

## Chapter 9: Google Earth Exercise

### Exercise 1

#### Political Geography: Belfast as a Case Study

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The segregation of Northern Ireland into Catholic and Protestant factions is most evident in the city of Belfast, where most people attend school and socialize in distinct areas of the city. The partitioning of space, as described in your textbook, is clearly visible on the streets of Belfast. A network of “peace walls” intersects the city in areas previously subject to rioting and sectarian clashes between Catholics and Protestants. Though a peace agreement was reached in Northern Ireland, the contentious walls remain and exert an influence over every aspect of city life.

**The task:** Using *street view* in Google Earth, examine the boundaries and interiors of Catholic- and Protestant-dominated neighbourhoods and gain an understanding of how the city is divided in various locations, and how segregation is manifested in the urban form.

**Step 1:** Ensure that the “roads” layer and the “borders and labels” layer are enabled. Load the [chapter9.kmz](#) file. Two layers are included. The Protestant layer is an overlay of all census “Small Areas” that reported in excess of 50 per cent Protestant population while the Catholic layer is an equivalent for adherents of that faith. Note that the lightest shades correspond to a minimum 50 per cent of total populations belonging to that particular faith, while darker shades indicate a near homogeneity of religion. Clicking on any area will display exact statistics.

**Step 2:** Locate **Cupar Way** in Belfast using the search box.



Figure 1: Street view icon and drop-pin

**Step 3:** Select the **street view** drop pin from the navigation controls menu in the top right of the viewport. Drop the pin onto **Cupar Way**, an area that divides two Protestant and Catholic neighbourhoods.

- **Question 1:** What built features characterize this street? What amenities (e.g., shops and services, landscaping, benches, etc.) are evident? What are the proportions of Catholics and Protestants on either side of the street?

**Step 4:** Enable the “places” layer. Using street view and satellite view, explore the interiors of both Catholic and Protestant dominated areas.

- **Question 2:** What effect does the political geography of this city have on its structure? How do the internal areas of the neighbourhoods differ from the border areas? Does the segregated design of the city influence the design of neighbourhood interiors?
- **Question 3:** What do the unshaded areas of the map represent? What parts of the city are not coloured by the choropleth? What amenities are found here? (Refer to the places layer)

## Exercise 2

### Mapping Disputed Boundaries with Google

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Borders delimit the geographic boundaries of state sovereignty. While many borders are stable and longstanding, others are hotly contested. Mapping borders with precision and accuracy can present problems both to the cartographer and the users of the map. For instance, problems can arise in challenging mountainous terrain or meandering rivers, or when there is geopolitical disagreement on the location of the border itself.

Over the past decade, Google's digital atlases have become *the* reference point for online cartographic resources across the globe. However, on occasion, Google's cartographers have deviated from accepted international boundaries or a country's own official territorial claims. Thus, when Google Maps marked the border between Nicaragua and Costa Rica, it granted Nicaragua an extra few square kilometres of Costa Rican territory. Both countries proceeded to send military and police to protect and defend this "new" border, and in the process almost caused the first [Google Map War](#).

Google has attempted to overcome cartographic imprecision and the potential geopolitical fallouts that may arise by acquiring more accurate and current spatial data from a wider variety of sources. The line symbology it uses also reflects the various types of international borders that exist:

In Google Earth,

- **solid yellow** represents an internationally agreed upon border, legal and free of dispute.
- **solid red** represents a disputed boundary that has questionable legal status.
- **solid orange** represents either treaty boundaries, which are established and agreed upon, but not yet legal; and provisional boundaries, which are undisputed *de facto* borders without formal or legal agreement.

In Google Maps,

- **solid grey** represents an internationally agreed upon border, legal and free of dispute.
- **dashed grey** represents a disputed boundary that has questionable legal status.

Another way Google has responded to the contested nature of borders is by altering the geographic location or appearance of the boundary line depending on where you are viewing their map. Thus in Google Maps, the presence and/or symbology of an international boundary depends on, quite literally, where you stand.

**The task:** Using both **Google Earth** and **Google Maps**, explore how Google users around the world see international borders differently.

**Step 1:** Open Google Earth and ensure that the "Borders and Labels" layer is enabled. Within that layer, enable only "International Borders" and "Country Names." Use the search bar to locate the Crimean Peninsula, a region of contested sovereignty claims between Russia and Ukraine.

**Step 2:** Click on the links below to open Google Maps in your web browser

- [Google Maps of Crimean Peninsula if viewed from Ukraine](#)
- [Google Map of Crimean Peninsula if viewed from Russia](#)

- **Question 1:** Is there a border separating the Crimean Peninsula from Ukraine in Google Earth? If so, what kind of symbology is used?
- **Question 2:** Describe the differences in how the region is symbolized Ukraine and Russia's version of Google Maps. Which one best corresponds to Google Earth?

**Step 3:** Repeat the exercise above, this time using **Google Earth** to search for Arunachal Pradesh, a disputed territory that straddles India and China. Next click on the links below to open **Google Maps** in your web browser

- [Google map of Arunachal Pradesh if viewed from India](#)
- [Google map of Arunachal Pradesh if viewed from China.](#)

- **Question 3:** What type of border delimits the region in Google Earth?
- **Question 4:** Describe the differences in how the region is symbolized India and China's version of Google Maps. Which one best corresponds to Google Earth?

## Answers

### Exercise 1

- **Question 1:** Characterized by a ~10m high wall, the street is largely devoid of life, no pedestrians are evident and the wall prevents the establishment of shops or services on the road.
- **Question 2:** The boundaries between predominantly Catholic and Protestant areas are generally underdeveloped zones. Internal neighbourhood areas thrive, while toward their periphery there is little commerce, industry, or pedestrian traffic. In exploring the neighbourhoods, you may have noticed that fences are much more commonplace than in most North American cities. The “peace fence” is thus reflective of a tradition of delineating territory.
- **Question 3:** The unshaded areas of the city are those with less than 50 per cent of residents reporting a particular religious affiliation. This may mean that no particular faith dominates, or that Catholics and Protestants share these neighbourhoods with other faiths or those not reporting an affiliation. The central axis of the city is largely unshaded and contains many common cultural and commercial institutions including universities, banks, galleries, and a commercial district.

### Exercise 2

- **Question 1:** Yes, and it is red, symbolizing a disputed boundary that has questionable legal status.
- **Question 2:** In Ukraine’s version of Google Maps, there is no border separating the peninsula; it appears as a part of Ukrainian territory. On the Russian version of Google Maps, there is a solid grey border, symbolizing an internationally agreed upon border, legal and free of dispute. Russia’s version best corresponds to Google Earth, since both have boundaries, albeit differently symbolized ones.
- **Question 3:** There is a red border, indicating a disputed boundary that has questionable legal status.
- **Question 4:** In India’s version of Google Maps, the region is shown to be an undisputed part of Indian territory. There is, however, a dashed grey line south of this solid grey borderline. In China’s version, the official border is shown in solid grey, farther south than the Indian border, meaning China has territorial control of most of the region. Google Earth shows India and China’s version of the border, both symbolized with red lines.