveness in preventing conflict and 2. prospect theory as it relates to common pool resources. Since peer-reviewed journals are the key outlet for both psychology and political science researchers, I chose to focus my search on online sources. After some preliminary source collection, I arranged a research conference with my reference librarian, Elizabeth White. During our meeting, I explained my research question and hypothesis to Elizabeth, and she guided me in identifying appropriate resources for my research. While I had learned to use truncation, search limits (such as years of publication, and/or, etc.), and cited reference searches on an earlier project, Elizabeth guided me in refining those skills and introduced me to several new strategies for online research.

I found two of these new strategies especially exciting: citation maps and subject headings searches. Elizabeth exposed me to the mechanics, strengths, and weaknesses of each of these tools during our meeting, and then in the following weeks I began to integrate these new tools into my research. For example, I learned how to enter key papers into the citation map function on the Web of Science database and to use the resulting visual aid to identify promising new sources. I could then evaluate the usefulness of each new source by the number of citations it had generated and by its abstract. Further, the subject headings search function on EBSCOhost has proven especially helpful given the multidisciplinary nature of my research: this function has allowed me to search subject headings across multiple disciplines simultaneously (for example, "prospect theory" and "common pool resources") in order to identify points of intersection between those disciplines that are relevant to my research question and hypothesis.

While these new strategies equipped me to navigate the first challenge of my project (its multidisciplinary nature), the second challenge of my project remained: the relative scarcity of established academic studies and data sets on transboundary river treaties. This particular

challenge has pushed me to develop a profound appreciation for the *human* resources available to me. For example, when open source datasets proved insufficient for my statistical tests, I contacted the database manager of Oregon State University's Transboundary Freshwater Dispute Database, who sent me a more complete dataset and with whom I have stayed in touch as my research progresses. I have corresponded with the authors of cutting edge working papers on transboundary river treaties to discuss methodological questions and to stay ahead of the latest findings. I have sought out experts in social science methodology here at UGA to answer my questions about data set management and statistical software packages. In this way, the immense human resources available to me as an undergraduate researcher have proven as indispensable to me as my technological resources. I look forward to returning the favor by sharing my own modified data set with these contacts and by submitting my findings for publication.

Although my project is still in progress (I am scheduled to finish my statistical tests and paper by the end of March), I am proud of the research skills and strategies that this project has pushed me to develop so far and I am genuinely grateful to come from a university where undergraduate research is valued and encouraged. I look forward to continuing to grow as a socio-legal researcher next year as I begin law school!

Project Abstract

This paper attempts to apply cognitive science findings on loss aversion to identify best practices for treaties governing common pool resources. Prospect theory demonstrates that decision-makers are loss-averse: decision-makers overvalue losses relative to comparable gains. Consistent with this finding, international treaties governing common pool resources should achieve greater compliance when they are structured to provide an immediate gain (commons protection treaties) than when they demand an immediate loss (public goods treaties). This paper will test this hypothesis through regression analysis on an adapted version of the Transboundary Fluvial Dispute Data set. In the interest of maintaining an interdisciplinary perspective, these findings will be analyzed in the context of anthropological literature on common action problems and riparian politics. The findings could suggest more effective structures for treaties governing international rivers specifically, and common pool resources generally.

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