

Perceptions of peace in times of war: Public opinion evidence from Ukraine

Appendix

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1 Research design

Human subjects research approval was received from Universitat Pompeu, reference UPF-CIREP-273 for both the interviews and the survey prior to the implementation of these activities.

Interviews

A total of 17 qualitative interviews were carried out prior to the distribution of the survey. Initial interviews were carried out by the principal investigator with a range of academics, peace activists and non-government organization staff, in order to clarify the concepts and questions and help design the survey. Six interviews were carried out, in English. Given the security situation, these interviews were carried out online using a secured connection.

After the survey was designed, further interviews were carried out with a range of Ukrainian citizens to collect qualitative responses to the topics of the survey. Recruitment to the interviews was challenging, given that interviewees were giving their time voluntarily and so interviewees were recruited through snowball recruitment. To compensate possible bias, the interviews sought a balance across age, sex, and region of the country. Eleven interviews were carried out by the research assistant, in Ukrainian. These interviews were carried out online using a secured connection and also face-to-face. Given the security situation, the face-to-face interviews were carried out only in Lviv, but efforts were made to interview respondents from different parts of Ukraine (e.g. Western Ukraine, Kyiv, Dnipro and returned refugees).

Survey

The survey was carried out by IPSOS, an international survey company that has an office in Ukraine. A sample of Ukrainian residents over 18 years old is recruited from an online panel ($N=400,000$) provided by IPSOS. Respondents are offered a small reward for their participation.

The sample size is 2,100 respondents, including 100 pilot interviews.¹ The survey company uses soft quotas (with ten percent variance) for age group (18-20, 21-30, 31-40, 41-50, 51+), sex (male, female), and region (Central, Eastern, Kyiv, Northern, Southern, Western) based on pre-war census data.

Individuals who are not Ukrainian residents at the time of the survey or before the outbreak of the Russian war (24 February 2022) are excluded.

Data collection ran from 10 to 24 August 2023.

The research design was registered at the Open Science Foundation prior the collection of the data. The data had not yet been collected, and thus the data had not been transmitted, and so not observed or analysed by the researchers, at the time of the timestamp of the registration.

Running a survey during an active war brings challenges (Rickard et al. 2023). Firstly, the data is collected during the war when it was not clear what the outcome of the war would be. The opinions are therefore impacted by the experiences of war, and we include this in our analysis. Secondly, the survey runs only in government-controlled areas (and so misses the Russian-occupied areas), a significant proportion of the population have left Ukraine, and many of the population are fighting, particularly males. These aspects mean that the survey is not representative of Ukrainian society prior to the war. However, it does arguably capture a society that has been living at war and with the related suffering for 18 months. Furthermore, the

¹ Sample size is calculated using a ANOVA test with five groups, setting the alpha at 0.05, the power at 0.8, and taking a small effect size of 0.3. The total sample size required is 1,842 (taking into account that the test on support for concessions is a list experiment that compares two groups), calculated using the R programme, `pwr.t.test`.

research relies on experiments where the important comparison is within sample. Thus, the question has internal validity, though generalization beyond this moment is difficult because of the unique circumstances of the situation, something that is impossible to avoid.

Variables measured:

We control for age group (18-20, 21-30, 31-40, 41-50, 51+), sex (male, female), region lived in on 23 February 2022 and region lived in now (Central, Eastern, Kyiv, Northern, Southern, Western), how urban the settlement is 0-49, 50-99, 100-499, and 500+ (all in thousands), educational level (maximum finished School, Technical college, Higher education of Post-graduate education), whether currently not full-time employed, whether the respondent chose to answer the survey in Russian as opposed to Ukrainian, and conflict experiences. The descriptive statistics are given in Table A1.

TABLE A1: Descriptive statistics

Variable	Obs	Mean	Std. dev.	Min	Max
Outcome variables					
Military Peace	2,100	59.28571	49.14189	0	100
Socio-political Peace	2,100	30.28571	45.96034	0	100
Personal Peace	2,100	31.19048	46.33815	0	100
End War	2,100	23.7619	42.57259	0	100
Security	2,100	14.71429	35.43326	0	100
Victory	2,100	9.47619	29.29555	0	100
Territory	2,100	18.71429	39.01191	0	100
Destroy Russia	2,100	5.761905	23.30772	0	100
Sovereignty	2,100	16.7619	37.36166	0	100
Societal Peace	2,100	11.85714	32.33605	0	100
Accountability	2,100	5.238095	22.28471	0	100
Inner Peace	2,100	17.42857	37.94453	0	100
Lived Peace	2,100	13.7619	34.45818	0	100
Experiment primes					
Control	2,100	.3338095	.4716849	0	1
Zelensky	2,100	.332381	.4711789	0	1
Putin	2,100	.3338095	.4716849	0	1
Control variables					
Victimization					
Close person died	2,100	.2390476	.4266035	0	1
Close person not died	2,100	.7609524	.4266035	0	1
Female					
Male	2,100	.4666667	.4990065	0	1
Female	2,100	.5333333	.4990065	0	1
Age band					
18-30	2,100	.2080952	.406042	0	1
31-40	2,100	.267619	.4428233	0	1
41-50	2,100	.2328571	.4227526	0	1
51+	2,100	.2914286	.4545287	0	1
Education					
School	2,085	.0930456	.290566	0	1
Technical	2,085	.2292566	.4204555	0	1
Higher	2,085	.3779376	.4849882	0	1
Post-grad	2,085	.2997602	.4582627	0	1
Language chosen					
Ukrainian	2,099	.8894712	.3136225	0	1
Russian	2,099	.1105288	.3136225	0	1
Size of settlement					

0-49	2,100	.33	.4703247	o	1
50-99	2,100	.0904762	.2869311	o	1
100-499	2,100	.2404762	.4274745	o	1
500+	2,100	.3390476	.4734988	o	1
Region previously lived					
Central	2,100	.1138095	.3176554	o	1
Eastern	2,100	.3480952	.4764799	o	1
Kyiv	2,100	.1161905	.3205295	o	1
Northern	2,100	.0928571	.2903013	o	1
Southern	2,100	.1157143	.3199582	o	1
Western	2,100	.2133333	.4097587	o	1

2 Experiment instrument

Perceptions of peace

“Finally, we would like to ask you your opinions on some other features of Ukraine’s future.

[Control group: No further text]

[Putin prime] Recently Putin said that he does not reject the idea of peace talks

[Zelensky prime] Recently, Zelensky has been discussing his peace proposal

We would like to ask you what peace would mean to you. Please write 3 words or phrases.”

3 Additional ethical considerations

As the survey takes place during an active war, the decision was made to avoid randomized contact to respondents. The survey is delivered to only respondents who have signed up to the IPSOS panel book, meaning that they have agreed to take part in surveys. Furthermore, prospective respondents receive an invitation to answer the survey online and can open the survey at the time of their choosing. This is important given that some areas of Ukraine suffered internet or energy blackouts and because respondents may not be in a situation to respond. This survey method was considered to be more sensitive than randomized telephone calls, which could be intrusive and inconvenient.

Further support: At the end of the survey, respondents are offered access to two support networks. The text they read is the following: “Thank you for your help with this questionnaire. We would like to remind you that if you are affected by any of the questions that were asked, you can contact Doctors without Borders in Ukraine, who deal with trauma (access them through <https://www.doctorswithoutborders.org/what-we-do/where-we-work/ukraine>), or alternatively the “Friend” chatbot, which has been developed by a team of Ukrainian psychologists to help respondents deal with trauma. The “Friend” chatbot is available in Ukrainian and English and is available on Telegram at this site: https://t.me/friend_first_aid_bot”.

4 Additional results: Meaning of peace

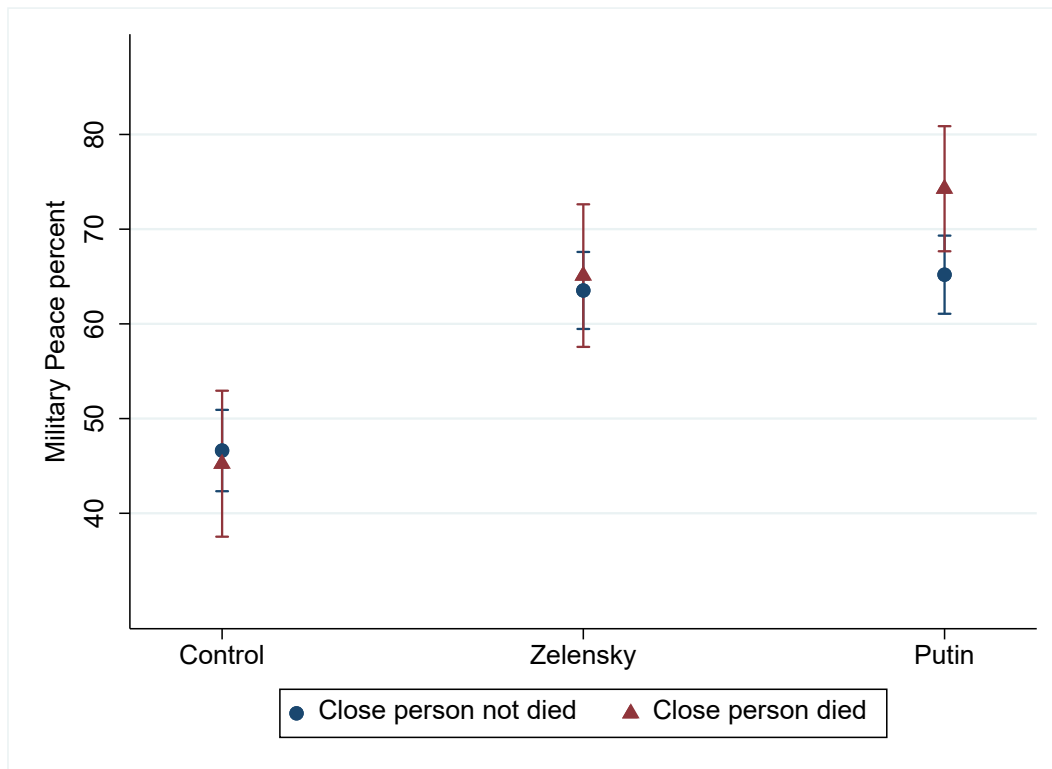


FIGURE A1: Impact of experimental primes on percentage who reference Military Peace divided into those with severe conflict experiences and those who have not

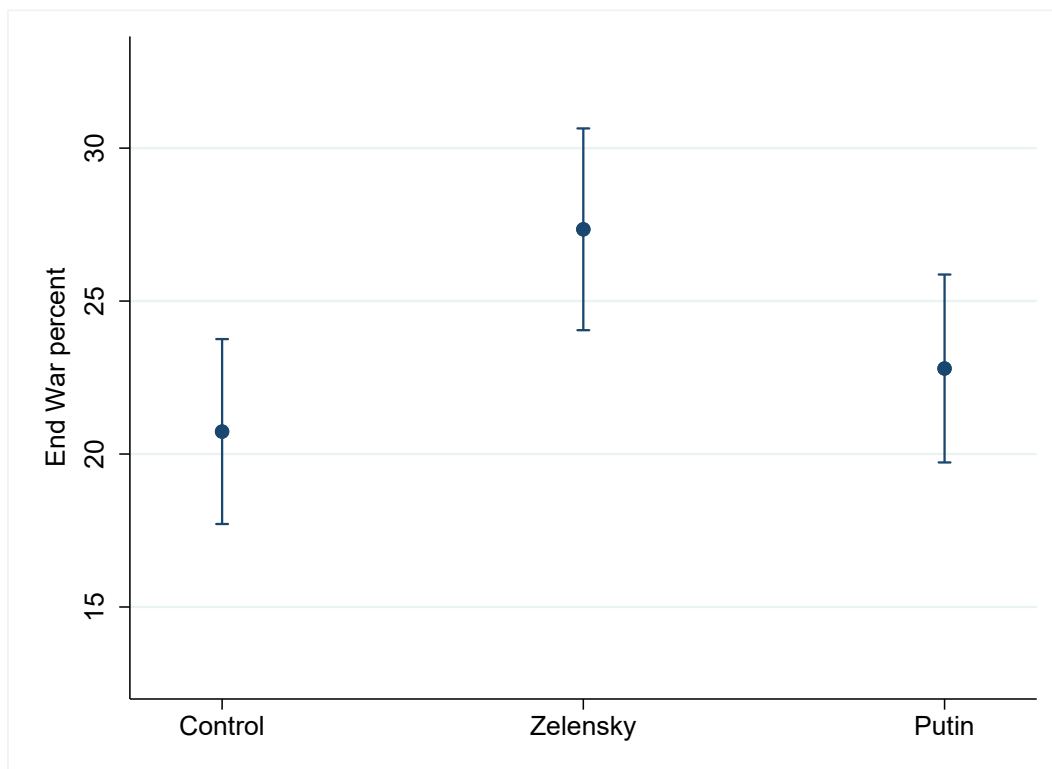


FIGURE A2: Impact of experimental primes on percentage who reference End War

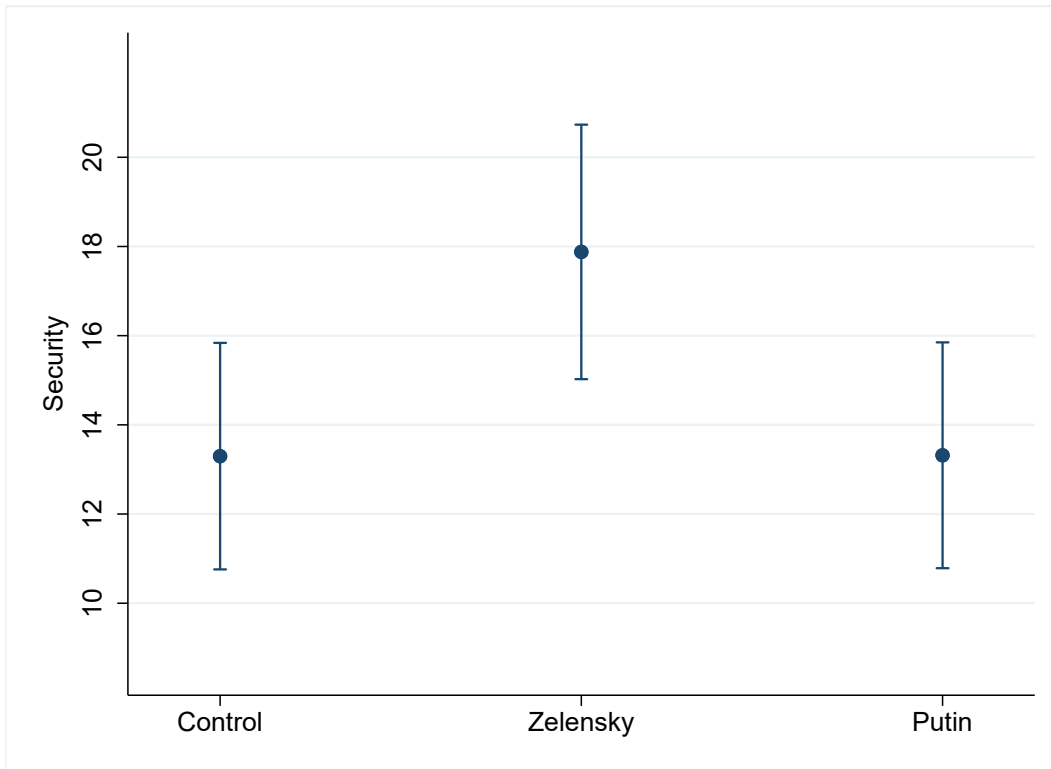


FIGURE A3: Impact of experimental primes on percentage who reference Security guarantees

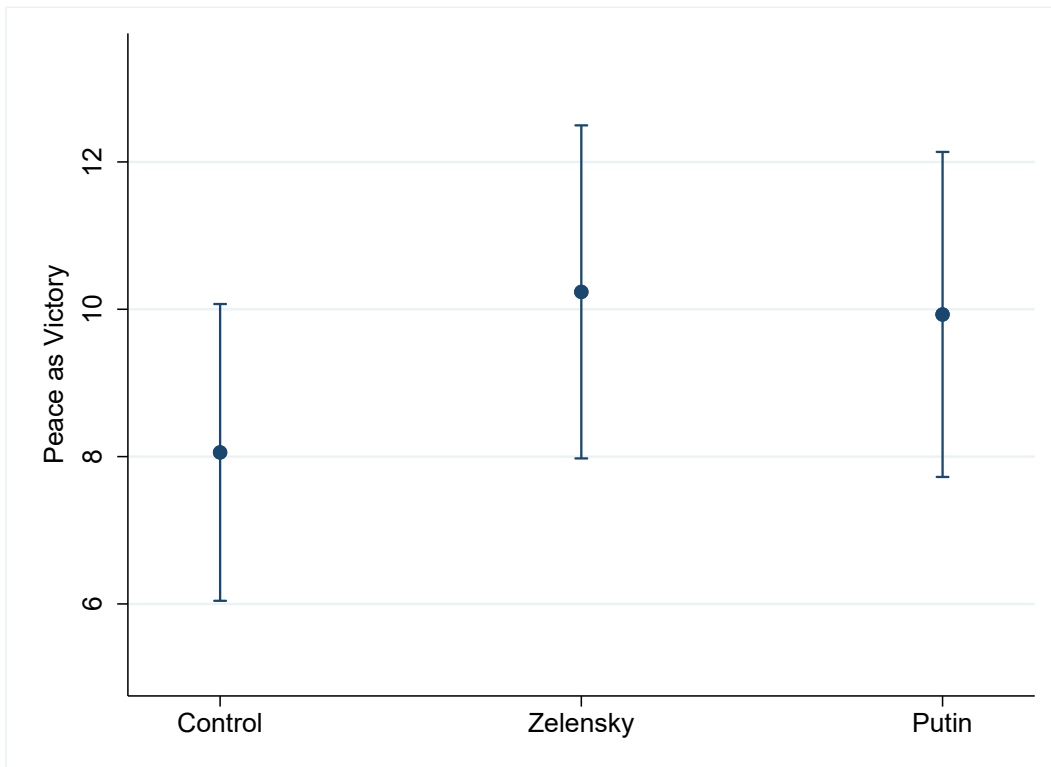


FIGURE A4: Impact of experimental primes on percentage who reference Victory

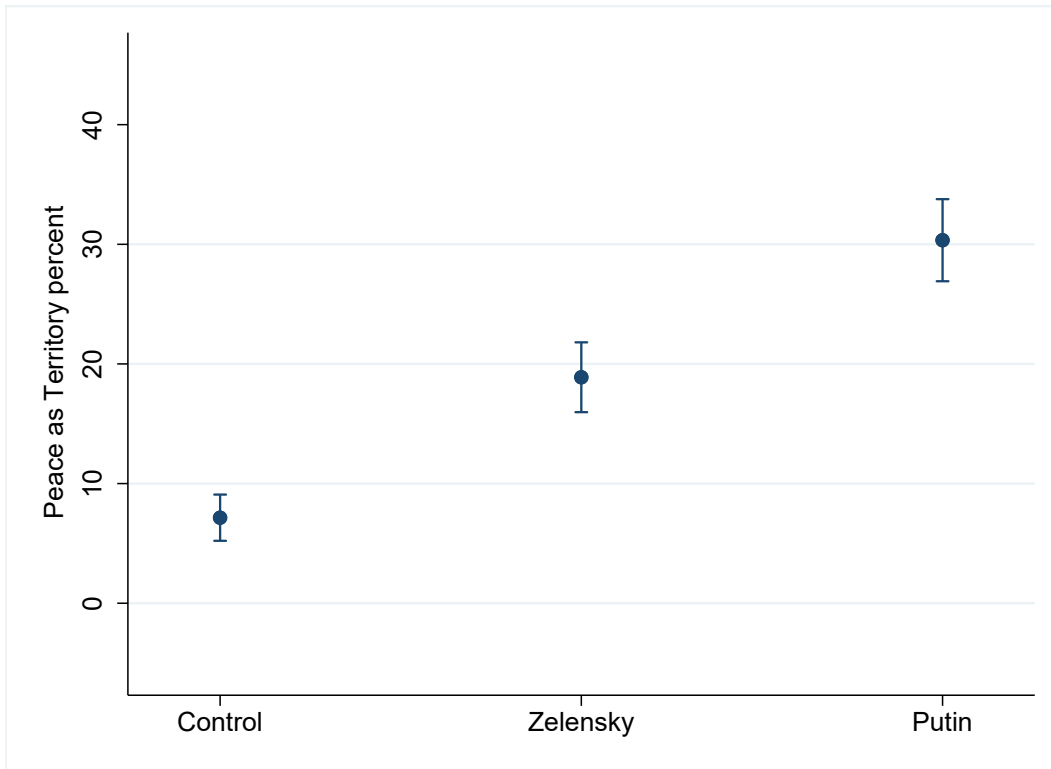


FIGURE A5: Impact of experimental primes on percentage who reference Territory

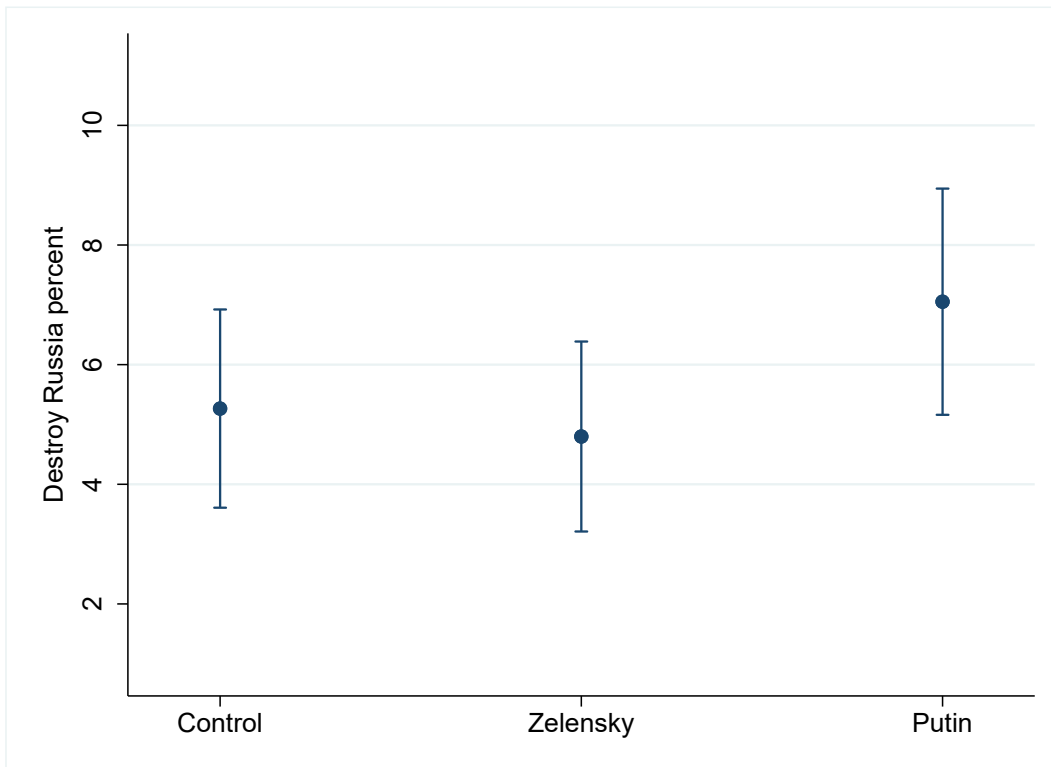


FIGURE A6: Impact of experimental primes on percentage who reference Destroy Russia

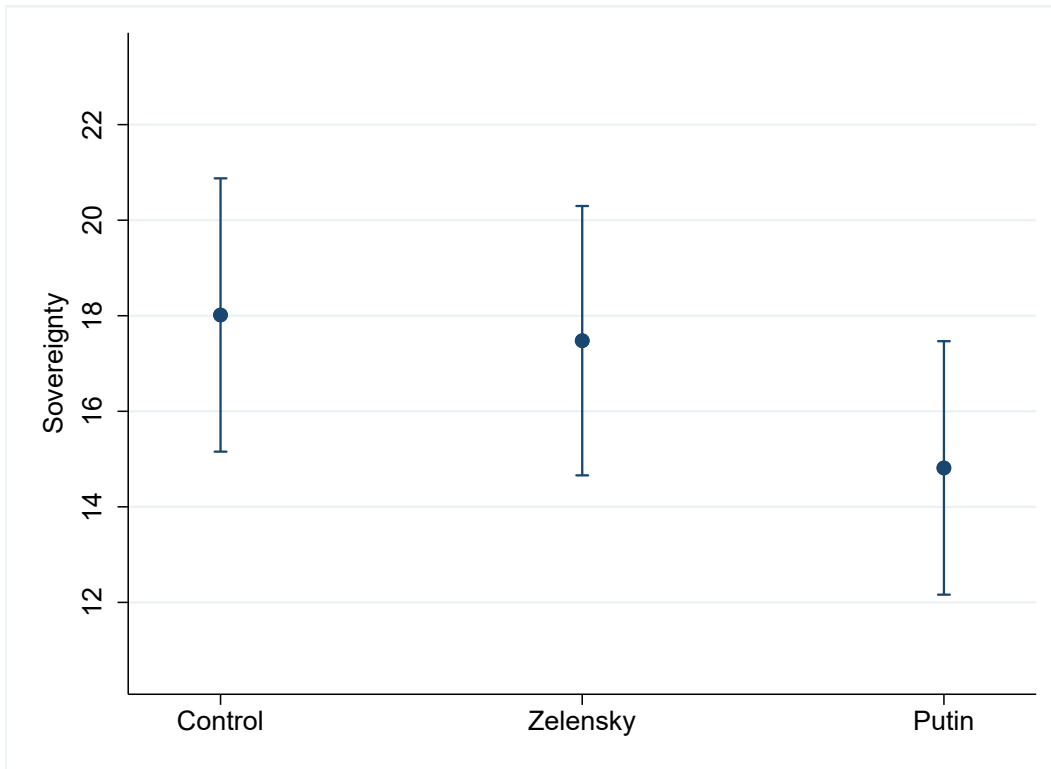


FIGURE A7: Impact of experimental primes on percentage who reference Sovereignty

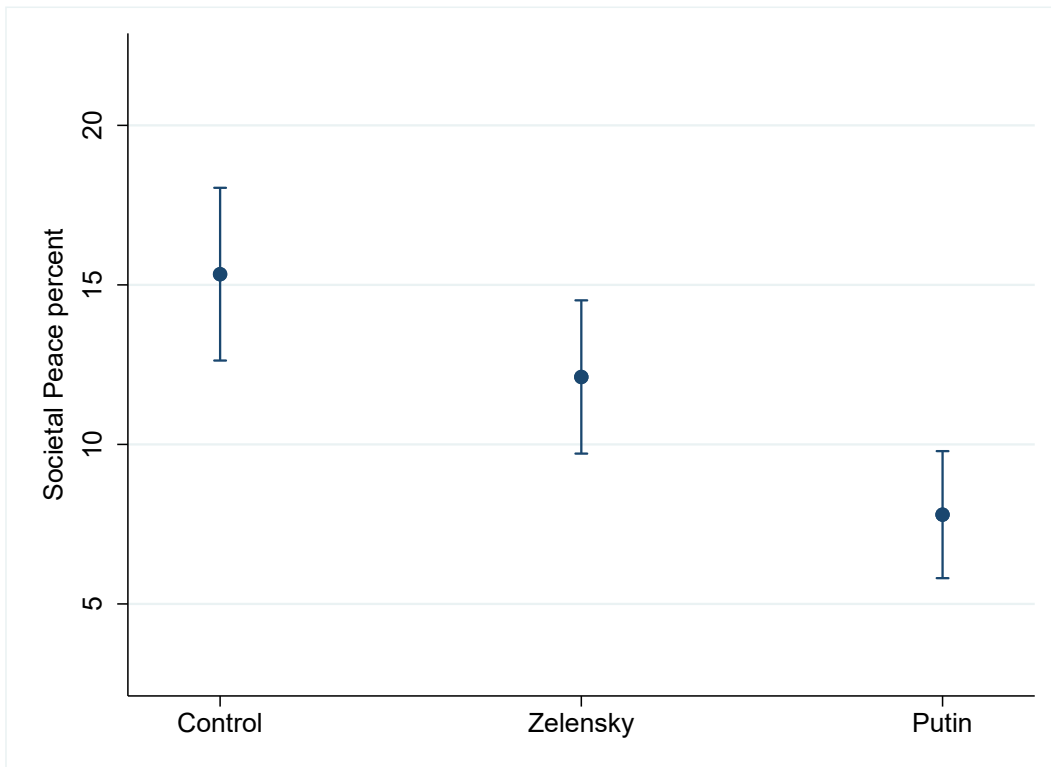


FIGURE A8: Impact of experimental primes on percentage who reference Societal Peace

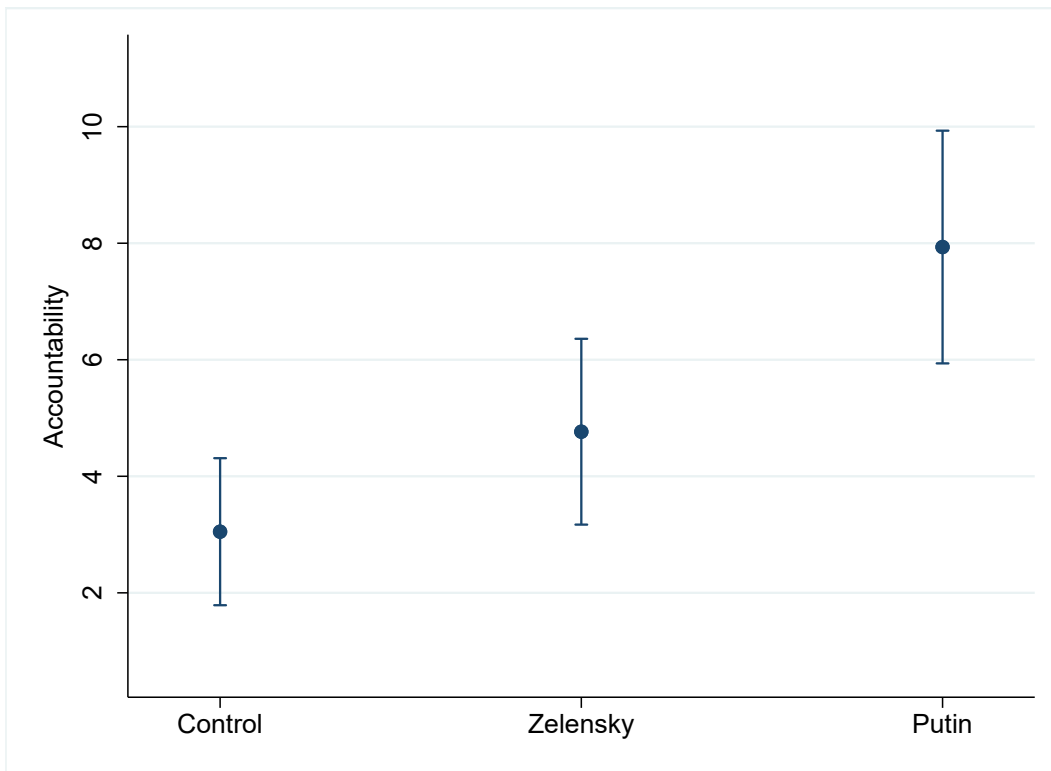


FIGURE A9: Impact of experimental primes on percentage who reference Accountability

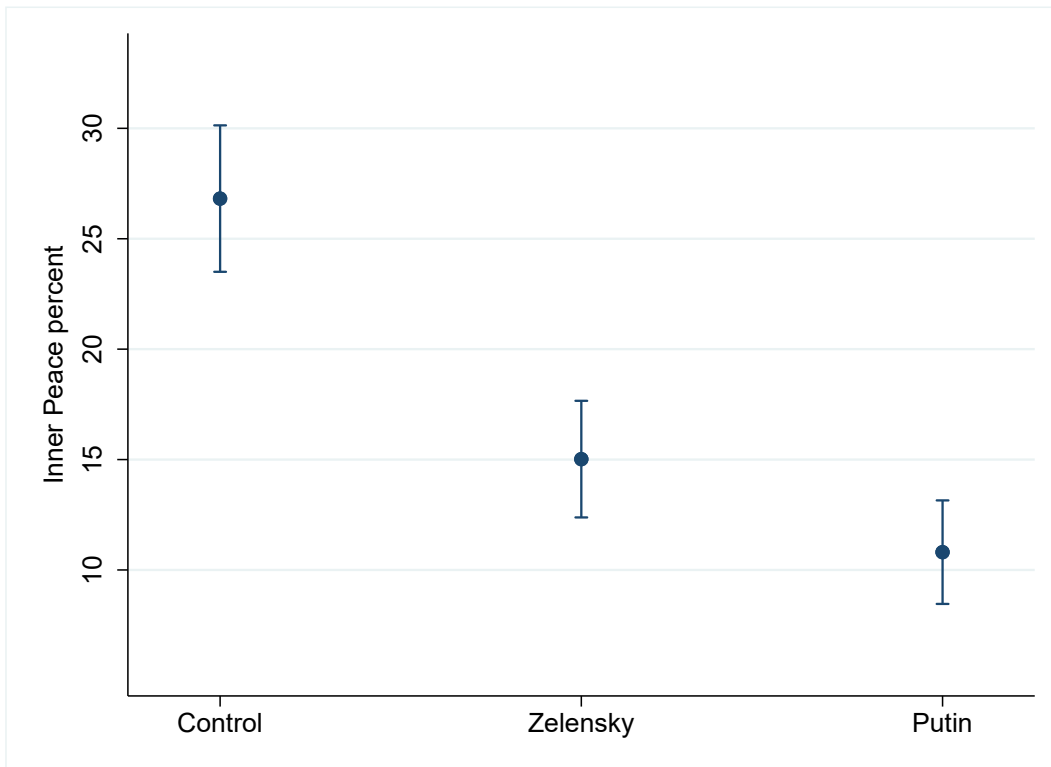


FIGURE A10: Impact of experimental primes on percentage who reference Inner Peace

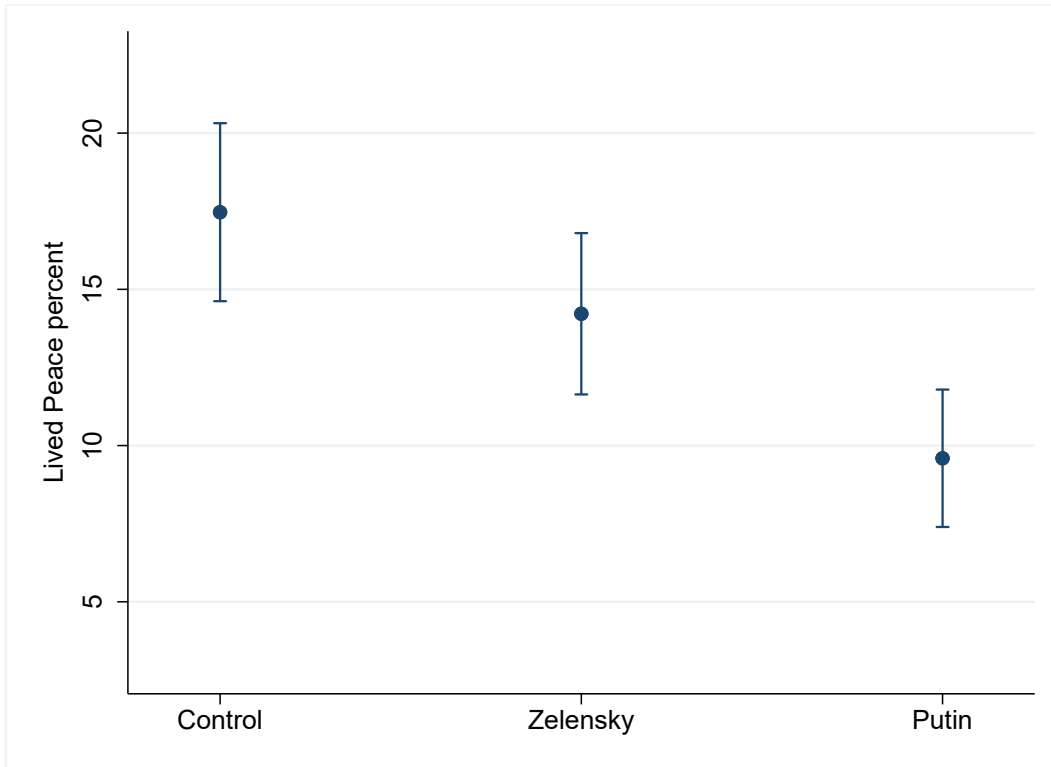


FIGURE A11: Impact of experimental primes on percentage who reference Lived Peace

5 Additional results: Concessions over territory

In addition to the outcome measuring the meaning of peace, a second outcome was measured on support for concessions over territory.

The theoretical framework draws on theories of indivisibility (Goddard 2006, Atran and Axelrod 2008) to examine the idea that “territory” has become an indivisible issue, preventing compromise. Surveys in Ukraine reveal that the population also reject compromise. Over half (53 percent) express willingness to bear the consequences of the war for the sake of eventual victory, while a maximum of 8 percent are ready to accept any compromises to end the war (Opora 2023). The vast majority of Ukrainians consider the return of all territories within the 1991 borders - that is, with Donbas and Crimea – to Kyiv's control as a just and desirable outcome of the war with 80 percent (compared to 82 percent in May 2022) convinced that no territorial concessions are acceptable, even if it means prolonging the war and facing additional threats (Kyiv International Institute for Sociology 2024).

We test the following pre-registered hypotheses:

H3a: Core war aims (territory) are not amenable to concessions

H3b: The prospect of negotiations proposed by the war-time enemy makes respondents less likely to make concessions.

H3c: The prospect of negotiations proposed by the war-time leader makes respondents less likely to make concessions.

Research design

The research design of the outcome of concessions uses a list experiment to access potentially hidden attitudes on concessions. The salience of war and the awareness of sacrifices may make respondents unwilling to publicly support concessions. A list experiment enables researchers to access a more accurate response, since the views on the statement of interest is hidden amongst other items (Blair and Imai 2012; Glynn 2013). Within each of the three primed groups, respondents are divided into two groups by random block allocation as above and then presented with a list of statements to evaluate. The first group assesses a list of three items, while the second group assesses a list of four items, which includes the item of interest. In our case, the item of interest is “Ukraine will have to concede the territory of Crimea to make peace with Russia”. The respondents are then asked how many of the statements they agree with. Crucially, the respondents are not asked *which* statements they agree with, which would expose their preferences for concessions and the answers to this would likely suffer from social desirability bias. By answering only the number of statements they agree with, respondents' views on individual items are shielded.²

The list experiment is presented to respondents in the following way: “How many of the following statements do you agree with? You do not need to tell us which ones, simply how many in total.” The list is then presented in a random order:

² With list experiments it is important to avoid ceiling and floor effects, i.e. that all items on the list are answered positively or negatively (Glynn 2013). The list therefore includes one item that most respondents would agree with (“The territory of Crimea is strategically important to Ukraine”), one that most respondents would disagree with (“Ukraine will have to concede the territory of Donetsk and Luhansk to make peace with Russia”) and one that could realistically have a range of opinions (“The nuclear power plant at Zaphorizhzhia should be under international control”). All the items chosen are similar in content to the item of interest, in order to ensure that the item of interest is unobtrusive.

“Ukraine will have to concede the territory of Donetsk and Luhansk to make peace with Russia
 The territory of Crimea is strategically important to Ukraine
 The nuclear power plant at Zaphorizhzhia should be under international control
 Ukraine will have to concede the territory of Crimea to make peace with Russia [item of interest presented to only 50 percent of respondents].
 Write down the number of statements you agree with.”³

Findings

The second experiment tests how flexible respondents’ views are on core war aims, specifically the concession of Crimea. The expectations were that preferences over concessions would be inelastic and that if there was any effect the two primes would reduce support for any concession of territory. The experiment is a list experiment in order to access opinions that respondents might hide due to social desirability.⁴ The results are shown in Table A2 and show that the preferences are rigid. Those who support the concession of Crimea make up 5.5 percent of respondents in the control group, which supports hypothesis 3a. This result is remarkably in line with a recent survey that found that 6 percent of respondents would be willing to make any concessions on territory (Opora 2023). The similarity of these results is encouraging because it suggests that respondents do not hide their beliefs when answering public surveys. The expectations that the preferences are unyielding (hypotheses 3b and 3c) are also supported by the finding that both primes have no significant influence on these views, though the low baseline also creates a strong floor effect. In summary, neither the in-group prime nor the out-group prime affect the lack of support for concessions over territory. These views are already strongly fixed and territory is viewed in indivisible terms.

TABLE A2: Results from list experiment by experimental group

	Control group	Putin prime	Zelensky prime
Percentage that supports concession of Crimea	5.5	6.3	12.3
Baseline number of items supported	1.83	1.88	1.84
95 percent confidence intervals	-5.5 : 16.5	-5 : 17.6	1.3 : 23
Number of observations	695	697	693

Significance: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

³ The outcome variable is a comparison of means across the two list experiment groups using the stata kict package (Tsai 2019).

⁴ Analytic tests, not reported, show that there are no significant differences between the short-list and long-list respondents on key demographic variables.

References

- Blair, Graeme, and Kosuke Imai. 2012. 'Statistical Analysis of List Experiments'. *Political Analysis* 20 (1): 47–77. <https://doi.org/10.1093/pan/mpro48>.
- Glynn, Adam N. 2013. 'What Can We Learn with Statistical Truth Serum? Design and Analysis of the List Experiment'. *Public Opinion Quarterly* 77 (S1): 159–72. <https://doi.org/10.1093/poq/nfs070>.
- Kyiv International Institute for Sociology. 2024. 'Dynamics of Readiness for Territorial Concessions and Attitudes towards Separate Packages of Peace Agreements'. 2024. <https://kiis.com.ua/?lang=eng&cat=reports&id=1421&page=1>.
- Opora. 2023. 'Analytical Report Based on the Results of War, Peace, Victory, and Future Survey'. 2023. <https://www.oporaua.org/en/viyna/analytical-report-based-on-the-results-of-war-peace-victory-and-future-survey-24828>.
- Rickard, Kit, Kristin M Bakke, Gerard Toal, and John O'Loughlin. 2023. 'How Reliable Are Polls in Wartime Ukraine'. *PONARS Policy Memo* February.