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SOCIAL JUSTICE AND RUSSO-UKRAINIAN WAR: A FACIAL EXPRESSION ANALYSIS OF A TELEVISION-MEDIATED EMOTIONAL REACTION

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Abstract
The ongoing Russo-Ukrainian War devastated civilians' lives, amounting to ever-increasing casualties. As time went on, the once-active support from Western countries began to diminish. Because most people hear of the tragedy through television news, the aim of this research is to produce empirical evidence that can be used to devise strategies to bridge potential supporters and victims to help civilians weather the storm. A total of 66 people participated in the research, and a combination of regression and facial expression analysis was used. The result showed that people's sensitivity to social justice is explained by the number of children they have and the depth of their friendship. In other words, having someone to love positively influences one's perception of social justice. Also, people were most likely to be engaged, sentimental, and feel sad when they watched the video content televising the destruction of homes in war-stricken regions.
Keywords: Ukraine, War Aid, Facial Expression, Biometric Analysis, Conflict.

I. Introduction

The ongoing war between Russia and Ukraine is devastating innocent civilians in Ukraine. As time wore on, the once active support from the western countries has begun to diminish. There are many causes for this declining support, but the changes in public opinions should be of particular concern. The global economic crisis caused by the post-pandemic environment, coupled with rampant hyperinflation, made it difficult for Western countries to continue supplying their resources and support they once generously did.

This diminishing support not only jeopardizes Ukraine's war effort but also serves Russia's interests at best. Moreover, it makes dangerous precedents, instigating other authoritarian regimes to infringe upon neighboring countries for their own benefits. Therefore, it is important to inform the public of the suffering and devastating faced by Ukrainian civilians to prevent these undesirable consequences. One effective approach is to televise the sufferings of innocent civilians and the war-torn areas.

This dilemma leads to this important question: How do people respond to different forms of televised wartime sufferings? Answering this question may help us strategize ways to better support the war victims. Historically, the only method to address such questions was through survey administration. Fortunately, recent improvements in tools and biometric data analysis methods have made it possible to measure viewers' responses by examining their emotional reactions while consuming various forms of war-related news.

Among these innovative methods, facial expression analysis that tracks emotional changes provide the most accurate and relevant insights into this research. Unfortunately, there has not been much research done to assess viewers' emotional response to war-related news contents. In order to close this gap, this research uses both conventional and new biometric data analyses. The aim of this research is to produce empirical data that can be used to strategize ways to televise broadcasting materials that could garner public support to help innocent civilians weather through the storm.

Body Text

Capturing Emotion and Behavioral Characteristics via Facial Expression

According to the American Psychological Association (2019) emotion is defined as "complex reaction patterns involving experiential, behavioral, and physiological elements

with which individuals deal with a personally significant matter or event." Emotions are powerful forces that influence our physiological, cognition, and behavior (Lench & Carpenter, 2018), but how we feel about external or internal stimuli often lies beyond our control. Underlying what stimuli lead to what emotional reactions can offer useful knowledge. Here, facial expression analysis can offer valuable indicators to measure different levels of emotional reaction. Our facial expressions are displayed through movements of facial muscles whose energy supplied by the nerves. And because it is visible indicator, facial expression offers objective measurements of emotions (Venkitakrishnan & Wu, 2023).

Facial communication has been viewed as a signal of emotional state, and it highlights the similarity of facial configurations (Ekman, 1992; Ekman et al., 1969). And this is called Basic Emotions Theory, which refers to our inclination to outwardly express emotions (Ekman, 1992). Recently, there has been a growing awareness that facial expression displays not only emotions but also other aspects of human behaviors and intent. Known as the Behavioral Ecological View, it sees facial expression as a social tool that communicates motivations or intents that are necessarily connected with emotional realm (Fridlund, 1994). Therefore, the behavioral data that can be extracted from facial expressions should be expanded to encompass a broader spectrum of human expressions.

Social Justice Perception about War Crime

The concept of social justice remains elusive in many regions throughout the world. In a broader context, social justice encompasses a multifaceted concern including (a) the equitable distribution of benefits and burdens within a society, (b) the establishment of procedures, norms, and rules that are aimed at safeguarding the fundamental rights and liberties of individuals within the society, and (c) the universal imperative for all human beings to be treated with dignity and respects (Jost and Kay in 2010). In essence, social justice consists of three key dimensions: "distribute,", procedural," and "interactional." But how do people respond when they see the complete deprivation of social justice enforced by brutal force? In a democratic society, the force that restricts other people's access to basic rights is penalized. And this is called "restorative justice." The mechanisms of restorative justice are in place in a democratic society. But, in the wartime, the social justice is stripped down by invaders who surge into the country with military force. The absence of social justice becomes difficult to discern amidst the chaos. In such instances, more extreme and primitive forms of social justice emerge. Unfortunately, the violators, or war criminals, are rarely brought to justice despite their heinous acts against humanity.

People live away from the war-torn regions may feel helpless or indifferent. Some argue that there is nothing that they can do about the tragedy. In fact, these people' opinions hold powerful sway over the course of a war effort. The widespread anti-war sentiments played a pivotal role in bring the Vietnam War to an end. The outcry against inhumane war crimes led to the establishment of the Geneva Conventions. Therefore, the collective voice of the global community, when it is channeled into the conflict, can serve as a powerful force for a positive change.

Why Televising Ukrainian Sufferings?

Many people wondered why the Russian public endorses the ongoing atrocities unfolding in Ukraine, while turning a blind eye to the crimes against committed by Russian forces. Authoritarian regimes exercise strict control over the media, shaping the public narrative. This is a striking contrast to the more liberal news consumption in democratic countries. Besides, the people living under the authoritarian regimes rely on the news as a primary source of information consumption (Volkov & Goncharov, 2019). Russian television news is carefully curated to mold public opinion (Lipman, 2009). In contrast, a highly educated population tends to approach television content with a crucial eye. They are less susceptible to manipulation of their beliefs or values. While this characteristic is strength of democratic societies, it can also be vulnerability, as it necessitates a commitment to ethical and honest journalism or media. False manipulation of public opinion goes against the

democratic values, which hinge on transparency and responsibility. We should note that a threat to democratic values and principles may stem from a lack of concern of involvement in the suffering of democratic societies around the world. In this regard, the global dissemination of news about the war between Russia and Ukraine assumes importance. If the sufferings of Ukrainian spin out of our attention, authoritarian regimes may feel embolden to continue perpetrating their atrocities against weaker neighbors.

Research Questions

What demographic characteristics are associated with social justice perception and compassion?
What personal qualities explain people's sensitivity to social justice?
How do people feel about different types of war crimes?

II. Methods

To address the above research questions, we extracted video content televising the tragedies that Ukrainian people are facing because of the Russian invasion. Also, to understand our sample in detail, a survey was administered after the respondents completed viewing the video. A total of 66 people participated in the facial analysis research, but one person did not wish to fill out the survey; the respondent's wish was respected. The respondents were given complete freedom while participating in the research so that they may be free of any pressures. They were informed that their responses would not be shared with third parties to ensure the objectivity of the responses. Each respondent participated voluntarily and gave consent for data collection.

Table 1. Descriptive Statistics

Variable	N	ean	SD	Min.	Max.
Gender	65	5	.50	0	1
Age	65	.20	15.44	10	72
Married	65	5	.50	0	1
Education	65	11	1.73	1	6
SES	65	40	1.37	3	9
Military Experience	65	3	.42	0	1
Number of Children	65	02	1.04	0	3
Number of Sibling	65	51	1.05	0	5
Number of Friends	65	.03	15.37	3	100
Extroverted	65	2	.50	0	1
Sociable	65	42	.74	1.75	5
Friendship	65	62	.84	1	5
Justice Sensitivity	65	31	.66	1.80	4.8
Compassionate	65	92	.63	2	5
Empathetic	65	83	54	2.5	5

Table 1 shows the demographics of the sample. Females constituted 55%. On average, the respondents were in their mid-30s (Mean = 36.20, SD = 15.44). About 55% of them were married (SD = .50). And they were mostly college-educated (SD = 1.73) and reported their socioeconomic status to be slightly above average (Mean = 6.40, SD = 1.37). 23% of the respondents had a military experience (SD = .42). They have an average of one child (Mean = 1.02, SD = 1.04). They have an average of 1.51 siblings (SD = 1.05) and 13.03 friends (SD = 15.37). 42% of them described themselves as extroverted (SD = .50). They reported their sociability to be in the middle range (Mean = 3.42, SD = .74). Their friendliness is to be 3.62 (SD = .84). Their sensitivity for social justice was somewhere in the middle (Mean = 3.31, SD = .66). They described themselves to be fairly compassionate (Mean = 3.92, SD = .63) and empathetic (Mean = 3.83, SD = .54).

III. Results

Table 2. Cronbach's Alpha of Personal Qualities

Variables	Sample Question Items	Cronbach's alpha
Sociable	I am sociable. I can approach and talk to strangers easily. I can make con versions with new people effortlessly. I get along well with most people.	.84
Value Friends	I easily empathize with friends who have problems. My friends easily share their secrets because I am trustworthy.	.84
Justice	I support social justice and efforts to achieve it. I will participate in protests for social justice if the opportunities arise. I'm willing to make sacrifices for social justice. We all have a duty for social justice.	.81
Compassion	It pains me to see people crying because of misfortune. I will to lessen the burdens of people struggling with life's predicaments. I get angry when I see victims suffering because of injustice prevailing in our society. I aspire to help people undergoing difficulties.	.81
Empathy	I always act while considering how other people might feel about me. I always speak while considering how other people might feel about me. I easily understand other people's viewpoints. I can predict how other people would react to my words or actions.	.76

The sample question items used in the study are shown in Table 2. We calculated Cronbach's alpha coefficient to evaluate each scale's internal consistency. According to Field (2013), a value of 0.7 or greater is typically regarded as acceptable, and a minimum threshold of 0.8 is advised when using psychometrics. All constructs have alpha coefficients of 0.8 or greater, as shown in Table 2, indicating that they have significantly more than 50% of covariance and can therefore be combined into a single variable.

Table 3. Pair-wise Correlation

	Female	age	married	Education	SES	Military	#Child	#Sibling	#Friend	extroverted	SOCIAL	FRIEND	JUSTI	COMPAS
age	.13													
married	.38***	.75***												
Education	.24	.69***	.70***											
SES	.17	.08	.22	.01										
Military	-.61***	.23	-.10	.03	-.16									
#Child	.37***	.64***	.88***	.61***	.22	-.11								
#Sibling	.20	.39**	.17	.13	.22	-.06	.11							
#Friend	.14	-.06	-.06	-.29*	.15	-.09	-.07	.10						
extrove	.07	-.04	.07	-.09	.21	-.09	-.04	.10	.21					

rted													
SOCIABLE	.25*	.10	.17	.12	.39**	-.19	.09	.13	.19	.55***			
FRIENDLY	.29*	.25*	.33**	.33**	.28*	-.25*	.20	.03	-.01	.45***	.54**		
JUSTICE	.16	.26*	.22	.05	.12	-.05	.30*	.05	.10	.03	.19	.31*	
COMPASS	.23	.26*	.34**	.09	.35**	-.37**	.34**	.09	.17	.05	.15	.31*	.45***
EMPATHY	.35**	.01	.13	.15	.34**	-.37**	.09	.01	.08	.37**	.61**	.51**	.11	.12

p < .05 * p < .01 ** p < .001***

We then explored various correlations regarding personal attributes. Females were positively correlated with sociability (r = .25, p < .05), friendliness (r = .29, p < .05), and empathy (r = .35, p <.01). Age is positively correlated with friendliness (r = .25, p < .05), sensitivity to social justice (r = .26, p <.05), and compassion (r = .26, p <.05). Marriage has a positive correlation with friendliness (r = .33, p < .01) and compassion (r = .34, p < .01). Education has a positive correlation with friendliness (r = .33, p < .01). Socioeconomic status has a positive correlation with sociability (r = .39, p < .01), friendliness (r = .28, p <.05), compassion (r = .35, p < .01), and empathy (r = .34, p < .01). Military experience has a negative correlation with friendliness (r = -.25, p < .05), compassion (r = -.37, p < .01), and empathy (r = -.37, p < .01). The number of children has a positive correlation with the sensitivity to social justice (r =.30, p < .05) and compassion (r = .34, p < .01). One thing to note here, is that while the number of children is positively correlated with the sensitivity to social justice and compassion, the number of siblings or friends were not correlated with any of the sensitivity measures. Being extroverted is positively correlated with sociability (r = .55, p <.001) and friendliness (r = .45, p < .001), and empathy (r = .37, p < .01). Sociability has a positive correlation with friendliness (r = .54, p < .001) and empathy (r = .64, p < .001). Friendliness has a positive correlation with the sensitivity to social justice (r = .31, p < .05), compassion (r = .31, p < .05), and empathy (r = .51, p <.001). Finally, the sensitivity to social justice has a positive correlation with compassion (r = .45, p < .001).

Table 4. Regression Model Predicting Social Justice Sensitivity

Unstandardized Coefficient					
Social Justice	**B**	**Standard Error**	**Standardizedt**		**p-value**
Const.	.80	.82		.97	.34
Married	-.45	.38	-.34	-1.19	.24
Education	-.08	.07	-.20	-1.13	.27
Military Expe.	.32	.20	.21	1.61	.11
# of Children	.35	.16	.55	2.19	.03
# of Siblings	.03	.07	.04	.36	.72
# of Friends	.00	.01	.04	.30	.76
Extroverted	-.21	.19	-.16	-1.07	.29
Sociable	.10	.15	.11	.70	.49
Friendship	.26	.13	.33	2.05	.045
Compassion	.37	.14	.36	2.65	.01
Empathy	-.02	.19	-.02	-.10	.92

To see the connection between independent variables and people's social justice sensitivity, a regression model was fitted. The R2 value of the model was 0.35, indicating that approximately 35% of the variance in social justice sensitivity can be explained by the independent variables included in the model. The regression was model was more

predictable than a model using the mean values of the independent variables. The regression result showed that the number of children significantly predicts social justice sensitivity. Specifically, holding other variables constant, there is a predict increase of 0.35 in the number of children for every one-unit increase in the social justice sensitivity, t (65) = 2.19, p = .03. And the intimacy of one's friendship significantly predicted the dependent variable in the model. Holding other variables constant, there is a predicted increase of 0.26 for every one-unit increase in the social justice sensitivity, t (65) = 2.05, p = .045. Lastly, compassion significantly predicted the dependent variable. Holding other variables constant, there is a predicted increase of 0.37 for every one-unit increase in the social justice sensitivity, t(65) = 2.65, p < .01.

Table 7. Variance Inflation Factor

	VIF	**1/VIF**
Married	6.77	.15
Number of Children	5.06	.20
Education	2.69	.37
Sociable	2.16	.46
Friendship	2.10	.48
Empathy	1.97	.51
Extroverted	1.75	.57
Compassion	1.49	.67
Military Experience	1.37	.73
Number of Friends	1.24	.80
Number of Sibling	1.09	.92
	2.52	

To measure the possibility of multicollinearity in the regression model, we examined the variance inflation factor, as recommended by James et al. (2013). A VIF value greater than 10 indicates a high correlation between the independent variables, suggesting that there is multicollinearity. Fortunately, we found no VIF value greater than 10. These findings suggest that the estimates of the regression coefficients in the model are reliable.

Table 8. Normality Assumption Check

Variable	**Observation**	**Skewness**	**Kurtosis**	**Adj. Chi2**	**Prob. > Chi2**
Residuals	65	.97	.59	.29	.87

To assess the normality of the regression model, examined the skewness and kurtosis of the residuals. The skewness of the residuals was 0.97, which is well below the threshold of 2, and the kurtosis was 0.59, which was well below the threshold of 7. These results indicate that the normality assumption of the regression model is in the safe range, and the distribution of the residuals is reasonably close to a normal distribution.

Table 9. Facial Expression Analysis of Engagement

Engagement	**order**	**Mean**	**SD**
Family Separation	2nd	14.82	25.30
Sexual Assaults	3rd	13.94	21.81
War Trauma of Veterans	4th	13.46	18.29
Destruction of Residence	1st	15.78	20.63

Finally, we measured respondents' facial expressions. Other than the emotional constructs described below, additional parameters, including joy, disgust, contempt, fear, and others, were also measured. However, these emotions were deemed irrelevant to the focus of this analysis. Each video had duration of about 30 seconds.

Figure 1. A Sample of Emotional Indices Measured & a respondent

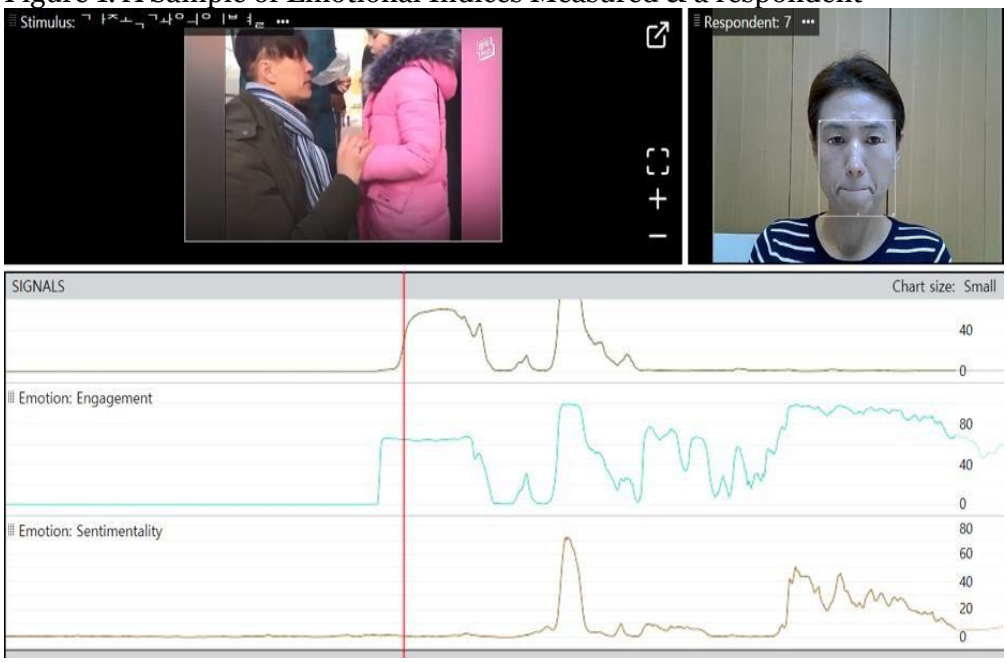


Table 10. Facial Expression Analysis of Sentimentality

Sentimentality	**order**	**Mean**	**SD**
Family Separation	4th	1.43	1.96
Sexual Assaults	3rd	1.66	2.71
War Trauma of Veterans	2nd	1.86	2.98
Destruction of Residence	1st	2.14	3.29

The first video depicted Ukrainian fathers saying goodbye to their spouses and children as they were departing for the battlefield. The second video featured testimonials from female victims who were sexually assaulted by Russian invaders. The third one showed Ukrainian veterans struggling with their disability and war trauma. The last video showed Ukrainian civilians whose homes had been destroyed by Russian bombing.

Table 11. Facial Expression Analysis of Sadness

Sadness	**order**	**Mean**	**SD**
Family Separation	4th	1.19	3.22
Sexual Assaults	2nd	1.91	4.58
War Trauma of Veterans	3rd	1.43	2.85
Destruction of Residence	1st	2.90	6.85

When measured the respondents' level of engagement with each video, they were most engaged with the one showing the destruction of homes. And the video showed the separation of family showed the next highest level of engagement. Also, respondents showed heightened sense of sentimentality when watched the video showing the destruction of homes. And they showed the highest degree of sadness when watched the same video.

IV. Conclusion and Discussion

Immediately after the Russo-Ukrainian war broke out, people with military experience volunteered to fight for Ukraine. They were determined to uphold the freedom of Ukrainian civilians. So, it would be natural to assume that military experience has a connection with such a noble gesture. However, our research shows that military experience has little to do with compassionate or empathetic qualities. It has more to do with other backgrounds that prompted these people to volunteer to fight the war. Our research has

found that the number of children is correlated with the sensitivity to social justice and compassion. Perhaps as people see their children growing up, they understand and embrace selflessness. The number of friends is not correlated with the development of the qualities. The number of siblings does not show a statistically significant correlation. Besides, it was assumed that extroverted people are sociable and are more willing to help others who are in need. Indeed, extroverted people are sociable and can empathize with other people. However, they may not necessarily have a higher sense of social justice or compassion.

Our regression analysis has shown that the number of children does explain the change in social justice sensitivity. Also, friendship and compassion both explain the change in social justice perception. Consistent with the correlation result, having more children can raise one's sensitivity to social justice. As people's compassion grows stronger, their sensitivity to social justice also strengthens. Moreover, the depth of friendship raises the sensitivity to social justice. Most importantly, having more children can raise sensitivity to social justice. Drawing from these results, we can safely conclude that having someone to love and connect with increases one's desire to promote social justice. Perhaps as parents raise their children, their desire to make sure their children live in a peaceful and free society would be heightened. If one were to apply these findings, those who fight for the freedom of Ukraine can appeal to the people who have children. Instead of targeting the general public, the people who raise children may be more likely to support the fight for freedom.

Lastly, our facial expression analysis showed that people are more likely to be engaged in the video showing the destruction of Ukrainian people's homes. They are more likely to grow sentimental and feel sadness when viewing the same video. While we cannot underplay the gravity of other tragic events that we see on television, viewers are more likely to empathize with the destruction of homes. Using this result, one can televise this content more to garner the most needed support and aid. One thing to note here, though, is that these results come from the South Korean population, whose national security is constantly being threatened by North Korean communists. Therefore, one cannot generalize these findings to people from other countries. Future research should target non-Korean populations to draw a more meaningful and generalizable conclusion.

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