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THE ONSET OF ARMED REBELLION IN EASTERN UKRAINE: OPPORTUNITIES FOR MULTIMETHOD RESEARCH

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The article examines the problem of studying the causes of the onset of the armed rebellion in Eastern Ukraine in 2014. The author critically examines a published scientific paper, in which, based on extensive statistical data on violence and economic activity, several hypotheses are checked regarding the causes of the uprising in Eastern Ukraine. The author points out that the research design of the published paper relies on a statistical view of causality and shows a statistical correlation between the variables. However, this paper does not explain why the analyzed data demonstrate statistical correlation, i.e. why some or other factors lead to a rebellion. Using the possibilities of a multimethod research design, the author demonstrates how, based on a cross-case statistical research, it is possible to investigate casual mechanisms via process tracing and counterfactual analysis, i.e. via case studies for establishing within-case inference.

Keywords: *armed rebellion, Eastern Ukraine, research design, multimethod.*

НАЧАЛО ВООРУЖЕННОГО ВОССТАНИЯ В ВОСТОЧНОЙ УКРАИНЕ: ВОЗМОЖНОСТИ МУЛЬТИМЕТОДОЛОГИЧЕСКОГО ИССЛЕДОВАНИЯ

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Рассматривается проблема изучения причин начала вооруженного восстания в Восточной Украине в 2014 г. Автор критически оценивает опубликованную научную работу, в которой на основе обширных статистических данных по насилию и экономической деятельности проверяется несколько гипотез относительно причин возникновения вооруженного восстания в Восточной Украине. Автор указывает на то, что исследовательский дизайн опубликованной работы опирается на статистический взгляд на причинность и показывает статистическую корреляцию между переменными. Однако данная работа не объясняет, почему проанализированные данные демонстрируют статистическую корреляцию, т.е. почему те или иные факторы ведут к возникновению вооруженного восстания. Используя возможности мультиметодологического дизайна, автор статьи показывает, как на основе поперечного статистического исследования возможно изучить причинно-следственные механизмы посредством отслеживания процессов и контрфакторного анализа, т.е. с помощью кейс-исследований для последующего установления внтурикейсового заключения.

***Ключевые слова:** вооруженное восстание, Восточная Украина, исследовательский дизайн, мультиметодология.*

1. Introduction

The Revolution of Dignity, or a coup d'état if looking from high Kremlin towers, took place in Ukraine almost four ago, in February 2014. Further events were developing according to all necessary elements of a successful Hollywood movie and included President's gateway, revolutionary romanticism, annexation of territories, people's uprisings, counterterrorism operations, shooting and bombing, and information warfare. Military actions were so severe that Hollande and Merkel put a lot of effort in order to seat the warring parties to the negotiating table. These parties had two opposite views on the onset of rebellion in Eastern Ukraine. Despite the fact that the pro-Russian protests took place in 6 regions of Eastern and Southern Ukraine, the armed rebellion occurred only in two of them, Donetsk and Luhansk.

Relying on extensive data that include 3,037 municipalities in the Donetsk and Luhansk regions, Yuri Zhukov, an Assistant Professor of Political Science at the University of Michigan in Ann Arbor, attempts to empirically test "identity-based" and "economic"

explanations of the onset of armed rebellion and its development (Zhukov, 2016). He also clearly shows why the rebellion occurred and remained contained only in the Donetsk and Luhansk regions by looking at identity and economic factors, as explanatory variables (Xs), and rebel violence and rebel control, as outcome variables (Ys), in the period that includes the data from (a) early protests in the regions after the ouster of the former president Viktor Yanukovich in March 2014 and (b) until the day after the second Minsk ceasefire agreement was signed (February 15, 2015). Zhukov uses statistical methods to test the impact of identity and economic factors on rebel violence and rebel control.

However, in my opinion, Zhukov's statistical analysis, on the one hand, clearly shows the correlation between the variables but, on the other hand, does not provide any causal mechanism that would be able to explain why these relationships between Xs and Ys actually hold. In other words, such a complex statistical model gives us convincing evidence that Xs produce Ys, which is supported by a cross-case large-N research, but it is still very unclear exactly how Xs cause Ys. In order to address this issue, one should support Zhukov's general findings with case studies that can establish and confirm possible causal mechanisms. Such a combination of statistical analysis and case studies means conducting a multimethod research. The goal of this paper is to show how a scholar may choose different cases to explore within-case inference that can supplement Zhukov's large-N, cross-case findings on the onset of armed rebellion in the Donetsk and Luhansk regions.

The paper proceeds as follows. First, I briefly summarize Zhukov's research, highlight the general findings that are based on sophisticated statistical models, and discuss remaining questions. Second, I analyze possible cases from Zhukov's research that can be used for establishing within-case inference and providing much stronger causal mechanisms. Lastly, I finish with some conclusions and suggest that even very complex statistical models cannot explain causal mechanisms; therefore, the use of case studies becomes crucial for such research projects.

2. Yuri Zhukov's statistical research: Main findings and remaining questions

Yuri Zhukov's research on the rebellion in Eastern Ukraine is, in my perspective, the best one of this kind, because it is based on large-N data and statistically proves the findings. The main goal of his research is to explain the drivers of the armed rebellion in Eastern Ukraine. He addresses two main groups of explanations of the onset of rebellion widely used in scholarly literature: (i) language and ethnicity as the main drivers of the conflict that help "local rebels to overcome collective actions problems" (Zhukov, 2016: 2) due to the geographical concentration of ethnic groups (identity-based models); (ii) economic opportunity cost models of political violence as the explanations of the onset of rebellion ("as real income from less risky legal activities declines relative to income from criminal or rebellious behavior, participation in the illicit activity is expected to rise") (Zhukov, 2016: 3). Zhukov tests both explanations in his research with the use of micro-level data on violence and economic activity, which is collected by himself and his assistance.

The whole data are consisted of four parts with respect to the outcome and explanatory variables. First, it includes the violent event data for all 3,037 municipalities (cities,

towns, and villages) in the Donetsk and Luhansk regions, which is based on the coding of press releases, news reports, and blog posts in three languages (Ukrainian, Russian, and English) for a relevant period of time, resulting in 10,567 unique violent events. In particular, Zhukov codes these unique violent events as rebel attacks in connection with a particular municipality, which allows him to show their spatial distribution. “For a report to be classified as a rebel attack, it must involve a specific act of organized violence initiated by any anti-Kyiv organized group” (Zhukov, 2016: 6). Also, he ranges all rebel attacks in a particular municipality on the daily basis, which permits him to measure the intensity of violence. These data is collected in order to explain the first outcome variable called rebel violence.

Second, Zhukov is interested in whether a populated place was under rebel or government control on a given day, which becomes his second outcome variable, namely territorial control. In order to code each municipality under territorial control on a given day, Zhukov decides whether a particular populated place falls inside the rebel control polygon. On the basis of these two data sets, Zhukov makes two maps that spatially show rebel attacks and rebel control in the municipalities in the period of March 2014 — February 2015 (see Appendix 2).

Third, the data on local languages (Ukrainian, Russian) is based on the 2001 Ukrainian Census. Zhukov measures the proportion of the Russian-speaking population for each municipality (Appendix 3). And the fourth part of the data is collected with the purpose to calculate the proportion of the local labor force employed in machine-building, mining, and metal industries (Appendix 4). These data is taken from the Bureau van Dijk’s Orbis database that includes “records for 445,399 private and publicly owned firms in Donetsk and Luhansk provinces” (Zhukov, 2016: 8).

Additionally, Zhukov controls for other variables: (i) population density; (ii) elevation; (iii) forest cover; (iv) distance to the nearest road; (v) distance to the Russian border; (vi) prewar political loyalties; and (vii) persistence and spatial spillover of violence (Zhukov, 2016: 9). Zhukov uses Bayesian Model Averaging (BMA) in order to “evaluate the relative explanatory power of ethnic and economic explanations of violence” in the Donetsk and Luhansk regions.

I estimate four BMA ensembles of models: two on the determinants of rebel violence and two on territorial control. First, I use an ensemble of logit models to explain the incidence of any rebel violence across municipalities during the first year of the conflict. Second, I model the intensity of rebel violence in a municipality-week, using an ensemble of spatiotemporal autoregressive GLMs with quasi-Poisson links. Third, I model the duration until a municipality falls under rebel control, using Cox proportional hazards (CPH) models. Finally, I consider the duration until the loss of rebel control to pro-government forces (Zhukov, 2016: 9–10).

By running the BMA model on the statistical data collected, Zhukov finds the following strong correlations between the two outcome and two explanatory variables outlined above:

1. There are three main variables that predict rebel violence: (i) the proportion of the local labor force employed in machine-building; (ii) the population density; and (iii)

the distance to the nearest road (i.e. the military-geographic factor). The linguistic composition of a municipality and the language-economics interaction do not explain the overall occurrence of rebel violence.

2. Those areas that were most vulnerable to economic shocks caused by the disruption of economic ties with Russia fell under rebel control faster and remained longer, and they also experienced rebel violence more frequently. In these municipalities, “the population was employed in the machinery-building and mining industries” (Zhukov, 2016: 13) prior to the onset of rebellion. The Russian language, according to the model, had no impact on the establishment and duration of rebel control there. Zhukov states that these municipalities had low opportunity costs for rebellion. In contrast, “rebels had much harder time establishing and maintaining control” in those municipalities “where the opportunity costs of rebellion were higher, such as in centers dominated by Ukrainian’s relatively competitive metals industry” (Zhukov, 2016: 16).
3. The Russian language was a significant factor of rebel control only in municipalities with a high geographical concentration of the Russian-speaking population, along with smaller industrial labor force and lower exposition to economic shocks. As Zhukov states, “... a non-industrial, but majority Russian-speaking town was highly likely to fall under rebel control on a given day... higher than in a majority Ukrainian-speaking non-industrial town” (Zhukov, 2016: 13).
4. Military-geographic are the only variables, despite economic ones, that strongly correlate with the loss of rebel control. “Pro-Kyiv forces were able to re-establish government control much sooner in municipalities at relatively low elevation, with low population density and farther away from the Russian border” (Zhukov, 2016: 14).

In general, Zhukov shows strong cross-case inference of the variables, providing convincing evidence that such variables as language and employment have a particular effect on the intensity of rebel violence and the scale of rebel control in the Donetsk and Lugansk regions of Eastern Ukraine. However, Zhukov’s statistical model does not fully explain casual mechanisms, or actually why Xs cause Ys. Therefore, there are many still remaining questions about the onset of rebellion in Eastern Ukraine. For instance, the transition from people’s uprising and protests, which took place in many regions of Ukraine, into a full armed rebellion cannot be just explained by Zhukov’s cross-case findings.

First, Zhukov provides evidence that the Russian language had a different effect on the scale and intensity of rebel violence as well as on the establishment and duration of rebel control in various municipalities of the Donetsk and Lugansk regions, largely depending on the employment in a particular industry. At the same time, he acknowledges that “the Donbas conflict has not been fought primarily along ethnic lines” (Zhukov, 2016: 4). So, what factors explain the influence of the language on rebel violence and rebel control? A survey conducted in February 2014 by the Kyiv International Institute of Sociology shows that the status of the Russian language in those regions was not a serious issue on the eve of the onset of rebellion (Kiev International Institute of Sociology, 2014). In my opinion, the correlation between the Russian language and rebel violence/control cannot be solely explained by population’s support for rebellion that could lead to a higher recruitment among the Russian-speaking population (Sherbak, Komin and Sokolov, 2016).

Second, the exposition to economic shocks in the economically Russian-dependent municipalities of Ukraine (mining and machine-building industries) also is not a fully convincing argument to explain rebel's ability to assert control in those parts of the Donetsk and Lugansk regions. There are strong correlations, no doubts. But the causality behind such correlations is not explained and cannot be explained by statistical means. Both possible sources for the low costs of rebellion briefly mentioned by Zhukov in his article (few alternative sources of income for the population in those municipalities and rebels' economic interests) are not developed enough to provide strong causal explanations.

Third, Zhukov provides statistics on rebel attacks in all municipalities of the Donetsk and Lugansk regions without any connection with the fighting between the government and rebel forces. However, I am sure that a closer look at the stages of the military conflict may bring additional and vary valuable observations on the correlation between rebel violence and rebel control, which eventually could lead even to alternative explanations of the rebellion in Eastern Ukraine. Also, Zhukov statistical model shows the high importance for rebels of those locations that had high military-strategic value but, once again, does not explain the underlying logic of such correlation. The same applies to the findings on rebel control. The correlation between local employment and rebel control does not explain why it was possible to establish and maintain rebel control in the regions exposed to economic threats from Russia.

In sum, despite very important and very strong cross-case findings made by Zhukov on the rebellion in Eastern Ukraine, his statistical model could not provide clear casual mechanisms between the variable. We know that there is a correlation between X and Y, but the research is unable to explain such a correlation only by statistical means. Therefore, one needs to do case studies for establishing within-case casual inference and shedding light on deep casual mechanisms that could prove Zhukov's findings or even lead to alternative explanations. In the next part of the paper, I am going to briefly show what cases can be used for such a research and how they can be selected on the basis of Zhukov's statistical model.

3. Within-case inference: The logic of selecting cases for exploring casual mechanisms

In my perspective, Zhukov demonstrates a statistical view of causation in the article and shows the correlation between the variables, providing convincing evidence that X causes Y on the basis of a cross-case and large-N research. However, his findings do not explain why this relationship holds, or, in other words, exactly how X causes Y, since it is mostly impossible to estimate such a complex statistical model that could explain strong casual mechanisms coming into play in the onset and development of rebellion in Eastern Ukraine. As we have the cross-case evidence from Zhukov's research, it is possible to investigate casual mechanisms via process tracing and counterfactual analysis, i.e. via case studies for establishing within-case inference (Goertz and Mahoney, 2012; Goertz, 2016; Goertz, 2017).

The first step in case selection is to define the potential scope of the causal mechanism (Goertz and Mahoney, 2012). Since Zhukov's model is based on extensive data on so

many municipalities in the Donetsk and Lugansk regions of Ukraine, his cross-case dataset is a good place to start. The scope of case studies should be also limited to the Donetsk and Lugansk regions since we cannot generalize the findings even to other regions of Ukraine (mainly because they are different in terms of linguistic composition, employment, and never experienced rebel violence or rebel control). One could expand the scope while doing a comparative analysis of all six Ukrainian regions in which the pro-Russian unrest and seizures of administrative buildings took place (i.e. to expand the scope by including more cases). However, I think that one should focus, at least on this stage of the research, on only those two regions that truly experienced rebellion, and individual characteristics of which pose the limit to generalizability of the casual mechanism X.

The second step is to provide a list of all possible case studies or the criteria for such a list. Since Zhukov includes data from all municipalities into his cross-case statistical model, we could make four 2x2 tables: (i) Russian language (X) à rebel violence (Y); (ii) Russian language (X) à rebel control (Y); (iii) local employment (X) à rebel violence (Y); and (iv) local employment (X) à rebel control (Y), and fill these tables with particular municipalities.

Because the goal is to explore casual mechanisms, it would be appropriate to look for extreme cases in the (1; 1) cell of each table, in which two variables meet each other. The goal is to do a within-case analysis of these extreme cases (since we are concerned with exactly how X produces Y) and to see if cross-case observations would also fall into this cell. These two factors would be able to confirm that the proposed casual mechanisms actually works. It is also necessary to observe the regularity within the cases (if X = 1, how often Y = 1), which is crucial for further generalization of the research findings.

One also can use the (1; 1) cell to pick up only those cases that clearly show casual mechanism and allow to avoid overdetermination. As a responsible scholar, one should also look closely at the cases from the (1; 0) cell, i.e. at disconfirming / falsifying cases that show evidence against the casual mechanisms. It would have two scenarios: (i) one finds ways to refine the theory and find alternative explanations; or (ii) it is necessary to change the scope of the casual mechanism.

Alternative paths to Ys can be explored with the cases from the (0; 1) cell, where X is absent, but Y occurs. Actually, confounders are strongly built into Zhukov's statistical model. He controls for a number of variables that eventually could become clues for alternative casual mechanisms within the cases. It is also worth noting that such cases are not a threat to theory. The (0; 0) cell provides a researcher with counterfactuals, which should be used for a counterfactual analysis (to observe Ys by making Xs = 1).

Since there is no opportunity to access Zhukov's data, I use his published maps and compare them with Google Maps in order to find those municipalities that would fit all the cell of 2x2 tables. I am able to list extreme cases for each cell except only those that include data on employment in metallurgy. In general, such 2x2 tables may be used by a scholar who wants to explore within-case inference on the basis of cross-case dataset made by Zhukov.

Thus, one can build a multimethod research design to look for solid causal mechanisms on the basis of the cross-case and large-N statistical data.

Table 1

Russian language (X) and rebel violence (Y).

	X = 0	X = 1
Y = 1	<p>(0; 1): Equifinality. Correlation: Russian language is not dominant; rebel violence occurs. Municipalities: Pokrovsk, Dobropillya, Kramatorsk, Shabelkivka, Druzhkivka, Noviserhiivka, Zelene, Bakhmut, Krasnotorka, Yasnohirka, Bilen'ke, Vasilivs'ka Pustosh, Yusnohirka, Yasna Polyana, Sofiivka</p>	<p>(1; 1): Casual mechanism. Correlation: Russian language is dominant; rebel violence occurs. Municipalities: Donetsk, Lugansk, Makiivka, Khartsyz'k, Yenakijeve, Horlivka, Torez, Alchevsk, Dikuchaevsk, Novyi svit, Ilovais'k, Zuhres, Shyroke, Zaproshchens'ke, Hirne, Pelahiivka, Rozsypne, Sjevorne, Ol'khovatka, Nikishyne, Vuhlehirs'k, Nyzhnaya Krynka, Zhdanivka, Stizhkivs'ke, Zaporoshensk'ke, Mnohopillya, Shyroke, Nyzhnyia Krynka, Zhdanivka, Yasynuvata, Avdiivka, Pisky, Luhans'ke, Vuhlehirs'k, Verkn'otorets'ke, Yasynuvata, Krynychna, Svitlodars'k, Rozsadky, Mospyne, Svitle, Starobesheve, Styla, Dokuchajevsk, Leb'yazhe, Panteleimonivka, Puteprivid, Krynychna, Monakhove, Shchebenka, Korsun', Pyatykhatky, Gorlovskaya Pravda, Mikhailivka, Karlo-Marksovo, Avilovka, Rozivka, Yunokomunaryivs'k, Bulavyns'ke, Hrozne, Vuhlehirs'k, Rozdadky, Roty, Klynove, Zaitseve, Klynove, Midna Ruda, Mykolayevka, Stansiya Luhanskaya, Metalist, Teplychne, Sabivka, Vesela Tarasivka, Lutuhyne, Fabrychne, Khyashchuvate, Lobacheve, Bolotene</p>
Y = 0	<p>(0; 0): Counterfactuals. Russian language is not dominant; rebel violence does not occur. Municipalities: Troits'ke, Pokrovs'ke, Yamy, Man'kivka, Solidarne, Pryvillya, Ozero, Shapran, Novobila, Biloluts'k, Osynove, Novopskov, Kam'yanka, Krasne Pole, Pinivka, Tarabany, Sadky, Lozove, Bondareve</p>	<p>(1; 0): Falsification/scope. Russian language is dominant; rebel violence does not occur. Municipalities: Babycheve, Lantrativka, Solontsi, and Novoznam'yanka</p>

Table 2

Russian language (X) and rebel control (Y)

	X = 0	X = 1
Y = 1	<p>(0; 1): Equifinality. Russian language is not present; rebel control is present.</p>	<p>(1; 1): Casual mechanism. Russian language is present; rebel control is present. Municipalities: Donetsk, Luhansk, Makiivka, Horlivka, Ilovais'k, Novyi Svit, Mospyne, Staribesheve, Dokuchaevs'k, Olenivka, Volnovakha, Donskoye, Myrne, Razdol'ne, Komsomol's'ke, Novozarivka, Shyrokoe, Hilynka, Kumachove, Kuteinykove, Merezhky, Mnohopillya, Proletars'ke, Zuhres, Kumachove, Shyroke, Hlynka, Kurnetsovo-Mykhailivka,</p>

	X = 0	X = 1
Y = 1	<p>Municipalities: Astakhove, Novoborovytsi, Lyubyme, Dar'ino-Yermakivka, Zelenopil'ya, Marynivka, Kozhevnyia, Hryhorivka, Kalinine, ternivka, Svobodne, Chumak, Dersove, Lukove, Prymors'ke, Sosnivs'ke, Ukrain's'ke, Kozats'ke, Porokhnyia, Roza</p>	<p>Zori, Svododne, Tel'manove, Lukove, Dmitrivka, Verkhonii Kut, Dibrivka, Kozhevnyia, Dyakove, Bobrykove, Vyshneve, Tatsyne, Orikhove, Nizhii Nahol'chyk, Sadovnyi, Antratsyt, Rafailivka, Schotove, Lutuhyne, Rozkishne, Krasne, Habun, Stansiya Luhanska, Schastia, Lobacheve, Zhovte</p>
Y = 0	<p>(0; 0): Counterfactuals. Russian language is not present; rebel control is not present.</p> <p>Municipalities: Lyman, Stavky, Zarichne, Pryshyb, Sydorove, Svyatohirs'k, Yarova, Socnove, Bohorodyche, Oleksandrivka, Serednje, Zelena Dolina, Nove, Karpivka, Ridkodub, Karpivka, Volchyi Yar, Lozove, Rubetsi, Yats'kivka, Koroviy Yar, Dolyna, Krasnopillya, Adamivka, Mykil's'ke, Khrestyshche, Pryvillya, Maidan, Prelesne, Troits'ke</p>	<p>(1; 0): Falsification/scope. Russian language is present; rebel control is not present.</p> <p>Municipalities: Babycheve, Lantrativka, Solontsi, and Novoznam'yanka, Shyrokyi, Kozachyi, Chuhunka, Zolotarivka, Rozkvit, Krepy, Rozkvit, Vil'ne, Zolotarivka, Verkhonii Minchenok, Nizhnii Minchenok, Teple, Plotyna, Nyzhn'oteple, Artema, Petrivka</p>

Table 3

Local employment (in machinery, mining, or metallurgy, X) and rebel violence (Y).

	X = 0	X = 1
Y = 1	<p>(0; 1): Equifinality. There is no employment in machinery, mining, or metallurgy; rebel violence is present.</p> <p>Municipalities: Severodonetsk, Lysychans'k, Blagodatne, Zorynivka, Mykil's'ke, Shelestivka, Kabychivka, Velykots'k, Kamykivka, Musiivka, Kolomyichykha</p>	<p>(1; 1): Casual mechanism. There is employment in machinery, mining, or metallurgy; rebel violence is present.</p> <p>Municipalities: (a) Machinery: Stakhanov, Bryanka, Alchevs'k, Rerecal'sk', Buhaiivka, Seleznivka, Artemivs'k, Zoryns'k, Yuzhna Lomuvatka, Yashchikov, Krasna Zorya, Maloivanivka, Troits'ke. (b) Mining: Krasnodon, Uralo-Kavkaz, Zakhidnyu, Izvaryne, Vlasivka, Porichchya, Verkhni'oshevyrivka, Ordzhonikidze, Myrne, Novoaleksandrovka, Hirne, Enhe'sove, Talove. (c) Metallurgy: Too hard to find on the map</p>
Y = 0	<p>(0; 0): Counterfactuals. There is no employment in machinery, mining, or metallurgy; rebel violence is not present.</p> <p>Municipalities: Zachativka, Vil'ne, Peredove, Rivnopil', Krasna Polyana, Stepne</p>	<p>(1; 0): Falsification/scope. There is employment in machinery, mining, or metallurgy; rebel violence is not present.</p> <p>Municipalities: Novopskov, Kamyanka, Osynove, Pisky</p>

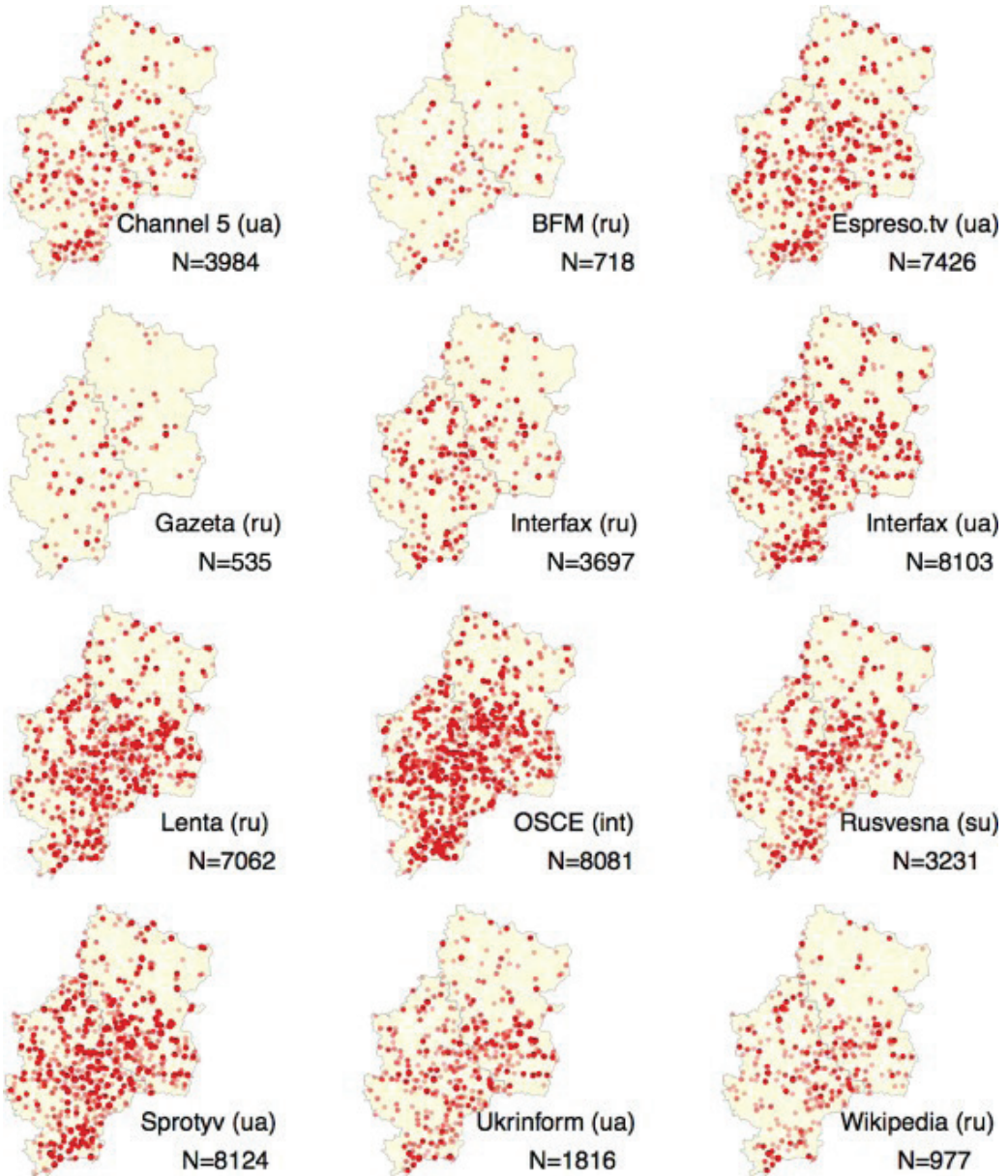
Local employment (in machinery, mining, or metallurgy, X) and rebel control (Y).

	X = 0	X = 1
Y = 1	(0; 1): Equifinality. There is no employment in machinery, mining, or metallurgy; rebel control is present. Municipalities: Svobodne, Kalinine, Kon'kove, Chumak, Dersovem Pervomais'ske, Zori, Ternivke, Zaporozhets'	(1; 1): Casual mechanism. There is employment in machinery, mining, or metallurgy; rebel control is present. (a) Machinery: Novokaterinka, Petrivs'ke, Artemida, Novozariv'ka, Komsomol's'ke, Stakhanov, Bryanka, Alchevs'k, Rerecal'sk', Buhaiivka, Selezniivka, Artemivs'k, Zoryns'k, Yuzhna Lomuvatka, Yashchukove, Krasna Zorya, Maloivanivka, Troits'ke. (b) Mining: Krasnodon, Uralo-Kavkaz, Zakhidnyu, Izvaryne, Vlasivka, Porichchya, Verkhn'oshevyrivka, Ordzhonikidze, Myrne, Novoaleksandrovka, Hirne, Enhe'sove, Talove. (c) Metallurgy: It is hard to identify such municipalities on the basis of the published map; one needs the dat
Y = 0	(0; 0): Counterfactuals. There is no employment in machinery, mining, or metallurgy; rebel control is not present. Municipalities: Zachativka, Peredove, Novopetrykivka, Yalyns'ke, Kluchove, Staromlynivka, Zavitne Bazhannya	(1; 0): Falsification/scope. There is employment in machinery, mining, or metallurgy; rebel control is not present. Municipalities: (a) Machinery: Selidove, Mykhailivka, Vyshneve, Ukrain's'k, Tsukurne. (b) Mining: Zelenyi Hai, Iskra, Tolstoi, Hrushivs'kem Yalta, Piddubne, Perebudova, Schevchenko, Komyshevakhka, Novosilka, Zelene Pole, Novopil'. (c) Metallurgy: Too hard to find on Zhukov's maps, one needs his data

4. Conclusion

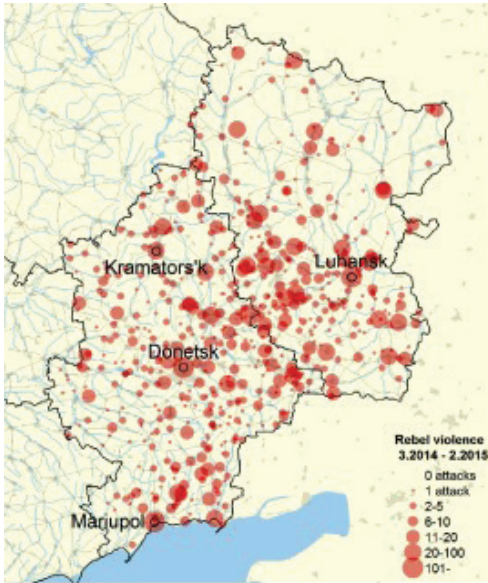
The onset of rebellion in Eastern Ukraine is a complex social phenomenon that has many casual mechanisms in place. Zhukov's statistical research finds relationships between Xs and Ys, but it cannot explain why they hold. In order to do that, one should connect a cross-case analysis with within-case analysis. Zhukov's cross-case dataset provides opportunities to select appropriate cases for exploring within-case inference. Such a multimethod research could confirm that the proposed casual mechanism actually works or leads to alternative explanations.

Appendix 1. Violent event locations in the Donetsk and Luhansk regions, by data source.

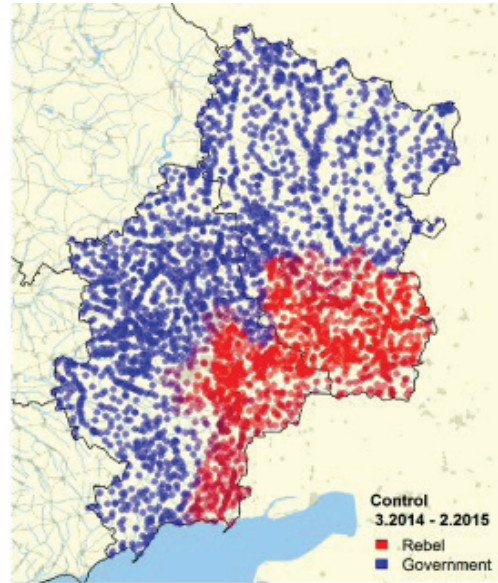


Source: <http://www.sciencedirect.com/science/article/pii/S014759671500092X#gr1>

Appendix 2. Outcome variables (rebel attacks and rebel control).



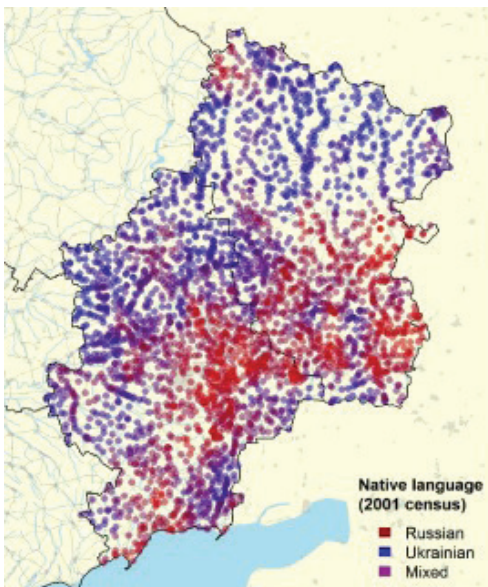
(a) Rebel attacks (SVM-classified)



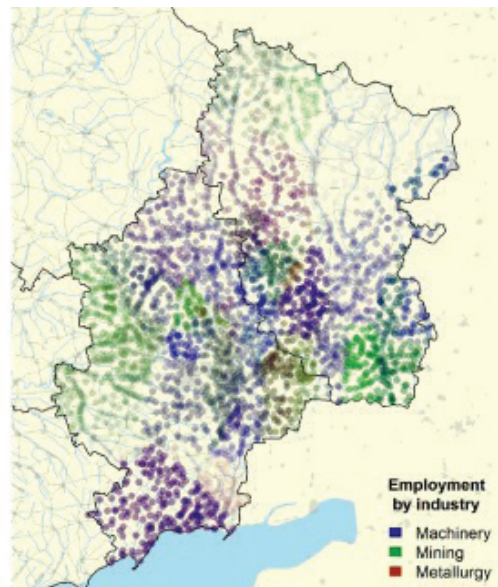
(b) Rebel control

Source: <http://www.sciencedirect.com/science/article/pii/S014759671500092X#gr2>

Appendix 3. Explanatory variables (Russian language and local employment).



(a) Russian language



(b) Local employment

Source: <http://www.sciencedirect.com/science/article/pii/S014759671500092X#gr3>

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