# Panda Diplomacy

INFO 5100 FINAL PROJECT

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## Work division

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|---|---|
| Siyi Chen - UX Designer | Research the panda diplomacy and historic events in several literature reviews, design the Graphic prototype, interaction design and create all the UI images. |
| Lini Tan - Web Developer | Implement the interaction between the slider, map and country icon. Improve the map graph animation. Merge different parts. |
| Hao Rong - Web Developer | Implement the line graph including animation, the switch interaction between the map graph and the line graph. Merge different parts. |
| Cassie Wang - UI Developer | Organize countrydata, provide technical support, implement animations, assets and styles to execute original design. |

## Description of the data

Introduction:

In this project we are presenting our project about the topic in China's panda diplomacy by the two-dimensions in time (years) and location (countries). The time range we chose is from 1939 to 2015, which can track the overall China's political events and strategies since the People's Republic of China established. The total countries we chose are the United States, the Soviet Union, Germany, Japan, France, Brazil, Mexico, the United Kingdom, Austria and Malaysia. These are the countries that China sent or lent panda to in these years. Besides the pandas as a way of entering into political discussions with other countries, we researched all the other historic events that happened in China and these countries or between China with these countries. In addition, we also compared military expenditure, GDP and trade balance between

China and each chosen country in order to see any impacts on these data. This helps us to deeply understand any associations between China's foreign relations and China's Comprehensive National Power.

The accuracy and completeness of the information might not be perfect because panda diplomacy is a sensitive topic. Some historic events are not easy to find and to confirm their authentication. For example, we are missing the data from North Korea and the Soviet Union even though these data should be important in China's panda diplomacy during 1940s-1950s.

Overall, we have three datasets: CountryData, HistoryEvent and PandaTimeline1.

| CountryData | |
|---|---|
| Military Expenditure | Military expenses of 11 countries from 1941 to 2015 |
| GDP | GDP of each country from 1960 to 2015<br>*Germany from 1970 to 2015 |
| Trade Balance | Trade balance of China to each foreign country from 1992 to 2015 |

| HistoryEvent | |
|---|---|
| Country | Countries who receive at least one panda |
| Year | The year of events which are big milestones of the relationship between that country and China |
| Title | A brief conclusion about that milestone |
| Text | Details about the milestone |

| PandaTimeline1 | |
|---|---|
| Country | Countries who receive at least one panda |
| Year | The year it receive the panda |
| Geolocation | The geolocation of the country's capital |
| Text | Details about the panda which has been sent and the event |

GDP and trade balance are retrieved from World Bank while military expenditure data is retrieved from ourworldindata.org. We choose these three factors because they are closely related to a country's foreign affairs. We integrated all three data into one file called countrydata. The file consists of each country's abbreviation, country name, year, GDP, trade balance, and military expense. Some of the data are missing from certain countries due to variable reasons (Germany, Austria, Malaysia, and Soviet Union).

There are two additional datasets PandaTimeline2 and PandaTimeline3 transformed from PandaTimeline1. The interaction between map and slider bases on the data from PandaTimeline2 and then interaction between slider and country icon bases on the data from PandaTimeline3. In these two datasets, each row is a year and each column represents a country. In PandaTimeline2, a country will be marked as "1" if it has received at least one panda, "0" otherwise. In PandaTimeline3, a country will be marked as "1" only in the period when it has received the panda, "0" otherwise.

**Data sources:** See Appendix

## Mapping from data to visualization

The color themes we used for this project is black and white, which is based on the color of panda, and red and yellow (bright orange), which is the color theme of China. We fill China in red on the map with a panda on it showing that all pandas come from China. For the line chart, because we want to put emphasis on the country to which we are comparing China.

(1) Panda map

For the panda map, we use Geo Mercator Scale to display the world map and read the panda data in the map simultaneously. We connect it with country icons and noteboard using the slider. When drag the slide to a specific year when China sent panda to other country, the corresponding country in the map will be filled in yellow, the country icon will be lightened and the noteboard will display the specific details of the event. The left side of the slider turns bright orange when the handle passes a certain year. The little triangle on top of the slider indicates the years when a panda is sent. Meanwhile, a timeline is shown below the slider with indications of every 10 years.

What's more surprising, a panda will fly from China to that country. We use position transition to realize the flying of panda across countries.

(2) Line graph & Historic events

For the second graph which combine the line graph at the top and the historic events at the bottom. We use one responsive linear scale to build Y scale for the military force, the GDP and the trade balance data. In each cases, this responsive scale will read the data and record the maximum and the minimum value in current category of the selected country, and build linear

scale based on the recorded maximum and minimum value. We use another linear scale to build the X scale which takes in the year value and convert it into x position.

In the line graph, the data line of China is colored in black and the data line of the other country is colored in white. A exception is the line of trade balance in which we only use one line. Because the trade balance is the relationship between China and the other country. The positive value represents China has positive net export to the other country.

Since all data except military expenditure are in the unit of $1, whereas military expenditure is in $1m, we convert the military data to its actual number and format all data by thousand, million, billion, and trillion with our formatValue function for yAxis, and formatNum function for the tooltips.

We also implement a historic-event timeline right below the line chart. When the country is clicked, dots connected to every historic event with year and title are shown on the timeline. Initially, the title is shown as "click me?" to act as a hook to attract users to click on. When the titles are hovered, the title will be revealed. The cursor indicates that the title is clickable. A modal box will pop up with the title and its content.

Last but not least, to remind users that pandas are the core theme of this project, we add the panda to its corresponding time on the timeline for each country so that users can know when and how many pandas are sent to the country.

## The story

Panda diplomacy is the People's Republic of China's use of giant pandas as diplomatic gifts to other countries. Pandas are important diplomatic symbols as an indicator of the diplomatic relationship between China and the other countries. From the 1940s to 1980s, pandas have been sent as diplomatic gifts to other countries. Due to panda preservation reason, nowadays pandas can only be rent from other countries for certain years.

By making this panda diplomacy visualization, we want to observe the China diplomatic move by tracking the sending record of pandas. At the same time, we compare the sending record of pandas to some index that can represent a country's global competitiveness and relationship with China including military spending, GDP, and trade data with China. The first question we want to ask is that, is sending pandas an important symbol for the China's diplomacy. The second question we want to ask is that, if panda can represent a diplomatic milestone, can these indexes partly explain why China want to build a friendly diplomatic relationship with them. Moreover, we want to observe the diplomatic trace of China from 1940 to now by digging into the pandas sending record.

To answer the question we raised, we made two graphs. The first one is the map visualization which shows the sending trace and the detailed story of the pandas according to the slidable timeline. The second graph is the line chart of the competitiveness indexes of countries in comparison with the panda's records and the timeline of China's major diplomatic move. From the visualization, we can generally conclude that there is a positive correlation between panda sending and China's friendly diplomatic move towards different countries. Also from the

frequency and the time of the record, we can see how motivated that China want to make close diplomatic moves towards the particular country in a certain time range.

## Surprising

Panda is not only the national treasure of China, but also a reflection of diplomacy relationship between China and other countries. During the decades after the Communist Chinese took control in 1949, as one historian of panda diplomacy notes, they would "benefit from the careful deployment of captive pandas for explicitly political purposes." For example, for a long time from 1949 to 1972, the giant panda was only granted to allied socialist states. Western countries like Britain and America could not be allowed to get any. That's why panda Chi Chi, who was sent to the Austrian animal broker in 1958, received overwhelming welcome in western countries and even became the antetype of the logo of the World Wildlife Fund.

However, there is a critical point in 1972: President Richard Nixon visits China. This Richard Nixon landmark' trip ended 25 years of isolation and tension between the United States and the People's Republic. After that, China mitigated the tension among the west countries and normalized the relations between the other countries. Therefore, we could find that China frequently sent Pandas to foreign countries in 1970s. One history critics commented that China "benefit from the careful deployment of captive pandas for explicitly political purposes."

The tradition saw a significant shift in 1982 after Panda Fei Fei, the last panda sent overseas as present by the Chinese government. Moving forward, the animals would only be sent out on 10-year loans, would require payment of a standard annual fee (for the U.S. it was $1 million) and decreed that all cubs birthed from loaned pandas were Chinese citizens, regardless of place of birth. As international politics changed, Chinese authorities started to loan pandas to countries that they wanted to have good trade relations with. We assumed that China amended its panda protocols because at that time, China was recognized by most of the countries and no longer needed to send the national treasure panda as the presents to other countries. In the data, we can see after 1980s in the line chart, the lines in the GDP and military power of China is gradually trending upwards. Also China began to build trade relations with these countries and had the trading balance in positive with these countries.

## Appendix
Panda diplomacy resource:

http://www.telegraph.co.uk/news/earth/wildlife/8251089/A-history-of-Panda-Diplomacy.html
http://www.history.com/news/panda-diplomacy-the-worlds-cutest-ambassadors
https://www.cia.gov/news-information/featured-story-archive/2015-featured-story-archive/panda-diplomacy.html
https://www.travelchinaguide.com/tour/panda/diplomacy.htm
http://www.china.org.cn/english/features/panda/37969.htm
http://www.giantpandaglobal.com/zoo/zoo-berlin/pambassador-zoo-berlin/

China foreign relations resource:
http://www.bbc.com/news/world-asia-pacific-13017882
http://www.cfr.org/china/us-relations-china-1949present/p17698
http://www.americaslibrary.gov/jb/wwii/jb_wwii_pearlhar_3.html
https://en.wikipedia.org/wiki/China%E2%80%93United_Kingdom_relations
https://www.timetoast.com/timelines/imperialism-in-china--4
http://www.reuters.com/article/us-russia-medvedev-foreign-timeline-idUSL1912530020080519
http://countrystudies.us/china/128.htm
http://www.timeforkids.com/destination/austria/history-timeline
http://www.fmprc.gov.cn/mfa_eng/ziliao_665539/3602_665543/3604_665547/t18003.shtml
https://en.wikipedia.org/wiki/China%E2%80%93France_relations
http://www.eu-asiacentre.eu/pub_details.php?pub_id=130
https://en.wikipedia.org/wiki/China%E2%80%93Mexico_relations
http://www.iberchina.org/files/2016/spain_china_relations_esteban.pdf
https://en.wikipedia.org/wiki/China%E2%80%93Germany_relations
http://www.dw.com/en/40-years-of-sino-german-relations/a-16299632
http://www.worldpoliticsreview.com/trend-lines/9025/global-insider-china-malaysia-relations

Numeric Data in Military Expenditure, GDP and Trade Balance:
http://data.worldbank.org/country
http://wits.worldbank.org/CountryProfile/en/Country/USA/Year/2015/TradeFlow/EXPIMP
https://ourworldindata.org/military-spending/