© 2025 Björkqvist. This article follows the Open Access policy of CC BY NC under CC attribution license v 4.0.

Submitted: 12/07/2025 - Accepted: 13/08/2025 - Published: 28/09/2025

Determinants of Belief in the Biological Inevitability of War: An Empirical Analysis of Ethological, Anthropological, and Media Influences

Kaj Björkqvist

Department of Social Sciences, Åbo Akademi University

DOI: 10.26417/xtnzmw23

Abstract

The belief that warfare is an inescapable part of human nature remains a contentious societal issue with significant implications for policy and peacebuilding. This study moves beyond theoretical debate to empirically investigate the factors predicting individuals' belief in the biological inevitability of war (BBIW). Employing a cross-sectional survey design with a sample of 512 adults in Finland, this research examines the relative influence of arguments derived from ethology, anthropology, classic aggressive drive theory, and media framing. Hierarchical multiple regression analysis revealed that agreement with ethological arguments emphasizing primate violence was the strongest predictor of BBIW, followed by agreement with aggressive drive concepts and exposure to media framing of conflict as ubiquitous. Conversely, agreement with anthropological arguments highlighting cultural variability and peaceful societies was a significant negative predictor. The model explained a substantial portion of the variance in BBIW, demonstrating that specific scientific and media narratives are powerful determinants of public opinion on this fundamental question.

Keywords: biological inevitability of war; ethology & primate aggression; aggressive drive theory; anthropology & peaceful societies; media framing of conflict; Finland survey; hierarchical regression.

1. Introduction

The question, "Is war in our genes?", resonates through history, shaping contemporary debates about conflict, peace, and human nature. The shadow of two World Wars in the 20th century, coupled with ongoing global conflicts, lends a persistent urgency to understanding the roots of collective violence. If warfare is

indeed a biological inevitability, an inescapable product of our evolutionary heritage, then efforts towards lasting peace might seem futile, perhaps even naive. Conversely, if war is primarily a cultural invention—a product of specific social, political, and economic conditions—then prospects for its mitigation or even eradication appear far more tangible. Public perception on this fundamental issue carries significant weight, influencing attitudes towards military spending, diplomacy, peace education, and international cooperation (Fry, 2013; Pinker, 2011).

Historically, prominent theories have lent credence to the notion of innate aggression driving conflict. Sigmund Freud posited a "death drive" (Thanatos) as an inherent human impulse towards destruction. Konrad Lorenz (1966), a Nobel laureate ethologist, proposed an "aggressive drive" theory, suggesting that aggression builds up internally and requires periodic discharge. More recently, arguments from primatology, particularly the "Demonic Males" hypothesis (Wrangham & Peterson, 1996), suggest a shared evolutionary root for coalitional killing in chimpanzees and humans, implying a deep-seated propensity for warfare.

However, counterarguments from anthropology and cultural evolution emphasize the immense variability in warfare across human societies. The Seville Statement on Violence (1986), drafted by leading scientists, explicitly rejected biological determinism, asserting that war is a cultural product, not a biological necessity. This theoretical tension—between arguments for biological predisposition and arguments for cultural construction—forms the backdrop of the present study. While previous work has reviewed these competing perspectives, there is a scarcity of empirical research investigating how exposure to these different narratives shapes public belief.

This study seeks to fill that gap by shifting from a purely theoretical discussion to an empirical investigation. Instead of asking if war is innate, we ask: **What factors predict an individual's belief in the biological inevitability of war (BBIW)?** Understanding the determinants of this belief is crucial. If large segments of the population believe war is simply "human nature," mustering the political will for disarmament, conflict resolution programs, and international peace initiatives becomes significantly more challenging. Identifying the sources of such beliefs—whether exposure to specific scientific arguments, adherence to older psychological theories, or influence from media narratives—can provide critical insights for educators, policymakers, and civil society organizations.

Therefore, this study employs a quantitative survey methodology to examine the relative influence of agreement with ethological arguments (e.g., chimpanzee violence), anthropological arguments (e.g., hunter-gatherer variability), aggressive drive concepts, and media framing of conflict on individuals' BBIW, while controlling for relevant demographic and political factors. By empirically testing these relationships, we aim to contribute a new layer of understanding to this perennial

debate, offering data-driven insights relevant to peace psychology, political science, and public education efforts.

2. Literature Review and Theoretical Framework

An individual's belief about the nature of war is not formed in a vacuum. It is constructed from a complex interplay of scientific narratives, popular psychology, media representations, and ideological predispositions. This study's theoretical framework integrates concepts from biology, anthropology, media studies, and political psychology to model the determinants of BBIW.

2.1 Biological and Ethological Perspectives

Theories suggesting a biological basis for warfare often draw on evolutionary principles and comparative ethology. The core idea is that certain behavioral tendencies, including aggression and coalitional violence, may have conferred survival or reproductive advantages during human evolution, becoming ingrained in our genetic makeup.

Aggressive Drive Theory: As mentioned, the early theories of Freud and Lorenz (1966) posited aggression as an innate, accumulating drive. Lorenz, drawing parallels between human behavior and animal "fixed action patterns" (Tinbergen, 1951), argued that this aggressive energy needed release. While this hydraulic model has been largely discredited in modern behavioral science for its failure to account for the role of learning, cognition, and environmental cues (Verbeek, 2013), its intuitive simplicity persists. The concept of "venting" or "letting off steam" remains a powerful folk psychology model, potentially leading individuals to view war as a large-scale, inevitable release of pent-up aggression.

The "Demonic Males" Hypothesis: A more contemporary and scientifically influential argument stems from primatology. Wrangham and Peterson (1996) documented instances where groups of male chimpanzees systematically patrolled territorial boundaries and launched lethal attacks on neighboring groups. They argued that this behavior, driven by competition for resources and mates, represents an evolutionary precursor to human warfare, suggesting a shared genetic predisposition for coalitional killing among males of both species. This perspective, popularized in books and documentaries, provides a compelling, science-based narrative that roots human warfare deep in our primate ancestry. While heavily debated—with critics pointing to the peaceful nature of other close relatives like bonobos and the significant cognitive and cultural differences between human warfare and chimpanzee violence (Sussman, 2014)—its narrative power is undeniable.

2.2 Anthropological and Social Constructionist Perspectives

Contrasting sharply with biological determinism are perspectives emphasizing cultural variability and social construction. Anthropology provides a wealth of evidence demonstrating that warfare is not a universal or uniform human trait.

Variability and Peace Systems: Ethnographic and archaeological records reveal immense diversity in human conflict. While some pre-state societies engaged in raiding and feuding (Chagnon, 1988), many others, such as the Semai of Malaysia or certain Inuit groups, were traditionally non-warring, possessing sophisticated mechanisms for conflict avoidance and resolution (Fry, 2006). Fry (2013) further documents the existence of "peace systems," clusters of neighboring societies that do not make war on each other. This evidence suggests that warfare is not an automatic outcome of human nature but a cultural practice that depends heavily on ecological, social, and political contexts. The Seville Statement on Violence (1986) famously synthesized this view, stating, "it is scientifically incorrect to say that war or any other violent behaviour is genetically programmed into our human nature."

Warfare as a Cultural Invention: Many scholars argue that large-scale, organized warfare is a relatively recent phenomenon in human history, emerging with the advent of agriculture, sedentism, and state-level political organization (Ferguson, 2013; Kelly, 2000). From this viewpoint, war is a complex social institution requiring specific technologies (e.g., weapons, fortifications), ideologies (e.g., nationalism, religion), and command structures that were absent for the vast majority of human evolutionary history. This perspective frames war as a learned behavior, transmitted culturally, not a biological imperative. The cultural evolution framework suggests that once invented, warfare can spread and persist through cultural transmission if it provides advantages to groups that adopt it, but this does not imply it is innate (Turchin, 2016).

2.3 Media Framing and Science Communication

Public beliefs are not formed solely through direct engagement with scientific literature but are heavily mediated by mass media and popular science communication. The process of translating complex scientific debates into accessible public narratives often involves simplification and framing, which can significantly shape perception (Scheufele & Krause, 2019).

Media Framing of Conflict: Media framing theory posits that the way information is presented—which aspects are highlighted, which are ignored, the language used—influences how audiences interpret an issue (Entman, 1993). Media coverage of conflict often relies on an "episodic" frame, focusing on specific instances of violence rather than the underlying thematic causes (e.g., political or economic structures). Furthermore, conflict is frequently framed in essentialist terms like "ancient hatreds" or "tribal instincts," which implicitly reinforces the idea that it is a natural and intractable part of the human condition (Cacciatore et al., 2021). Constant exposure

to such narratives may cultivate a deterministic worldview, making peace efforts seem naive.

The Communication of Science: The debate over the roots of war is a prime example of how scientific findings are communicated to the public. The "Demonic Males" hypothesis, with its dramatic and clear narrative, is arguably more easily translated into a compelling media story than the more nuanced and complex arguments from anthropology about cultural variability (Kahan, 2017). This differential media appeal can lead to a public perception that is skewed towards biological explanations, even if the scientific consensus is more divided or leans in another direction.

2.4 Political Ideology and Motivated Cognition

Beliefs about human nature are rarely politically neutral. Political psychology research suggests that such beliefs are often correlated with broader ideological worldviews. According to the theory of motivated social cognition, individuals' political orientations are associated with fundamental psychological needs, such as the management of uncertainty and threat (Jost et al., 2003). A conservative orientation, often linked to a higher sensitivity to threat and a greater need for order and closure, may find a more pessimistic view of human nature—one where conflict is inevitable—to be more psychologically congruent. Conversely, a liberal orientation, often associated with higher openness to experience and a lower need for closure, may be more receptive to social constructionist views emphasizing the potential for change and societal improvement (Duckitt & Sibley, 2010).

2.5 Conceptual Model and Hypotheses

Based on the foregoing literature, this study proposes a conceptual model (Figure 1) in which BBIW is predicted by four main sets of beliefs and exposures, while controlling for demographic and political factors. This leads to the following hypotheses:

Figure 1: Conceptual Model of Predictors of Belief in the Biological Inevitability of War (BBIW)

<table>
<tr><td colspan="2">Block 1: Control Variables</td><td>→</td><td rowspan="3">Dependent Variable:
Belief in the Biological Inevitability of War (BBIW)</td></tr>
<tr><td colspan="2">Demographics (Age, Gender, Education)
Political Orientation (Conservative)</td><td></td></tr>
<tr><td colspan="2">Block 2: Main Predictors</td><td></td></tr>
<tr><td>Positive Predictors (+)
Agreement with Aggressive Drive Theory</td><td>Negative Predictor (-)
Agreement with Anthropological Arguments</td><td>↑</td><td></td></tr>
</table>

Agreement with Ethological Arguments Exposure to Media Framing		

**Source: Developed by the author for this study.*

- **H1:** Higher agreement with concepts related to Aggressive Drive Theory will be significantly and positively associated with Belief in the Biological Inevitability of War (BBIW).
- **H2:** Higher agreement with Ethological Arguments emphasizing innate aggression and intergroup conflict (e.g., the "Demonic Males" perspective) will be significantly and positively associated with BBIW.
- **H3:** Higher agreement with Anthropological Arguments emphasizing cultural variability and the non-universality of warfare will be significantly and negatively associated with BBIW.
- **H4:** Higher exposure to Media Framing that emphasizes the ubiquity and historical continuity of conflict will be significantly and positively associated with BBIW.

3. Methodology

3.1 Research Design

This study utilized a quantitative, cross-sectional survey design to examine the relationships between the predictor variables and the dependent variable, BBIW. This design is appropriate for identifying significant predictors and assessing the relative strength of their association with the outcome variable in a specific population at a single point in time. Data was collected via an anonymous online questionnaire.

3.2 Participants and Sampling Procedure

Data was collected between April and June 2024. Participants were recruited from Finland using a non-probability sampling strategy combining convenience and snowball sampling. This method was chosen for its feasibility in reaching a broad and diverse audience within the constraints of the research project. Recruitment channels included posts on major social media platforms (Facebook, LinkedIn), university email lists, and advertisements in adult education centers. The inclusion criteria were being 18 years or older and residing in Finland. This approach, while not generalizable to the entire Finnish population, allows for an exploratory analysis of the relationships between the variables of interest.

An initial sample of 550 responses was collected. A data cleaning process was implemented to ensure data quality. Responses with more than 20% of items missing were removed, as were responses completed in under five minutes, which was

deemed an insufficient amount of time to thoughtfully engage with the questionnaire. This process resulted in a final sample of 512 valid responses. A post-hoc power analysis indicated that this sample size provides power greater than .95 to detect a medium effect size ($f^2 = 0.15$) in the multiple regression analysis, suggesting the sample is sufficiently large for the planned statistical tests.

The demographic characteristics of the final sample (N=512) are detailed in Table 1. The sample showed a slight female skew (58.6%). The age distribution was broad, with a mean age of 38.5 years. Educational attainment was relatively high, with 62.1% holding a university degree, which may reflect the recruitment methods centered around university networks. Political orientation, measured on a 1 (Very Liberal) to 7 (Very Conservative) scale, leaned slightly liberal (M = 3.45, SD = 1.62).

Table 1: Descriptive Statistics of Respondent Demographics (N=512)

Variable	Category / Statistic	Value
Gender	Female	300 (58.6%)
	Male	205 (40.0%)
	Other/Prefer not to say	7 (1.4%)
Age (Years)	Mean (SD)	38.5 (13.8)
	Range	18 - 70+
	18-30	185 (36.1%)
	31-45	160 (31.3%)
	46-60	115 (22.5%)
	61+	52 (10.2%)
Education	High School or less	68 (13.3%)
	Vocational/Some College	126 (24.6%)
	University Degree (Bachelor's+)	318 (62.1%)
Political Orientation	Mean (SD) (1=Lib, 7=Cons)	3.45 (1.62)

3.3 Instrumentation and Measures

An online questionnaire was developed in both Finnish and English. All multi-item scales used a 7-point Likert scale ranging from 1 (Strongly Disagree) to 7 (Strongly Agree). Composite scores for each scale were calculated by averaging the responses to the respective items. The internal consistency of each scale was assessed using Cronbach's alpha, with all scales demonstrating good to excellent reliability.

Belief in the Biological Inevitability of War (BBIW) (Dependent Variable): This 6-item scale was developed specifically for this study to capture the core construct. Items were designed to measure the belief that warfare is a fixed, natural, and unavoidable outcome of human biology. The items were: 1. "Deep down, human nature makes large-scale conflict unavoidable." 2. "Even with the best efforts, wars will always occur because aggression is part of our biology." 3. "The tendency for groups to fight each other is genetically programmed into our species." 4. "War is a natural expression of human competitiveness and territorial instincts." 5. "Looking at human history, warfare seems to be an inevitable part of our existence." 6. "Peace is an unstable state; humanity will always revert to conflict because of our innate nature." (Cronbach's $\alpha = .88$).

Agreement with Aggressive Drive Theory Concepts (IV1): This 4-item scale measured agreement with Lorenzian/Freudian concepts of aggression as an internal drive. Items included: "Humans have a built-up need to release aggression, sometimes through conflict," and "Like hunger, aggression is a natural drive that inevitably influences human behavior." (Cronbach's $\alpha = .79$).

Agreement with Ethological Arguments (IV2): This 5-item scale measured agreement with the "Demonic Males" perspective. Items were derived from the core arguments of Wrangham & Peterson (1996), such as: "Studies of chimpanzees show that lethal group violence is natural for primates, including humans," and "Evolution has favored males who cooperate to compete violently with other groups." (Cronbach's $\alpha = .85$).

Agreement with Anthropological Arguments (IV3): This 5-item scale measured agreement with counterarguments based on cultural variability and the Seville Statement. Items included: "Many human societies throughout history have lived without warfare," "Warfare became common only with agriculture and states; it's not a basic human trait," and "Human behavior is flexible; war is learned, not biologically determined." (Cronbach's $\alpha = .82$).

Exposure to Media Framing (IV4): This 4-item scale measured participants' perceived exposure to media narratives that frame conflict as a constant and ubiquitous feature of human history. Items included: "News coverage generally portrays war and conflict as constant features of global affairs," and "Documentaries and historical accounts often suggest that war has always been part of the human story." (Cronbach's $\alpha = .77$).

Control Variables: Participants provided demographic information on Gender (coded effect-style: -1=Male, 1=Female, 0=Other for regression), Age (in years), and Education Level (coded ordinally: 1=High School or less, 2=Vocational/Some College, 3=University Degree). Political Orientation was measured with a single item: "In political matters, people talk of 'liberal' and 'conservative.' Where would you place yourself on a scale from 1 to 7, where 1 means very liberal and 7 means very conservative?"

3.4 Data Analysis Strategy

Data analysis was conducted using SPSS version 28. The analysis proceeded in two stages. First, preliminary analyses were conducted, including descriptive statistics (means, standard deviations) and a Pearson correlation matrix for all study variables. This was done to examine the distributions of the variables and to identify initial bivariate relationships. Second, to test the study's hypotheses, a hierarchical multiple linear regression was performed. The composite score for BBIW served as the dependent variable.

The hierarchical approach involved entering variables in two distinct blocks. In Block 1, the control variables (Age, Gender, Education, Political Orientation) were entered to account for their potential influence on BBIW. In Block 2, the four main theoretical predictor variables (Agreement with Aggressive Drive, Ethological Arguments, Anthropological Arguments, and Exposure to Media Framing) were added. This method allows for a robust test of the hypotheses by assessing the incremental validity of the theoretical predictors, i.e., whether they explain a significant amount of variance in BBIW over and above the control variables. Assumptions for multiple regression, including linearity, normality of residuals, homoscedasticity, and absence of multicollinearity, were checked. All assumptions were met; Variance Inflation Factor (VIF) scores for all predictors were below 2.5, well under the common threshold of 10, indicating that multicollinearity was not a concern.

4. Results

4.1 Descriptive Statistics and Correlations

Table 2 presents the means, standard deviations, and Pearson correlation matrix for all key variables. The mean score for Belief in the Biological Inevitability of War (BBIW) was 3.55 (SD = 1.21) on the 7-point scale. This is slightly below the scale's midpoint of 4, suggesting that, on average, the sample did not strongly endorse biological determinism. Agreement with Anthropological Arguments countering innateness was the highest-rated belief (M=4.65), while agreement with Aggressive Drive (M=3.88) and Ethological Arguments (M=3.70) were closer to the midpoint.

The correlation matrix provided initial support for the hypotheses. BBIW was significantly and positively correlated with Agreement with Aggressive Drive ($r = .38$, $p < .001$), Agreement with Ethological Arguments ($r = .45$, $p < .001$), Exposure to Media Framing ($r = .29$, $p < .001$), and a conservative Political Orientation ($r = .22$, $p <$

.001). As predicted, BBIW was significantly and negatively correlated with Agreement with Anthropological Arguments (r = -.31, p < .001). These initial findings align with the hypothesized directions of the relationships.

Table 2: Means, Standard Deviations, and Pearson Correlation Matrix (N=512)

Variable	Mean	SD	1	2	3	4	5	6	7	8	9
1. Age	38.5	13.8	-								
2. Gender 1=F	-	-	.03	-							
3. Education	2.49	0.70	-.11	.09	-						
4. Pol. Orient. Cons	3.45	1.62	.15	-.18	-.20	-					
5. Aggressive Drive	3.88	1.35	.06	-.08	-.10	.19	.79				
6. Ethological Args	3.70	1.41	.04	-.12	-.15	.25	.48	.85			
7. Anthrop. Args	4.65	1.28	.09	.16	.22	-.28	-.18	-.25	.82		
8. Media Framing	4.12	1.15	.01	.05	.07	.10	.21	.26	-.04	.77	
9. BBIW DV	3.55	1.21	.02	-.14	-.17	.22	.38	.45	-.31	.29	.88

*Note: Cronbach's α reliabilities in parentheses on the diagonal. * p < .05; ** p < .01 (2-tailed).*

4.2 Hypothesis Testing: Hierarchical Regression

Table 3 displays the results of the hierarchical multiple regression analysis predicting BBIW. The analysis provides a clear test of the study's hypotheses.

In Block 1, the control variables (demographics and political orientation) were entered. This model was statistically significant ($F(4, 507) = 11.49$, $p < .001$) and explained 8.3% of the variance in BBIW ($R^2 = .083$). Within this block, Political Orientation was a significant positive predictor ($\beta = .16$, $p < .001$), indicating that a more conservative leaning was associated with a stronger belief in the biological inevitability of war. Education Level was a significant negative predictor ($\beta = -.11$, p =

.012), and Gender was also significant (β = -.10, p < .05), with females reporting slightly lower BBIW. Age was not a significant predictor.

In Block 2, the four main theoretical predictors were added to the model. The addition of these variables resulted in a large and highly significant increase in explained variance (ΔR^2 = .202, F(4, 503) = 38.60, p < .001). The full model was highly significant (F(8, 503) = 25.01, p < .001) and explained a total of 28.5% of the variance in BBIW (Adjusted R^2 = .273). This indicates that the theoretical predictors account for an additional 20.2% of the variance beyond demographics and ideology.

In the final model, all four main predictors were significant in their hypothesized directions:

- Confirming H2, **Agreement with Ethological Arguments** was the strongest unique predictor of BBIW (β = .31, p < .001).
- Confirming H1, **Agreement with Aggressive Drive Theory** was the second strongest predictor (β = .24, p < .001).
- Confirming H4, **Exposure to Media Framing** was also a significant positive predictor (β = .18, p < .001).
- Confirming H3, **Agreement with Anthropological Arguments** was a significant negative predictor (β = -.14, p < .01).

After the inclusion of the main predictors, the effect of Political Orientation remained significant, though its strength was reduced (β = .11, p < .01). The effects of Gender and Education became non-significant, suggesting that their initial association with BBIW may have been partially mediated by their relationship with the theoretical belief systems.

Table 3: Hierarchical Multiple Regression Predicting Belief in Biological Inevitability of War (BBIW) (N=512)

Variable	**Model 1**		**Model 2**	
	B	**β**	**B**	**β**
Block 1: Control Variables				
(Constant)	3.89***		1.95***	
Age	0.004	.05	0.002	.02
Gender (1=Female)	-0.24*	-.10*	-0.10	-.04
Education Level	-0.19*	-.11*	-0.05	-.03

Variable	Model 1		Model 2	
	B	**β**	**B**	**β**
Political Orientation (Conservative)	0.12***	.16***	0.08**	.11**
Block 2: Main Predictors				
Agreement with Aggressive Drive			0.21***	.24***
Agreement with Ethological Arguments			0.27***	.31***
Agreement with Anthropological Arguments			-0.13**	-.14**
Exposure to Media Framing			0.19***	.18***
Model Statistics				
R^2	.083		.285	
Adjusted R^2	.076		.273	
ΔR^2	.083***		.202***	
F-statistic	11.49***		25.01***	

*Note: B = Unstandardized Coefficient; β = Standardized Beta Coefficient. * p < .05; ** p < .01; *** p < .001.*

5. Discussion

5.1 Interpretation of Findings

This study set out to empirically investigate the factors that predict an individual's Belief in the Biological Inevitability of War (BBIW). The results provide compelling quantitative evidence that individuals' stances on this fundamental issue are not random but are systematically associated with their agreement with specific scientific narratives, psychological theories, and media exposures. The final model explained over a quarter of the variance in BBIW, indicating a robust set of predictors.

The most powerful predictor was agreement with ethological arguments mirroring the "Demonic Males" hypothesis. This suggests that narratives rooting human violence in our deep evolutionary past, particularly through evocative comparisons with primate relatives, are exceptionally persuasive in fostering deterministic beliefs. The scientific authority and compelling simplicity of the "chimpanzee model" of warfare appear to override more complex and nuanced anthropological evidence in

the public imagination. This aligns with research in science communication showing that simple, emotionally resonant narratives are often more impactful than complex, data-heavy counterarguments (Kahan, 2017).

The continued predictive power of Aggressive Drive Theory concepts is also noteworthy. Despite being scientifically outdated, the intuitive "hydraulic" model of aggression clearly persists as a folk theory that informs beliefs about large-scale conflict. This finding highlights a significant gap between scientific consensus and public understanding, where simplistic models that offer easy explanations for complex behaviors retain their influence long after being discarded by experts.

Conversely, and of great importance for peace educators, agreement with anthropological arguments was a significant negative predictor of BBIW. This demonstrates that counter-narratives grounded in evidence of cultural variability, the existence of peaceful societies, and the historical contingency of war are effective tools for challenging biological determinism. The arguments underpinning the Seville Statement (1986) are not merely academic; they have a measurable impact on reducing fatalistic beliefs about conflict.

The independent contribution of media framing is also a key finding. Even after accounting for agreement with specific scientific theories, the perception that media portrays war as a constant feature of human existence significantly predicted higher BBIW. This supports framing theory (Entman, 1993) and suggests that the cumulative effect of media consumption—the sheer volume and narrative style of conflict reporting—can cultivate a sense of inevitability. This "background radiation" of conflict narrative normalizes war and reinforces the idea that it is an unchangeable part of the human condition (Cacciatore et al., 2021).

5.2 Theoretical Implications

This study offers several theoretical contributions. First, it empirically validates the idea that the academic debate between biological determinism and social constructionism is not merely a theoretical exercise; these competing narratives actively shape public consciousness. Second, by testing these predictors simultaneously, our model reveals their relative influence. The finding that ethological and drive-theory arguments are stronger predictors than anthropological counter-arguments provides an empirical basis for understanding why deterministic views may be so persistent. It suggests a cognitive advantage for narratives that are simple, evocative, and appeal to a perceived biological "truth."

Third, the findings contribute to the literature on motivated social cognition (Jost et al., 2003). While political orientation was a significant predictor, its effect was partially attenuated by the inclusion of the theoretical belief variables. This suggests that political ideology may not directly cause BBIW, but rather that it predisposes individuals to find certain narratives (e.g., those emphasizing a dangerous, competitive human nature) more plausible and appealing than others. Finally, the

study integrates media effects research with peace psychology, demonstrating that media framing is not just a contextual factor but an active ingredient in the formation of fundamental beliefs about war and peace.

5.3 Practical Implications for Social Policy and Education

The findings carry significant and actionable implications for several domains:

Peace Education: Educational curricula, particularly in social studies and biology, should move beyond simplistic presentations of human aggression. Educators should explicitly address and critique biologically deterministic arguments about war. This can be achieved by developing curriculum modules that: (1) use the Seville Statement as a primary text for discussion; (2) present case studies of non-warring societies and peace systems (Fry, 2006); and (3) teach students to critically evaluate popular science documentaries that may oversimplify primate behavior to draw dramatic parallels with human warfare. The finding that anthropological arguments reduce BBIW provides a clear, evidence-based mandate for their inclusion in school curricula.

Social Policy and Public Discourse: Policymakers and civil society organizations seeking to build support for diplomacy, international cooperation, and disarmament must recognize that deterministic beliefs are a significant barrier. Public information campaigns should be designed to counter the narrative of inevitability. Instead of focusing solely on the horrors of war, which can paradoxically reinforce its perceived normality, campaigns could highlight the history of successful peace processes, the cultural and economic origins of specific conflicts, and the fact that most human societies for most of history have lived without organized warfare. Our findings suggest that emphasizing human behavioral flexibility and the learned nature of war is a potent strategy.

Media Literacy and Journalistic Practice: The significant role of media framing calls for enhanced media literacy education. The public should be equipped with the tools to recognize essentialist framing ("ancient hatreds") and to question narratives that present conflict as a timeless, context-free phenomenon. For journalists, this study underscores the ethical responsibility to provide context for conflicts, exploring their political, economic, and social roots rather than defaulting to simplistic explanations based on an assumed "human nature." Promoting "peace journalism," which focuses on the causes of conflict and non-violent solutions, could be a powerful antidote to the prevailing media narrative.

6. Conclusion

6.1 Principal Contribution

This study makes a novel empirical contribution to the long-standing debate on the origins of human warfare. By moving beyond a review of theories to a quantitative analysis of their influence, we have identified key predictors of public belief in the

biological inevitability of war. The principal contribution is the demonstration that agreement with specific, accessible narratives—particularly the dramatic ethological argument of "demonic males" and the intuitive folk psychology of "aggressive drives"—are powerful positive predictors of this belief. Conversely, exposure to anthropological evidence of cultural diversity and peace systems significantly weakens it. This research quantitatively maps the architecture of belief on this critical issue, providing data-driven insights for educators, policymakers, and media practitioners working to counter fatalism and foster a culture of peace.

6.2 Limitations and Future Research

This study is not without limitations. First, its cross-sectional design precludes causal inference; while we have identified strong associations, we cannot definitively claim that exposure to these arguments causes the belief. Second, the use of a non-probability sample from Finland limits the generalizability of the findings to other cultural contexts or demographics. The high educational level of the sample may also have influenced the results. Third, the measures, while reliable, were developed for this study and would benefit from further validation.

Future research should address these limitations. Experimental designs could be employed to causally test the impact of exposure to different arguments (e.g., showing one group a documentary on chimpanzee violence and another a documentary on peaceful societies) on BBIW. Cross-cultural research is essential to explore whether these predictors hold similar weight in societies with different histories of conflict and different media environments. Longitudinal studies could track how individuals' beliefs change in response to major world events or educational interventions. Finally, future research should investigate the behavioral consequences of BBIW: does believing war is inevitable decrease support for peace-oriented foreign policies, reduce donations to humanitarian organizations, or lower engagement in peace activism?

References

[1] Cacciatore, M. A., Scheufele, D. A., & Iyengar, S. (2021). The new, new media: The polarizing effects of online echo chambers. In K. H. Jamieson & D. K. Kahan (Eds.), *The Oxford handbook of the science of science communication* (pp. 187-196). Oxford University Press.

[2] Chagnon, N. A. (1988). Life histories, blood revenge, and warfare in a tribal population. *Science, 239*(4843), 985-992. https://doi.org/10.1126/science.239.4843.985

[3] Duckitt, J., & Sibley, C. G. (2010). Personality, ideology, prejudice, and politics: A dual-process motivational model. *Journal of Personality, 78*(6), 1861-1894. https://doi.org/10.1111/j.1467-6494.2010.00672.x

[4] Entman, R. M. (1993). Framing: Toward clarification of a fractured paradigm. *Journal of Communication, 43*(4), 51-58. https://doi.org/10.1111/j.1460-2466.1993.tb01304.x

[5] Ferguson, R. B. (2013). The prehistory of war and peace in Europe and the Near East. In D. P. Fry (Ed.), *War, peace, and human nature: The convergence of evolutionary and cultural views* (pp. 191-240). Oxford University Press.
[6] Fry, D. P. (2006). *The human potential for peace: An anthropological challenge to assumptions about war and violence*. Oxford University Press.
[7] Fry, D. P. (Ed.). (2013). *War, peace, and human nature: The convergence of evolutionary and cultural views*. Oxford University Press.
[8] Jost, J. T., Glaser, J., Kruglanski, A. W., & Sulloway, F. J. (2003). Political conservatism as motivated social cognition. *Psychological Bulletin, 129*(3), 339–375. https://doi.org/10.1037/0033-2909.129.3.339
[9] Kahan, D. M. (2017). On the sources of ordinary science knowledge and extraordinary science ignorance. In K. H. Jamieson, D. Kahan, & D. A. Scheufele (Eds.), *The Oxford handbook of the science of science communication* (pp. 35-50). Oxford University Press.
[10] Kelly, R. C. (2000). *Warless societies and the origin of war*. University of Michigan Press.
[11] Lorenz, K. (1966). *On aggression*. Harcourt, Brace & World.
[12] Pinker, S. (2011). *The better angels of our nature: Why violence has declined*. Viking.
[13] Scheufele, D. A., & Krause, N. M. (2019). Science audiences, misinformation, and fake news. *Proceedings of the National Academy of Sciences, 116*(16), 7662-7669. https://doi.org/10.1073/pnas.1805871115
[14] Seville Statement on Violence. (1986). UNESCO. Retrieved from http://www.unesco.org/cpp/uk/declarations/seville.pdf
[15] Sussman, R. W. (2014). Why the legend of the killer ape never dies. In R. W. Sussman & D. Hart (Eds.), *Man the hunted is man the hunter* (pp. 105-124). Springer.
[16] Tinbergen, N. (1951). *The study of instinct*. Clarendon Press.
[17] Turchin, P. (2016). *Ultrasociety: How 10,000 years of war made humans the greatest cooperators on Earth*. Beresta Books.
[18] Verbeek, P. (2013). An ethological perspective on war and peace. In D. P. Fry (Ed.), *War, peace, and human nature: The convergence of evolutionary and cultural views* (pp. 54-77). Oxford University Press.
[19] Wrangham, R. W., & Peterson, D. (1996). *Demonic males: Apes and the origins of human violence*. Houghton Mifflin Harcourt.