Border Infrastructure Data

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Introduction

This codebook provides a brief overview of the *Border Infrastructure Data*. The data was collected as part of the research project The Borders of the World: Processes of De- and Rebordering in a Global Perspective (SFB 1265, C01, PI: Prof. Dr. Steffen Mau) which was funded by the German Research Foundation, project number 290045248 - SFB 1265). For more details on the dataset, please consult the following article:

- Gülzau, F., & Mau, S. (2021a). Walls, Barriers, Checkpoints, Landmarks, and "No-Man's-Land." A Quantitative Typology of Border Control Infrastructure. *Historical Social Research, 46*(3), 23-48. doi:10.12759/hsr.46.2021.3.23-48

The project developed a heuristic that measures the "physicality of borders" (Hassner & Wittenberg 2015: 162). We go beyond binary measures of border fortifications by classifying border architecture into five categories - from relatively to completely closed - that we describe respectively as "no-man's-land" borders, landmark borders, checkpoint borders, barrier borders, and fortified borders. Figure 1 provides a visual illustration of the categories.

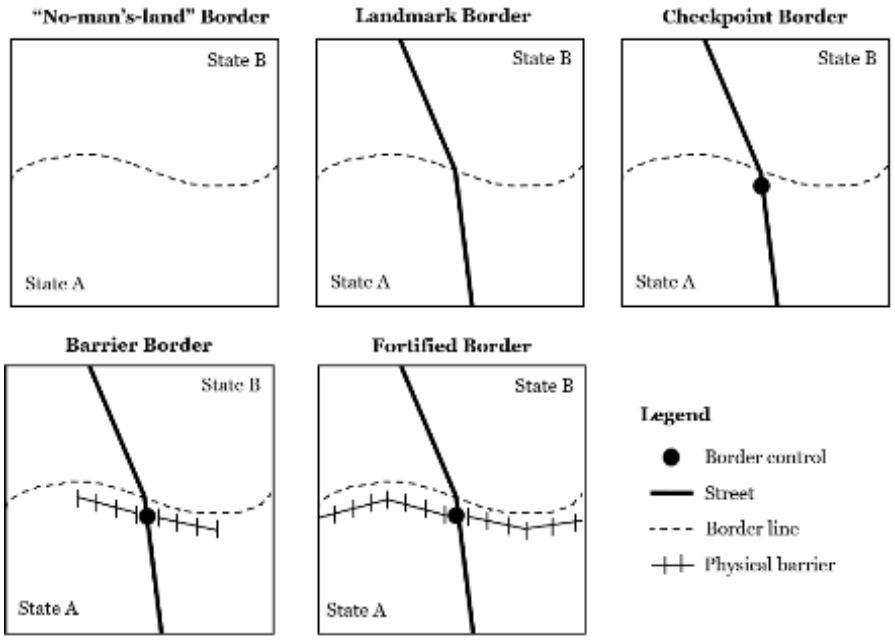

Figure 1. Typology of border infrastructures

Approach

(from Gülzau & Mau 2021a: 30-31)

The data on border infrastructures were collected between April 2018 and October 2019. Our starting point was the "Direct Contiguity 3.2" data from the Correlates of War Project that we used to identify all contiguous land borders between nation states ($N_{country} = 158$, $N_{border} = 630$; Stinnett et al. 2002).[1] For each country, we created a single document and gathered information on all the land borders. In general, we relied on visual cues and additional evidence from newspapers and digital sources. We looked for case studies in scientific databases (e.g., Scopus) and conducted searches in digitized media archives. We also examined satellite images of border crossing points using the Google Maps API. In some cases, the image quality was too low, forcing us to use alternative services such as Bing Maps. In addition to the visual information included in satellite imagery, images of border posts were added where possible. Lastly, we compared and enriched our coding with existing studies on fortified borders (Avdan 2019; Carter and Poast 2017; Hassner and Wittenberg 2015; Jellissen and Gottheil 2013; Jones 2012; Linnell et al. 2016).[2] Figure 2 illustrates our coding approach.

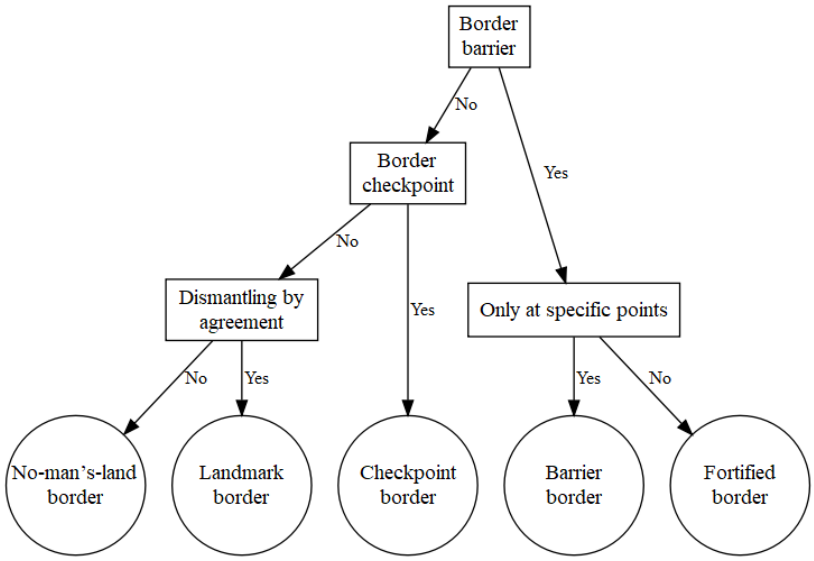

Figure 2. Coding approach

In particular, we distinguish borders that are fortified (e.g. fences, walls, barbed-wire, and landmines) from more open border regimes. The fortified borders are then coded according to the extent of border fortifications. States with *fortified borders* install obstacles that are meant to prevent unauthorized mobility along the total length of a border line, while states with *barrier*

[1] The COW dataset was adjusted by adding the border dyad between Nigeria and Chad, which became a land border due to the progressing aridification of Lake Chad. In addition, two erroneous entries were corrected (United Arab Emirates-Qatar, and Myanmar-Pakistan). Lastly, we excluded French overseas territories such as French Guyana.

[2] The image database is available upon request.

borders use physical barriers along specific locations that make it difficult to avoid inspections. The remaining categories differ by the use of designated checkpoints. *Checkpoint borders* are characterized by border posts at major border crossing points with the purpose of stopping and controlling travelers. In contrast, states that have landmark borders and no-man's-land borders are not relying on border posts to monitor cross-border mobility. However, in the case of *landmark borders*, states have agreed to abolish regular controls in order to boost the cross-border flows of goods and people, while *no-man's-land borders* are often found in remote regions such as deserts or jungles, which are difficult to access by state agents.

We followed a dyadic conceptualization of international borders by measuring the infrastructure on each side of a mutual border line. Accordingly, a shared border line that creates a "state couple" (Vallet and David 2014) is separated into two distinct observations. In this way, we account for borders that are managed cooperatively as "bi-national institutions" (Longo 2017, 2) and for borders that are places of conflict, which might be the case when incompatible territorial designs meet. For instance, a state that is affected by a fortified border could enter a race toward tighter borders by also installing barriers or could de-escalate the situation by maintaining conventional checkpoints. In addition, a dyadic approach enables us to include measurements that capture the relationship between bordering countries such as differences in the economic output or political system.

Using the case of the border between Turkmenistan and Uzbekistan, figure 3 gives an example of information that was used to classify borders. The respective border is coded as a *fortified border* because existing data sets and policy reports indicate that large stretches of the border are equipped with fences. Using satellite images, the existence of a border fence was confirmed.

Example: Turkmenistan - Uzbekistan

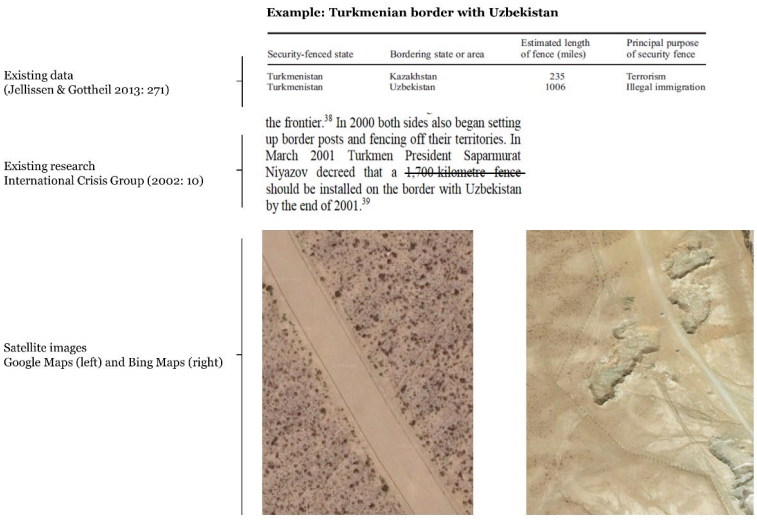

Figure 3. Example: Turkmenistan-Uzbekistan

The typology enables us to map border infrastructures on a global scale, addressing questions regarding the worldwide distribution of physical markers. Nevertheless, our typology is not without limitations. First, borders and their territorial designs have a history, but our typology only provides a crosssectional view of current border infrastructures, as it was not possible to trace the origin of each checkpoint. A case in point concerns African borders that were drawn by colonial powers during the scramble for the continent and securing colonial exploitation. Even today, the colonial past fuels border conflicts and several border fences have been inherited from this past (Gülzau and Mau 2021b). Second, states maintain multiple border crossing points that do not necessarily have the same material infrastructure along the whole border line. Our measurement uses the highest level of border infrastructure at a specific border line to characterize its entirety. For example, the Kenyan government planned a border fence that was meant to cover the whole border with Somalia. However, only one section at the border crossing point of Mandera was eventually fenced (Galvin 2018). Accordingly, the border between Kenya and Somalia is classified as a "barrier border," although some parts of the border are less protected. Lastly, our typology is limited to the measurement of the physical infrastructure at a border line. However, border infrastructures only regulate mobility when sufficiently monitored by personnel. This is illustrated by former secretary of the U.S. Department of Homeland Security, Janet Napolitano, who questioned the efficiency of border walls saying "You show me a 50-foot wall and I'll show you a 51-foot ladder at the border" (Lacey 2011).

Variables

The border infrastructure data set provides the following variables, which can be used to investigate border architecture at a global scale (see Table 1). The data also enables the replication of core findings.

Table 1. Variables

Variables	**Description**	**Labels**
state1	Builder of border infrastructure (iso3c)	
state2	Affected state (iso3c)	
typology	Border typology	[1] No-man's land Border, [2] Landmark Border , [3] Checkpoint Border , [4] Barrier Border , [5] Fortified Border
fence	Has a border fence been erected?	[0] No , [1] Yes
wall	Has a border wall been erected?	[0] No , [1] Yes
additional_fortification	Are additional obstacles installed (e.g. ditches,	[0] No , [1] Yes

Variables	Description	Labels
	berms, barbed-wire)?	
fortification_description	Description of border barrier (if available)	
landmine	Antipersonel landmine contamination, Source: Landmine Monitor 2018 (http://www.the-monitor.org/en-gb/reports/2018/landmine-monitor-2018.aspx)	[0] no , [1] light , [2] medium , [3] heavy , [4] massive
bcp	Geocode (Latitude, Longitude) of border crossing point	
bcp_infrastructure	Description of infrastructure at the border (using satellite images).	[0] none , [1] basic , [2] extended
avdan_2019	Coded as fenced in Avdan (2019) Visas and Walls. Border Security in the Age of Terrorism, Philadelphia: PENN.	[0] No , [1] Yes
hassner_wittenberg_2015	Coded as fenced in Hassner & Wittenberg (2015), doi:10.1162/ISEC_a_00206	[0] No , [1] Yes
jellissen_gottheil_2013	Coded as fenced in Jellissen & Gottheil (2013), doi:10.1080/14751798.2013.842707	[0] No , [1] Yes
jones_2012	Coded as fenced in Jones (2012) Border Walls. Security and the War on Terror in the United States, India, and Israel, London: Zed.	[0] No , [1] Yes
wikipedia	Coded as fenced in the English Wikipedia entry on border barriers (https://en.wikipedia.org/wiki/Border_barrier)	[0] No , [1] Yes
linnell_et_al_2016	Coded as fenced in Linnell et al. (2016), doi:10.1371/journal.pbio.1002483	[0] No , [1] Yes

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