Media Consumption and War Risk Perception:

How News Exposure Relates to Public Threat Assessment

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Abstract

In recent years, media coverage of war and geopolitical conflicts has significantly increased, possibly influencing how the public perceives risk, especially the risk of war. This study examined how media consumption relates to the perceived risk of war in university students. The aim was also to investigate how different forms and ways of media consumption relate to war-related risk perception as well as to examine whether knowledge about internation conflicts relates to this.

The research was primarily based on theories such as the affect heuristic as well as the availability bias and emphasized the emotional component of risk perception especially in the context of war and international conflicts.

Data were collected using a cross-sectional online survey with primarily Dutch and German university students (N = 82). The survey assessed their perceived war risk, media consumption habits, as well as their perceived and objective knowledge on ongoing international affairs.

Results showed that more than the amount and frequency of overall media consumption, the content consumed was of great importance for war-risk perception. Selective exposure and interaction with war related content on social media was linked to higher perceived risk of war. Consumption of national television news was associated with lower perceived risk. Neither perceived nor objective knowledge on international conflicts significantly predicted war-risk perception.

The findings are consistent with the theoretical assumption of the affect heuristic, suggesting that emotionally engaging content may shape risk perception and emphasized the need for media literacy measures for detecting and handling emotional framing in war related news and preventing public anxiety.

Introduction

With the rising of international armed conflicts and geopolitical tensions in recent years, war-related news have begun to dominate media coverage, influencing public perception of security and risk. While climate-related disasters have nearly doubled over the past two decades, war and state-based armed conflicts are also currently among the top global risks (World Economic Forum, 2025). In today's digital era and with increased access to instant news, 24-hour coverage and social media updates, individuals are constantly exposed to news about these threats, including the threat of war, also shaping how the public assesses war risk. This study therefore aims to answer the question of: How does media consumption relate to the perceived risk of war*?*

Risk and Risk Perception

To understand this relation, it is important to understand the psychological processes of risk perception. Risk perception means an individual's subjective judgment of a risk's characteristics, so the subjective judgement of the likelihood and severity of a hazard (Slovic, 1987). Further insight into how risks are objectively measured by individuals is provided by the psychometric paradigm by Slovic (1987), according to which individuals judge risks based on three determinants: dread, unknown risk, magnitude. Risks that score high on these determinants typically are rated as higher in risk and literature has shown that war-related threats, next to terrorism score highest on these as they are emotionally intense, often unpredictable, and associated with large-scale consequences (Al-Rawad & Khattab, 2014).

Furthermore, individuals often do not judge risks in such an objective and analytic way but what explains their risk perception better is the use of heuristics. One important

heuristic for forming such a perception of risk is the affect heuristic (Finucane et al., 2000). When individuals asses risk, judgements and decisions about the threat are made based on emotions. According to this, if a person has a positive feeling about a situation for example, they tend to judge it as less of a risk than if they had negative feelings towards it, in this case the perceived risk would be higher. This affect heuristic enables individuals to intuitively make judgements on risk levels but can also lead to biased and distorted risk perceptions, unequal of the objective risk, especially when individuals lack knowledge or the topic is emotionally charged, like the threat of war (Finucane et al., 2000). Therefore emotions may override the more objective assessment of risk.

Another cognitive bias and psychological mechanism that can shape risk perception is the availability heuristic (Tversky & Kahneman, 1973). According to this, perceived probability of an event taking place is based on how easily the individual can recall similar scenarios. While, like the affect heuristic, this can help individuals to make intuitive judgments about risks, the presence of vivid and/or media amplified content for example can lead to a biased perception of risk. The more frequently people are exposed to a particular event, the more mentally available it becomes, thus increasing their risk perception.

While the affect heuristic and the availability bias are distinct mechanisms, there is a connection with each other. They interact in the sense that emotionally charged content triggers affective reactions in individuals but it also becomes more mentally available. Emotionally intense coverage thus may simultaneously heighten the feeling of threat, also increasing the perceived likelihood of the event, amplifying risk perceptions especially in highly emotional subjects such as war.

Media Consumption and its Psychological Impact

Nowadays with much higher availability of news also via online news and social media, exposure to threat and crisis related content is at its peak and repeated exposure

through every platform is almost inevitable (Rozanov & Rutz, 2021). Besides providing the information, media consumption can influence attitudes, emotions and through repeated exposure the individual's perception can be shaped. According to the cultivation theory of Gerbner et al. (1980), prolonged consumption of media influences the consumers worldview and can actually lead to the so-called *Mean World Syndrome* of people perceiving the world to be more dangerous after extensive consumption of violence-related media.

While the emotional aspects of risk perception can be influenced by media exposure, media usage such as news consumption can also inform consumers and increase their factual understanding of threats. Research by Shehata and Strömbäck (2021) showed however that learning from social media is limited, especially in comparison to traditional news sources. This finding shows that while social media exposes its users to emotionally charged news, its informational value is limited and falls short in fostering understanding of its content, especially of complex issues like war and conflict. Traditional news sources on the other hand like national television news or newspaper might be more effective for building objective and informed risk perceptions.

Furthermore, the way media presents information is of importance, as this influences public opinion. According to Scheufele and Tewksbury (2006), there are three main models the media influences the public opinion, two of those are particularly important for the context of this study. The most important of these three models is framing, meaning to influence how people think about an issue by selecting and emphasizing specific aspects of a story. An example for this would be framing a war as liberation instead of aggression, leading to different perceptions on the issue in the media consumers.

Another way of influencing the public opinion mentioned by Scheufele and Tewksbury (2006) is the setting of an agenda by deciding what topics get attention, thus influencing what

consumers think about. For example by reporting heavily on war scenarios, the public gets confronted with it more and it is seen as an important issue.

Overall these insights suggest that media consumption can not only affect individuals through the information that are conveyed but als by shaping emotions through mechanisms like framing, repeated exposure, and the type of media content.

Media and Risk Perception

As noted above, individuals oftentimes do not base their risk perception on the objective aspects, likelihood and severity, but use heuristics. Two heuristics of importance are the before mentioned affect heuristic as well as the availability bias and these two heuristics may be triggered by news consumption. A central determinant of risk perception specifically in the context of news consumption, is the affect heuristic (Finucane et al., 2000). News coverage that amplifies fear for example could reinforce the perceived risk of war by inducing negative emotions, leading to higher perceived risk. Research by Lauriola et al. (2024) proves this by showing that the subjective risk perception of war risk from media consumers was highly correlated to the affective tone in media coverage on war. They found that, especially among frequent news consumers, the more emotionally charged the media coverage, the higher the perceived probability of a catastrophic conflict, aligning with the affect heuristic (Finucane et al., 2000).

The emotional impact of fear-based media coverage, especially concerning potential conflicts, is a significant factor in shaping public risk perception and also a broad phenomenon not only restricted to the research conducted within the framework of the affect heuristic. Underlining this impact of the emotional factor that media consumption has, according to the Extended Parallel Process Model, fear appeals are designed to evoke an emotional response that can either lead to engagement with the threat or avoidance if

individuals feel they have little control over the situation (Witte, 1992). In the context of war-related media, dramatic visuals, urgent headlines, and worst-case scenario framing may heighten feelings of insecurity, reinforcing a increased perceptions the risk of war. This aligns with the affect heuristic, showing how emotionally charged media coverage evokes strong affective responses and thus influences risk perception.

The aforementioned availability bias is also of importance in the context of media consumption and ins influence on risk perception. The constant flow of information through news and social media, and because of this, the availability of vivid, emotional war related content could heighten the availability of scenarios in people's minds, heightening the perceived risk due to the availability heuristic (Tversky & Kahneman, 1973). For example, in the context of war, if media outlets heavily feature war-related news and imagery, the availability heuristic can lead to an overestimation of the likelihood of similar conflicts. This parallels to the aforementioned framing effect and highlights that repeated and selective emphasis on specific content in media further shape the perception of war-risk in individuals (Scheufele & Tewksbury, 2006).

On the other hand, research by Kozman et al. (2021) showed that consumption of war-related media is not always connected with fear or anxiety, but if the media consumed provides useful and empowering information, consumers may even experience hope, security and pride. What they also found was that people tend to consume more media if they feel uncertain about a war or a crisis. While general media use (GMU), so the amount of media one consumes, is found to not have a significant impact on risk perception, a positive correlation has been found between selective media exposure and public risk perception, so the kind of media that gets consumed (Niu et al., 2020). An especially strong connection has been found to be between health and food risk related media exposure and public perceived

risk. For this reason, in the present study a distinction between general media use and selective media use was made.

Although prior studies have explored the relationship between media exposure and public risk perception in contexts such as health risks (Niu et al., 2020) and crisis uncertainty (Kozman et al., 2021), fewer studies have focused specifically on war-related risk perception. While these risks might seem similar, there may be a difference worth studying, which could be explained on the basis of the way individuals judge risks according to Slovic (1987). While health risks for example also score high on the determinants dread, uncontrollability and magnitude, war-related risks may score even higher, especially on uncontrollability as it is harder for citizens to protect themselves and also scores high on magnitude, potentially resulting in large-scale consequences and destruction (Al-Rawad & Khattab, 2014). Furthermore, research has yet to comprehensively examine whether different media platforms—such as social media versus traditional news—have varying effects on the perception of war risk.

Present study

Based on the reviewed literature, risk perception does not only influence media exposure through cognitive processes but also emotional mechanisms. Individuals use heuristics to evaluate complex and emotional topics like war. For example, according to the affect heuristic, content which triggers negative affective responses like fear tends to be evaluated with higher perceived risk (Finucane et al., 2000). The availability heuristic expands on this by stating that the more frequent a topic is covered by media, the more mentally available it is, heightening risk perception further (Tversky & Kahneman, 1973). At the same time, prior research highlights that not all media types evoke the same responses and more emotionally charged content on social media for example do not inform users like

traditional news media does (Niu et al., 2020; Shehata & Strömbäck, 2021). This further facilitates the use of heuristics and subjectively heightened perception of risk, suggesting that frequency as well as the type of media consumed influence the activation of heuristic processes, heightening perceived risk of war. Additionally, greater factual knowledge may buffer against the emotionally driven distortion of risk (Kozman et al., 2021).

Building on the existing literature and in order to close the aforementioned gap, this study aims to examine the relationship between media consumption and the perceived risk of war. Specifically, it investigates how different types of media exposure relate to individuals' perception of war threats and whether knowledge on current international events also relates to this. The research question guiding this study is: *How does media consumption relate to the perceived risk of war?* For the target group of this research, university students were chosen, as young adults are particularly active in consuming social and online media (Pew Research Center, 2024). Based on the theoretical insights and empirical findings, the following hypotheses were formulated:

H1: More frequent media consumption is associated with a higher perceived risk of war.

H2: Social media use is more strongly correlated with war-related risk perception than traditional news sources.

H3: Higher levels of knowledge about international conflicts (objective and perceived) are associated with lower perceived risk.

By examining the relationship between media consumption and perceived risk of war, this study seeks to contribute to the growing body of research on media-driven risk perception. By incorporating different media types (social media vs. traditional news) and the role of knowledge on international conflicts and war related affairs, this research aims to provide a more nuanced understanding of how public perceptions of war threats are shaped.

Methods

Participants

Participants were recruited through the University of Twente's SONA System, as well as student group chats, to complete the online questionnaire on Qualtrics. A total of 95 participants filled in the survey, out of which 92 also completed the survey. Out of these, 82 participants fit the criteria of being university students (49 female, 30 male, 3 diverse). The average age was 21 years (range 18-25, Median age 21), of two participants the age was not known as they reported being above the age of 25. Participants were primarily from Germany (51.2%) and the Netherlands (40.2%). Most reported their highest level of completed education to be high school or equivalent (92.7%).

Procedure and Materials

Measures

Risk perception: An altered version of the disaster risk perception scale by Kiymis and Kaya (2025) was used to measure perceived war risk. This construct consisted of five subscales and interitem consistency was evaluated using Cronbach's alpha based on raw item scores. Items were rated by participants using a 5-point Likert-scale (1 = strongly disagree – 5 = strongly agree).

The first subscale, *Exposure/Impact*, consisted of 9 items and showed very good reliability (α=.86). Examples of these items are: "*When a war breaks out in my country, l may be harmed.*" and "*When a war breaks out in my country, my quality of life may be adversely affected*.".

For the *Possibility* subscale, internal consistency was low (α=.51), possibly because it consisted of only two items. The items were: "*There may be war in the country where I live*

in the near future." and "*I am more likely to be exposed to a war risk compared to other risks in the country where I live."*

The *Uncontrollable* subscale had good reliability (α=.86) and consisted of three items, for example: "*In a war that may break out in the country where I live, my shelter needs may not be met*." and "*In a war that may break out in the country where I live, my nutritional needs may not be met."*.

Likewise did the *Worry/Fear* Subscale also have good reliability (α=.85) and consisted of six items like: "*I am worried about the effects that a war can have on the country where I live*" and "*It scares me to think about the wars that have occurred in nearby countries.*"

Lastly, the *Vulnerability* Subscale showed acceptable internal consistency (α=.78). It consisted of 4 items, for example: "*When a war breaks out in the country that I live in, I may not be able to help my family*." and "*When a war breaks out in the country that I live in, I may be inadequate in voluntary first aid practice*s."

To calculate an overall war risk perception score, the mean of all five subscales was computed for each participant. The resulting scale showed excellent internal consistency, with Cronbach's α = .87, 95% CI [.82, .91] (M = 3.65, SD = 0.61).

Media Use: In order to measure media use habits, participants in total were asked seven questions on their general social media use, their news consumption on social media, their interaction with war related content on social media, their general television use, their general internet use and their frequency of watching local television news, as well as their frequency of watching national television news. The questions were adapted from Intravia et al. (2017) who originally used them for investigating the relationship between social media consumption and fear of crime. An example question is: "In a typical week, how much time do you spend on social media (such as Facebook, Instagram, TikTok, X, or Reddit)?" and

participants were able to answer using predefined time categories: none, 60 minutes or less, 61 to 120 minutes, 121 to 180 minutes, 181 to 240 minutes, 241 minutes or more. The answer possibilities for the question on interaction with war related content were *very often, often, occasionally, rarely, never*.

Knowledge about International Conflicts : The perceived knowledge was assessed using the question "How knowledgeable do you consider yourself about international conflicts (like the Ukraine-Russia War)?" and objective knowledge was measured using eight multiple choice questions on the Ukraine-Russia War (e.g., "*Which event led to international sanctions against Russia*?")

All survey items, including those for risk perception, media use, and knowledge, are provided in Appendix B, C and D

Procedure

This study received ethical approval from the Ethics Committee of the University of Twente. The survey was presented online through Qualtrics, and took about 15 minutes to complete. Participants who accessed the survey through the SONA-System of the University of Twente received 0.25 SONA credits for completing the survey. Before being confronted with the actual questionnaire, participants were presented with an informed consent form that outlined the purpose of the study, their rights and confidentiality of their data. Also the possibility to not continue was given and only those who agreed were able to proceed to the survey. The survey itself consisted of four parts. First demographic questions such as their age, gender, country of residence and their interest in politics were posed. Following the demographic questions, the altered version of the disaster risk perception scale was presented with the subscales in order of: Exposure/Impact, Possibility, Uncontrollable, Worry/ Fear and Vulnerability. Then In the next section, participants were asked about how much time they

typically spend on media platforms, including television, internet and social media. In this media consumption section, participants were also asked how often they see or interact with war related news on these platforms. The last section focused on knowledge of the participants in regards to international conflicts (Ukraine-Russia) and participants first rated how knowledgeable they believe themselves to be about international conflicts, then they completed a short multiple-choice quiz to assess their factual knowledge on the Ukraine-Russia conflict ("What year did the Ukraine-Russia war start?", "Which event led to international sanctions against Russia?", "Who is the current president of Ukraine?", etc.). There are no manipulations, tasks or sensitive questions and the research is non-invasive and does not pose any known risk to participants.

Results

In order to examine how media consumption as well as knowledge on international war related affairs relate to war-risk perception of university students, descriptive and inferential statistics were conducted.

The overall risk perception score (mean of all subscales) ranged from 2.00 to 4.78, with a mean of 3.65 (SD = 0.61), indicating a moderate perceived risk among participants. For the media use variables, answer possibilities represented time ranges (e.g., “60 minutes or less” , "121 to 180 minutes"). These categorial variables were converted to numeric scores from 1 to 6, 1 representing *no time spent* and 6 representing *241 minutes or more*, higher values indicating more time spent on the respective media activity. The means and standard deviation can be found in table 1.

For perceived knowledge about international conflicts (1 = not knowledgeable at all, 4 = very knowledgeable), the mean was 2.57 (SD = 0.74), indicating slight to moderate self-assessed knowledge among participants. For objective knowledge (0–8 correct answers on

the multiple-choice questions), the mean score was 5.66 (SD = 1.35), suggesting moderate factual knowledge among participants.

Correlation analysis was conducted using Pearson correlation coefficients between all media use variables, the two knowledge variables (perceived and objective) and the total war-risk perception score. Results showed a moderately positive correlation between war-related content on social media and risk perception (r=0.35). A slightly negative correlation was found between national news consumption and risk perception (r=-0.25). All other media use variable had weaker, non-significant correlations. The Pearson correlations between the media use variables and war-risk perception scores are shown in Table 1.

Table 1

Mean, Standard Deviation and Pearson Correlations Between Media Use Variables, Knowledge Variables and Risk Perception

Variable	M	**SD**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
1. General social media use	5.55	0.89	—								
2. News consumption on social media	4.31	1.68	.54	—							
3. Interaction with war-related content	2.99	1.14	.20	.12	—						
4. General television use	2.33	1.47	.27	.18	.00	—					
5. General internet use	5.73	0.82	.41	.20	.14	.20	—				
6. Local television news use	1.51	1.00	.19	.30	.05	.48	.09	—			
7. National television news use	1.65	1.10	.15	.06	.10	.53	–.22	.55	—		
8. Perceived knowledge	2.57	0.74	-.07	-.10	.01	-.02	-.05	.00	.18	—	
9. Knowledge score	5.66	1.35	-.12	-.15	.05	-.14	-.06	-.30	-.21	.31	—
10. Risk perception score	3.65	0.61	–.08	.14	**.35**	–.17	–.02	.02	–.25	-.07	-.08

Note. *N* = 82. Bold values indicate significant correlations with risk perception (>|.30|).

To further analyse this and asses the predictive value of media use and knowledge variables on risk perception, a multiple linear regression analysis was conducted including nine predictors: general social media use, news consumption on social media, interaction with war-related content, general television use, general internet use, local television news use, national television news use, perceived knowledge, and objective knowledge. The model showed statistical significance, $F(9,72) = 3.97$, $p < .001$, explaining 33.1% of the variance in risk perception ($R^2 = .33$, adjusted $R^2 = .25$). As shown in Table 2, engagement with war related content on social media (Q14) was a significant positive predictor, $B = 0.24$, $\beta = .45$, $t(72) = 4.41$, $p < .001$, 95% CI [0.13, 0.35]. National television news use on the other hand was a significant negative predictor, $B = –0.27$, $\beta = –.50$, $t(72) = –3.32$, $p = .001$, 95% CI [–0.44, –0.11]. All other media use and knowledge variables were non-significant predictors, as can also be seen in Table 2. This means that the more war-related content individuals saw, coupled with less national television news consumption, the greater their perceived risk of war. Neither of the knowledge variables was a significant predictor of risk perception

Table 2

Multiple Linear Regression Predicting War Risk Perception from Media Use and Knowledge Variables

Predictor	**B**	**β**	**t**	**p**	**95%-CI**
(Intercept)	4.69	-	7.73	< .001	[3.48, 5.90]
General social media use	-0.11	-0.17	-1.30	.199	[-0.29, 0.06]
News consumption on social media	0.06	0.16	1.29	.201	[-0.03, 0.14]
Interaction with war-related content	**0.24**	**0.45**	**4.41**	**<.001**	**[0.13, 0.35]**
General television use	0.01	0.03	0.22	.829	[-0.09, 0.12]
General internet use	-0.14	-0.19	-1.57	.121	[-0.32, 0.04]
Local television news use	0.13	0.21	1.59	.116	[-0.03, 0.28]
National television news use	**-0.27**	**-0.50**	**-3.32**	**.001**	**[-0.44, -0.11]**
Perceived knowledge	0.05	0.06	0.56	.580	[-0.13, 0.22]
Objective knowledge score	-0.08	-0.17	-1.58	.119	[-0.18, 0.02]

Note. $N = 82$. B = unstandardized coefficient, b = standardized coefficient. Bold rows indicate significant predictors at $p < .01$.

Discussion

This study aimed to examine the how media use and knowledge about international conflicts relate to the perception of war-related risk in university students. The findings only partially supported the proposed hypotheses:

Hypothesis 1

H1: More frequent media consumption is associated with a higher perceived risk of war.

The first hypothesis was only partially supported. The results showed that participants who more frequently interacted with war related content on social media, also had a higher war risk perception. Other types of media consumption on the other hand did not have a similar relation. This indicates that not the frequency of media consumption or general media use, but rather the type of content individuals engage with is of importance. Specifically, more frequent consumption of war related content relates to higher perceived risk of war. This also aligns with the availability bias (Tversky & Kahneman, 1973), according to which higher exposure to vivid scenarios, in this case through interaction on social media, lead to higher availability in individuals' minds, ultimately heightening risk perception. Also, the affect heuristic could explain this, as emotional responses, triggered by exposure to war related content, heighten risk perception (Finucane et al., 2000).

Interestingly, participants who stated to watch national television news more frequently also had a slightly lower risk perception. This could possibly be because of the more neutral news coverage of traditional news media evoking less fear in consumers than the more emotionally charged content on social media, underlining the importance of the content of media for perception of war risk. This is in line with the findings of Kozman et al. (2021), who found that when war related media also provides useful information, consumers might even experience positive affective responses like hope, also underlining the importance of emotional factors for the forming of war risk perception.

Hypothesis 2:

H2: Social media use is more strongly correlated with war-related risk perception than traditional news sources.

Hypothesis 2 was partly supported. Like mentioned before, the highest relation on perceived risk had consumption of war-related content on social media, while participants who stated using traditional news sources like national television news even showed a slightly lower war risk perception. But as stated above, general social media use and news consumption on social media was not related to participants risk perception, indicating that hypothesis 2 can only partly be supported. While these where no predictors of risk perception, the type of media that gets consumed does matter and war related media consumption was associated with higher risk perception in participants. Further does this finding align with the research of Niu et al. (2020), who found that general media use had less of an impact on risk perception while selective media exposure was related to higher risk perception.

Hypothesis 3:

H3: Higher levels of knowledge about international conflicts (objective and perceived) are associated with lower perceived risk.

The last hypothesis was not supported. Neither perceived knowledge nor objective knowledge of the participants had an influence on their war-related risk perception. This suggest that knowledge does not reduce perceived risk. While research by Shehata and Strömbäck (2018) showed that consumers learn more from traditional media consumption, the effect that knowledge has on objectively forming risk perception possibly is too low and emotional factors may override this analytical attempt of risk assessment. Knowledge and factual information on war risk alone is not enough to counter the affective impact of

emotionally charged media portrayals of war, which is consistent with the affect heuristic, underlining the importance of the emotions in risk perception (Finucane et al., 2000).

To address the research question of how media consumption relates to the perceived risk of war, the findings show that not the frequency of media consumption but the content, specifically the selective exposure to emotionally charged war related content, is related to higher war risk perception and that the content is more important than the exposure. In contrast, general social media use or traditional media use related to slightly lower perception of war-risk. Both objective and perceived knowledge did not relate to perceived risk, highlighting that emotional processing via heuristics may override factual understanding in the context of war-risk perception, further supporting theories like the affect heuristic and the availability bias (Finucane et al., 2000; Tversky & Kahneman, 1973).

Strengths and Limitations

Strengths of this study were multiple. One key strength of this study is its focus on war-related risk perception. This area remains relatively underexplored in psychological research. Although there is much existing literature with focus on health or environmental risks (Niu et al., 2020), war related risk might differ from these based on their particularly high levels of dread, uncontrollability and magnitude, making war-related risk a meaningful domain for future research (Al-Rawad & Khattab, 2014; Slovic, 1987).

Another strength is the differentiation between various types of media use, which made the nuanced findings about the influence of different types of media on war-related risk perception possible. While some studies have already done so, many still treat media use and/or media exposure as a broad variable without differentiation. By distinguishing between general media use, traditional news consumption and also engagement with war related content on social media, it was revealed that specific types of media content are more

predictive of perceived war risk than just frequency, moving beyond simplistic media variables and capturing real-world media behaviour.

Another strength was the inclusion of both perceived as well as objective knowledge. By differentiating between the two, a more differentiated analysis of the role of knowledge in risk perception was possible. While perceived knowledge captures how informed participants felt, this subjective feeling could be biased and by including both, their actual knowledge was reflected. This helped in testing whether factual information can function as a buffer against emotionally driven, biased risk perception arising through heuristics. Their inclusion enhanced construct validity and while neither type of knowledge significantly predicted risk perception, future research could explore the psychological mechanisms through which knowledge might influence risk perception.

Limitations were for example the limited causal interpretation of results because of the cross-sectional design of this study. It remains unclear whether the perceived war risk is actually heightened because of media consumption, specifically consumption and engagement with war-related content, or whether individuals who already have heightened perceived war risk also seek war-related content on social media. Because of this cross-sectional design, also the potential influence of a confounding variable that possibly influences both media consumption and risk perception, for example personality traits, was also not measured and remains unknown. To address these, future research should also make use of longitudinal or experimental study designs on this topic.

Furthermore, were all measures based on self-report and self-reported measures are prone to be biased (Brenner & DeLamater, 2016). It is possible that participants have under- or overestimated their media use habits or that they unreliably rated the war-risk perception items because of social desirability bias. In order to avoid such possibly biased results, future research should employ objective sources of data like tracking of screen-time.

Additionally, the generalizability of the results is limited because of the sample consisting of only university students. Media habits, political interests and general knowledge levels of university students may differ from the general population (Peterson, 2001; Pew Research Center, 2024), which is why in order to increase generalizability, future research should also include more broad and diverse samples.

The last limitation is the lack of external validation on the knowledge questions, making it possible that the items may have been too easy or not balanced enough. The multiple-choice questions were developed specifically for this study, and it is possible that they did not adequately captures the true knowledge of participants, possibly explaining the absence of a relationship between knowledge and perceived risk. In order to ensure construct validity, future research should use validated or peer-reviewed knowledge assessments.

Practical and Theoretical Implications

The findings offer multiple practical and theoretical implications regarding risk perception and media consumption. A practical implication would be that the findings highlight the importance of media literacy efforts aimed at raising awareness about the emotional impact of news consumption, especially in schools or universities for example. These educational institutions could incorporate training on critically evaluating emotionally charged and risk related content on social media as well as help mitigate biased risk perception. This could be done in form of targeted workshops or courses organized by professionals in this field.

Furthermore, should journalists and also social media platforms that such content gets posted on, reflect on the tone and emotional framing of war related content to not contribute to public anxiety. Journalists and media professionals should be encouraged to focus more on neutral and informative reporting rather than emotionally charging such content. Social media platforms should be especially mindful of war-related content that is overly dramatic and

emotionally sensationalized or even unverified and take these down as they also may increase anxiety in the public.

Theoretical implications include that the results are in line with the affect heuristic (Finucane et al., 2000) and underline its usefulness as a framework for understanding risk perception on the basis of media influence. The results showing that engagement and war-related content was linked to higher perceived war-risk while knowledge had no significant relation supports the notion that emotion, rather than ration assessment is an important factor for risk assessment.

Further, results emphasize the importance of the kind of media that gets consumed, not just the amount and frequency of media consumption. The findings showed that media types are not equal and that the type and content of media relates to higher perceived risk, not the amount of general media consumption. This supports that theoretical models should be refined by for example incorporating emotional framing and also specific content aspects of media use.

Finally, further theoretical questions are raised by the lack of a significant role of knowledge in relation to war-risk perception. Future research should focus on answering the question of under which conditions knowledge can buffer emotional responses and future theoretical models should consider interaction effects between knowledge, emotional framing and individual differences such as political awareness or anxiety.

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Appendix A: R script

```
library(tidyverse)

str(MCWR)
summary(MCWR)
View(MCWR)  # zeigt die Tabelle in groß

# Alle Zeilen mit Status "Survey Preview" oder "Preview" entfernen
MCWR_clean <- MCWR[MCWR$Status != "Survey Preview" & MCWR$Status != "Preview", ]

# Nur abgeschlossene Umfragen behalten
MCWR_clean <- MCWR_clean[MCWR_clean$Finished == "True", ]

#Consent
MCWR_clean <- MCWR_clean[MCWR_clean$`Informed Consent` == "YES", ]

#Bereinigen
MCWR_clean <- subset(MCWR_clean, select = -c(StartDate, EndDate, Status, RecordedDate, ResponseId,
DistributionChannel, UserLanguage))

#Likert
MCWR_clean$Q6_1 <- factor(MCWR_clean$Q6_1,
                  levels = c("Strongly disagree", "Somewhat disagree", "Neutral", "Somewhat agree", "Strongly
agree"),
                  ordered = TRUE)

#Anschauen
str(MCWR_clean$Q6_1)

#andere auch
MCWR_clean <- MCWR_clean %>%
  mutate(across(Q6_1:Q6_9, ~ factor(.x,
                           levels = c("Strongly disagree", "Somewhat disagree", "Neutral", "Somewhat agree", "Strongly
agree"),
                           ordered = TRUE)))

#Likert
likert_levels <- c("Strongly disagree", "Somewhat disagree", "Neutral", "Somewhat agree", "Strongly agree")

MCWR_clean <- MCWR_clean %>%
  mutate(across(Q6_1:Q6_9, ~ as.numeric(factor(.x, levels = likert_levels, ordered = TRUE))))

#Den Rest
MCWR_clean <- MCWR_clean %>%
  mutate(across(c(Q7_1:Q7_2, Q8_1:Q8_3, Q9_1:Q9_6, Q10_1:Q10_3),
          ~ factor(.x,
                levels = c("Strongly disagree", "Somewhat disagree", "Neutral", "Somewhat agree", "Strongly agree"),
                ordered = TRUE)))

#
subscale_vars <- c(
  "Q7_1", "Q7_2",
  "Q8_1", "Q8_2", "Q8_3",
  "Q9_1", "Q9_2", "Q9_3", "Q9_4", "Q9_5", "Q9_6",
  "Q10_1", "Q10_2", "Q10_3", "Q10_4"
)

MCWR_clean <- MCWR_clean %>%
  mutate(across(all_of(subscale_vars),
          ~ as.numeric(factor(.x,
                           levels = likert_levels,
                           ordered = TRUE))))
```

```
#Studenten
unique(MCWR_clean$Occupation)

MCWR_clean <- MCWR_clean %>%
  filter(Occupation == "University student (e.g., Bachelor's, Master's, PhD)")

#safe cleaned set
write.csv(MCWR_clean, "MCWR_clean.csv", row.names = FALSE)

###################
#Descriptives

#Age
MCWR_clean$Age <- as.numeric(MCWR_clean$Age)
summary(MCWR_clean$Age)

#Interest
unique(MCWR_clean$Interest)
# Richtige Reihenfolge der Labels definieren
interest_levels <- c("1 - Not interested at al",
                     "2 - slightly interested",
                     "3 - moderately interested",
                     "4 - very interested")

# Als ordinale Faktorvariable anlegen und dann in numerisch umwandeln
MCWR_clean$Interest_num <- as.numeric(factor(MCWR_clean$Interest,
                                     levels = interest_levels,
                                     ordered = TRUE))
summary(MCWR_clean$Interest_num)

#Anderen
table(MCWR_clean$Gender)
table(MCWR_clean$Country)
table(MCWR_clean$Education)
table(MCWR_clean$Occupation)

#package installieren
install.packages("psych")
library(psych)

#Make subscales
exposure_vars <- c("Q6_1", "Q6_2", "Q6_3", "Q6_4", "Q6_5", "Q6_6", "Q6_7", "Q6_8", "Q6_9")
possibility_vars <- c("Q7_1", "Q7_2")
uncontrollable_vars <- c("Q8_1", "Q8_2", "Q8_3")
worry_vars <- c("Q9_1", "Q9_2", "Q9_3", "Q9_4", "Q9_5", "Q9_6")
vulnerability_vars <- c("Q10_1", "Q10_2", "Q10_3", "Q10_4")

#describe scales
describe(MCWR_clean[exposure_vars])
describe(MCWR_clean[possibility_vars])
describe(MCWR_clean[uncontrollable_vars])
describe(MCWR_clean[worry_vars])
describe(MCWR_clean[vulnerability_vars])

# Variablen als Faktor behandeln
media_vars <- c("Q12", "Q13", "Q14", "Q16", "Q18", "Q19", "Q20")
MCWR_clean[media_vars] <- lapply(MCWR_clean[media_vars], factor)

# Häufigkeitstabellen (absolute Zahlen)
for (var in media_vars) {
  cat("\n", var, "\n")
  print(table(MCWR_clean[[var]]))
```

```
}

# Prozentwerte (relative Häufigkeiten)
for (var in media_vars) {
  cat("\n", var, "\n")
  print(round(prop.table(table(MCWR_clean[[var]])) * 100, 1))
}

#perceived knowledge
# Häufigkeitstabellen anzeigen
table(MCWR_clean$Q21)

#MC Questions
# Richtigkeit als TRUE/FALSE codieren
MCWR_clean$Q22_correct <- MCWR_clean$Q22 == "Russia’s annexation of Crimea and later invasion of Ukraine"
MCWR_clean$Q23_correct <- MCWR_clean$Q23 == "2022"
MCWR_clean$Q24_correct <- MCWR_clean$Q24 == "Volodymyr Zelenskyy"
MCWR_clean$Q25_correct <- MCWR_clean$Q25 == "Crimea"
MCWR_clean$Q26_correct <- MCWR_clean$Q26 == "Poland"
MCWR_clean$Q27_correct <- MCWR_clean$Q27 == "United States"
MCWR_clean$Q28_correct <- MCWR_clean$Q28 == "North Atlantic Treaty Organization (NATO)"
MCWR_clean$Q29_correct <- MCWR_clean$Q29 == "International Criminal Court (ICC)"

# Häufigkeiten je Frage
sapply(MCWR_clean[, c("Q22_correct", "Q23_correct", "Q24_correct", "Q25_correct",
                      "Q26_correct", "Q27_correct", "Q28_correct", "Q29_correct")],
       table)

#Knowledge Scores
# TRUE = 1, FALSE = 0 → Gesamtpunktzahl berechnen
MCWR_clean$Knowledge_Total <- rowSums(MCWR_clean[, c("Q22_correct", "Q23_correct", "Q24_correct",
"Q25_correct",
                                                     "Q26_correct", "Q27_correct", "Q28_correct", "Q29_correct")],
                                      na.rm = TRUE)

# Deskriptive Statistik zum Gesamtscore
summary(MCWR_clean$Knowledge_Total)

##########################################
#Cronbachs Alpha

# Cronbach's Alpha für jede Subskala
alpha(MCWR_clean[exposure_vars])
alpha(MCWR_clean[possibility_vars])
alpha(MCWR_clean[uncontrollable_vars])
alpha(MCWR_clean[worry_vars])
alpha(MCWR_clean[vulnerability_vars])

####
# Skalenmittelwerte berechnen und neue Spalten hinzufügen
MCWR_clean <- MCWR_clean %>%
  mutate(
    Exposure_mean = rowMeans(select(., all_of(exposure_vars)), na.rm = TRUE),
    Possibility_mean = rowMeans(select(., all_of(possibility_vars)), na.rm = TRUE),
    Uncontrollable_mean = rowMeans(select(., all_of(uncontrollable_vars)), na.rm = TRUE),
    Worry_mean = rowMeans(select(., all_of(worry_vars)), na.rm = TRUE),
    Vulnerability_mean = rowMeans(select(., all_of(vulnerability_vars)), na.rm = TRUE)
  )

# Nur die neuen Mittelwert-Spalten auswählen
scale_means <- MCWR_clean %>%
  select(Exposure_mean, Possibility_mean, Uncontrollable_mean, Worry_mean, Vulnerability_mean)
```

```
# Korrelationsmatrix berechnen
cor_matrix <- cor(scale_means, use = "pairwise.complete.obs")

# Ausgabe
print(cor_matrix)

#Media use -> numeric
media_time_levels <- c("none", "60 minutes or less", "61 to 120 minutes",
                       "121 to 180 minutes", "181 to 240 minutes", "241 minutes or more")

MCWR_clean <- MCWR_clean %>%
  mutate(across(c("Q12", "Q13", "Q16", "Q18", "Q19", "Q20"),
                ~ as.numeric(factor(tolower(.x), levels = media_time_levels))))

#War related
freq_levels <- c("Never", "Rarely", "Occasionally", "Often", "Very often")

MCWR_clean$Q14 <- as.numeric(factor(MCWR_clean$Q14, levels = freq_levels))

#Gesamtscore scale
MCWR_clean <- MCWR_clean %>%
  mutate(risk_perception_score = rowMeans(select(., all_of(c(
    exposure_vars, possibility_vars, uncontrollable_vars, worry_vars, vulnerability_vars
  ))), na.rm = TRUE))

#CrA gesamt score
alpha(MCWR_clean[, c(exposure_vars, possibility_vars, uncontrollable_vars, worry_vars, vulnerability_vars)])

# Liste der Mediennutzungsvariablen
media_vars <- c("Q12", "Q13", "Q14", "Q16", "Q18", "Q19", "Q20", "risk_perception_score")

# Korrelationsmatrix (mit Pairwise-Handling für NAs)
cor_matrix <- cor(MCWR_clean[media_vars], use = "pairwise.complete.obs")

# Ergebnis anzeigen
round(cor_matrix, 2)

###################
#regression

model_media <- lm(risk_perception_score ~ Q12 + Q13 + Q14 + Q16 + Q18 + Q19 + Q20, data = MCWR_clean)
summary(model_media)

####
#Regression including knowledge variables
#zuerst  Werte anschauen
unique(MCWR_clean$Q21)

#umwandeln
knowledge_levels <- c("Not knowledgeable at all", "Slightly knowledgeable",
                      "Moderately knowledgeable", "Very knowledgeable")

MCWR_clean$Q21_num <- as.numeric(factor(MCWR_clean$Q21, levels = knowledge_levels))


model_full <- lm(risk_perception_score ~ Q12 + Q13 + Q14 + Q16 + Q18 + Q19 + Q20 + Q21_num +
Knowledge_Total,
                 data = MCWR_clean)

summary(model_full)

sum(MCWR$Progress == 100)
```

```
#descriptives

#risk perception
summary(MCWR_clean$risk_perception_score)
sd(MCWR_clean$risk_perception_score, na.rm = TRUE)

#media
media_d <- c("Q12", "Q13", "Q14", "Q16", "Q18", "Q19", "Q20")

# Schleife für Mittelwert + SD
for (var in media_d) {
  cat("\n", var, "\n")
  print(summary(MCWR_clean[[var]]))
  cat("SD:", sd(MCWR_clean[[var]], na.rm = TRUE), "\n")
}

#perceived knowledge
summary(MCWR_clean$Q21_num)
sd(MCWR_clean$Q21_num, na.rm = TRUE)

#MC
summary(MCWR_clean$Knowledge_Total)
sd(MCWR_clean$Knowledge_Total, na.rm = TRUE)

sd(MCWR_clean$risk_perception_score, na.rm = TRUE)

#korrelationstabelle all variables
cor_vars <- c("Q12", "Q13", "Q14", "Q16", "Q18", "Q19", "Q20",
"Q21_num", "Knowledge_Total", "risk_perception_score")
cor_matrix1 <- cor(MCWR_clean[cor_vars], use = "pairwise.complete.obs")
round(cor_matrix, 2)

View(round(cor_matrix1, 2))

confint(model_full)

install.packages("lm.beta")
library(lm.beta)

model_beta <- lm.beta(model_full)
summary(model_beta)
```

Appendix B: Altered Disaster Risk Perception Scale: (Kiymis & Kaya, 2025)

https://doi.org/10.1017/dmp.2025.38

(Subscale Exposure)

1. When a war breaks out in my country, l may be harmed.
2. When a war breaks out in my country, may suffer economically.
3. When a war breaks out in my country, environmental health problems may increase.
4. When a war breaks out in my country, my health may suffer.
5. When a war breaks out in my country, my quality of life may be adversely affected.
6. When a war breaks out in my country, I may be injured.
7. I may be exposed to the risks of war in my country.
8. When a war breaks out in my country, my family may be affected.
9. When a war breaks out in my country, its effects can be devastating.

(Subscale Possibility)

1. There may be war in the country where I live in the near future.
2. I am more likely to be exposed to a war risk compared to other risks in the country where I live.

(Subscale Uncontrollable)

1. In a war that may break out in the country where I live, my shelter needs may not be met.
2. In a war that may break out in the country where I live, my nutritional needs may not be met.
3. In a war that may break out in the country where l live, the capacity (for protection and aid of the local government may be insufficient.

(subscale worry)

1. I am worried about the effects that a war can have on the country where I live.
2. I am afraid when I think that there will be a war in the country where l live.
3. It scares me to think about the wars that have occurred in nearby countries.
4. When I see the number of people who lost their lives in wars on television, internet, or newspapers, I get scared.

5. The thought of my family being affected by a war in the country that I live in frightens me.
6. When a war breaks out in the country that l live in, the thought of the small number of emergency response staff scares me.

(subscale vulnerability)

1. When a war breaks out in the country that I live in, I may not be able to help my family.
2. When war breaks out in the country that I live in, I may be inadequate in voluntary search and rescue applications.
3. When a war breaks out in the country that I live in, I may be inadequate in voluntary first aid practices.
4. When a war breaks out in the country that i live in, I feel vulnerable because of my physical disability.

Appendix C: Altered Media Usage Measure (Intravia et al., 2017)

https://doi.org/10.1016/j.chb.2017.08.047

In a typical week, how much time do you spend...

...on social media (such as Facebook, Instagram, TikTok, X, or Reddit)?

...reading or watching news stories on social media (such as Facebook, Instagram, TikTok, X, or Reddit)?

On social media, how often do you read, watch, post, or interact with (such as share, like, or comment on) posts, stories or news involving war or international conflicts?

In a typical week, how much time do you spend...

...watching television?

...using the internet?

...watching a local television news broadcast?

...watching a national television news broadcast?

Appendix D: Knowledge Questions

Perceived Knowledge:

How knowledgable do you consider yourself about international conflicts (like the Ukraine-Russia War)?

Knowledge Multiple-Choice Questions:

Which event led to international sanctions against Russia?

What year did the Ukraine-Russia war start?

Who is the current president of Ukraine?

Which region was annexed by Russia in 2014?

Which country accepted the most Ukrainian refugees since the start of the war?

Which country has sent the most financial and military aid to Ukraine since 2022?

Which international organization has provided military support to Ukraine?

What major international body has investigated war crimes in Ukraine?

AI Statement

During the preparation of this work the author used ConsensusAI in order to brainstorm as well as ChatGPT and in order to brainstorm, develop argumentation, summarise as well as for minor revisions for conciseness and clarity of writing. After using this tool/service, the author reviewed and edited the content as needed and takes full responsibility for the content of the work.