

Project 3: Expressive Data Visualization

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DESN2021 Lab 2
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MAIN DATA SET

Excel Workbook – All Tables

https://drive.google.com/file/d/1aeiYAYL7MUV9TPuadZqJi2Eg0l7AKeqc/view?usp=sharing

Research Questions

What are the statistics for:

- Acceptance/rejection rate
- Number of applications filed and/or resolved per year
- Percentage breakdown based on country
- Percentage breakdown based on claim religion
- Average time elapsed between application and result

Which countries have many claimants, few claimants?

What is the relationship between conditions in the country and the refugee claims?

Which religious groups have the most claims or are the most persecuted?

DATA ANALYSIS

Overview stats on claims by decision type (“explanation”) and claims by year

Claims by Explanation	Count of Claims	Percentage of Claims
Positive	6372	54.4%
Negative	2848	24.3%
Expedited Positive	1958	16.7%
Withdrawn	243	2.1%
Abandoned	191	1.6%
Neg. No Cred Basis	76	0.6%
Deceased	11	0.1%
104.(2)(a)	10	0.1%
Administrative	9	0.1%
104.(2)(b)	3	0.0%
Grand Total	11721	100.0%



Date referred to RPD	Count		
2007	1		
2010	4		
2011	30		
2012	325		
2013	6		
2014	89		
2015	908		
2016	3594		
2017	4527		
2018	2184		
2019	53		
Grand Total	11721		

Date of RPD decision	Count
2015	113
2016	2415
2017	3433
2018	3285
2019	2475
Grand Total	11721

DATA ANALYSIS

Cross-tabulating countries, acceptance rate, government restrictions index (Pew), social hostilities index (Pew)

<https://www.pewforum.org/2020/11/10/in-2018-government-restrictions-on-religion-reach-highest-level-globally-in-more-than-a-decade/>

Count	Explanation 						
Country of Persecution 	Positive	Expedited Positive	Grand Total	Grand Total (All Claims)	Acceptance Rate	Government Restrictions	Social Hostilities
Pakistan	1633	152	1785	2146	83.2%	High	Very High
Iran	876	173	1049	1226	85.6%	Very High	Moderate
Syria	380	599	979	1067	91.8%	Very High	Very High
Iraq	739	234	973	1152	84.5%	Very High	Very High
Egypt	319	537	856	894	95.7%	Very High	Very High
China	432		432	960	45.0%	Very High	Moderate
Eritrea	257	94	351	429	81.8%	Very High	Low
Nigeria	218		218	1112	19.6%	High	Very High
Yemen	108	105	213	227	93.8%	Very High	High
Turkey	172	27	199	265	75.1%	Very High	High
Somalia	148		148	285	51.9%	Moderate	High
Bangladesh	138		138	183	75.4%	High	High
Saudi Arabia	113	10	123	159	77.4%	Very High	Moderate
Afghanistan	70	18	88	117	75.2%	High	High
Russia	67		67	76	88.2%	Very High	High
Lebanon	63		63	139	45.3%	Moderate	High
Kazakhstan	56		56	63	88.9%	Very High	Low
Sudan	49	4	53	69	76.8%	High	Moderate
India	52		52	148	35.1%	High	Very High
Algeria	41		41	53	77.4%	Very High	High
Libya	37	1	38	39	97.4%	High	Very High
Azerbaijan	37		37	50	74.0%	Very High	Low
Jordan	32		32	80	40.0%	High	High
Sri Lanka	31		31	39	79.5%	Moderate	Very High
Palestine	25		25	32	78.1%	Moderate	High
Angola	21	2	23	36	63.9%	Moderate	Low
Bahrain	21		21	28	75.0%	High	Moderate
Ethiopia	16		16	26	61.5%	Moderate	High

INSIGHTS FROM THE DATA

Overall

- Overall acceptance rate for refugee claims with a basis of religious persecution is about 71.1%
- Accepted claims with a basis of religious persecution peaked in 2017, with over 3,400 positive decisions.

Religions

- Coptic Christians have the highest acceptance rate at 95.6%, followed closely by the Ahmadiyya Muslim, Bahai, and Apostasy categories.
- The Chieftancy and Fetish Priests category has the lowest acceptance rate at 11.5%, with Sikh at 25.6%, and Traditional (folk religions) at 27.0%. No other category has an acceptance rate under 50%.
- In terms of share of total accepted claim decisions, the Varied/Other, Christian, Sunni Muslim, and Ahmadiyya Muslim categories make up 23.3%, 22.9%, 13.7%, and 12.0% respectively.

Countries

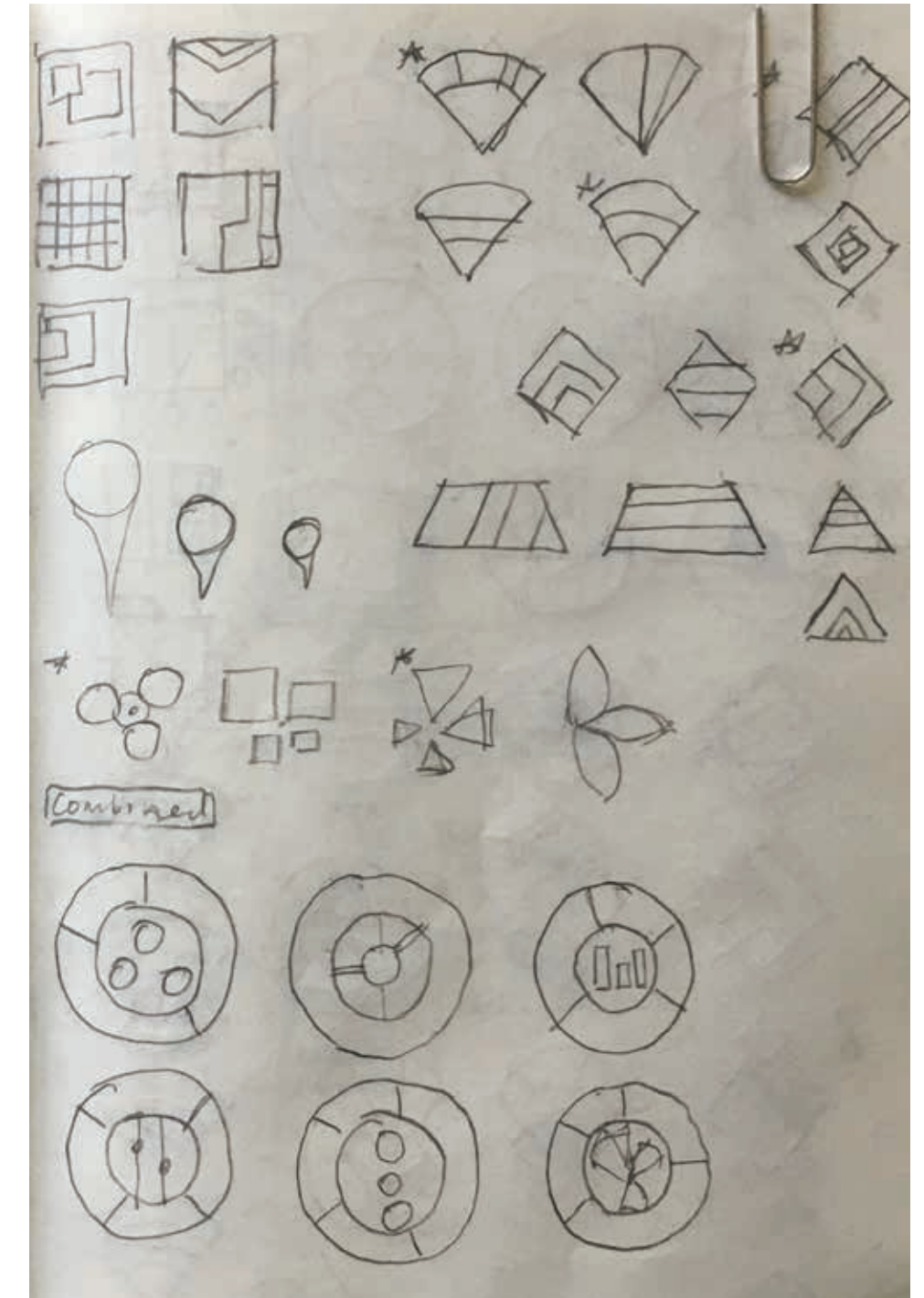
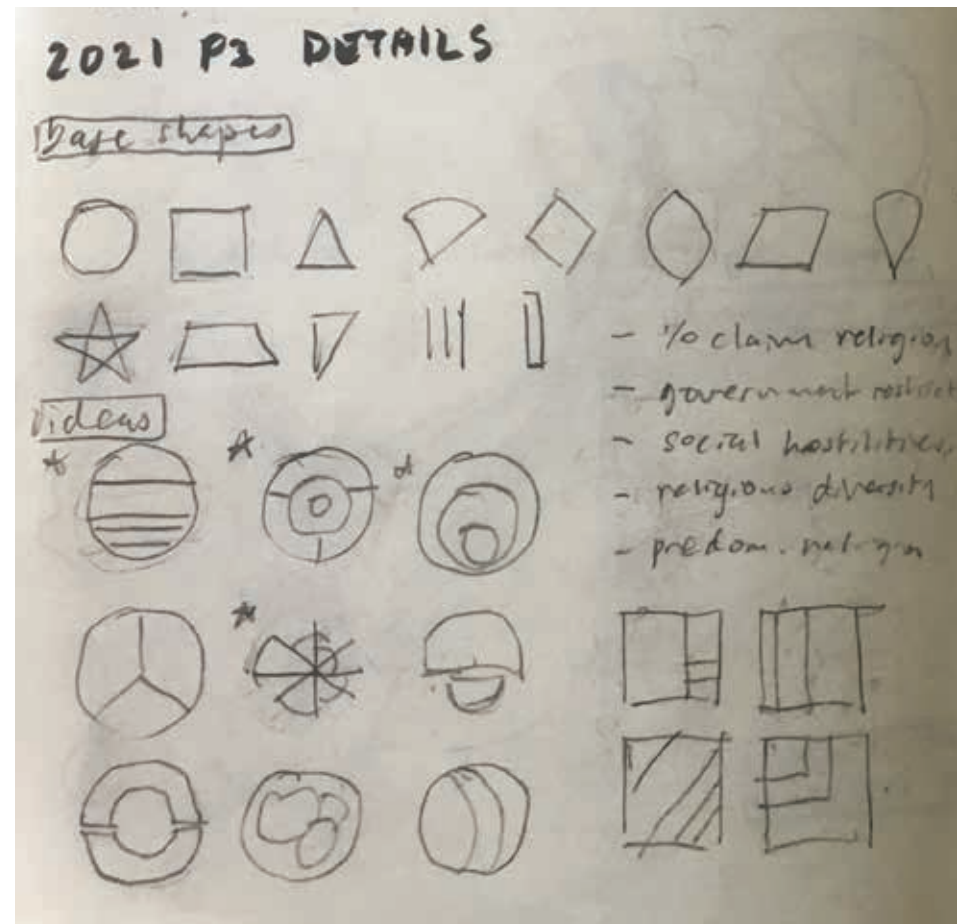
- Pakistan, Iran, Iraq, Nigeria, Syria, and Egypt make up a combined 67.7% of all accepted claims.

Comparison

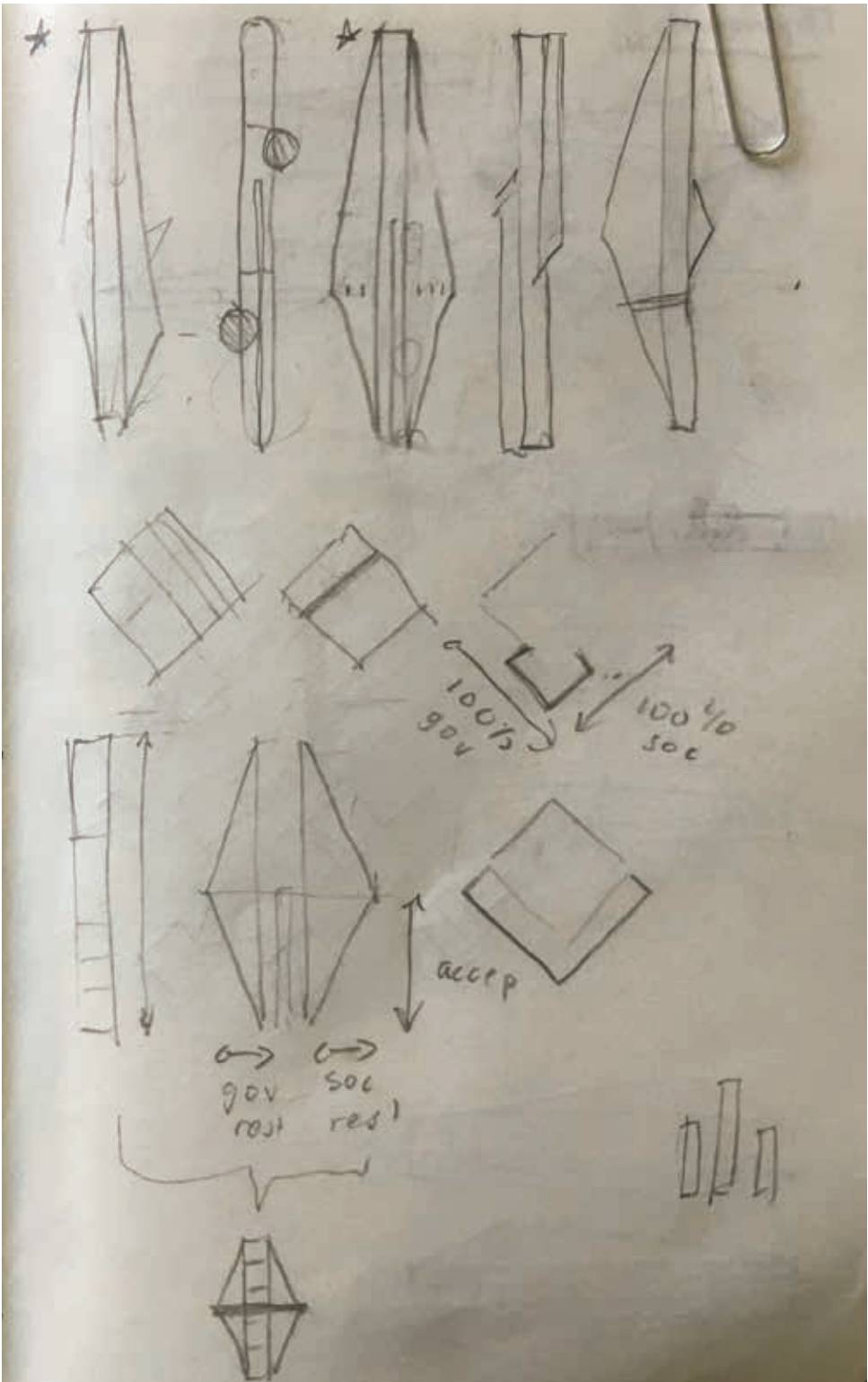
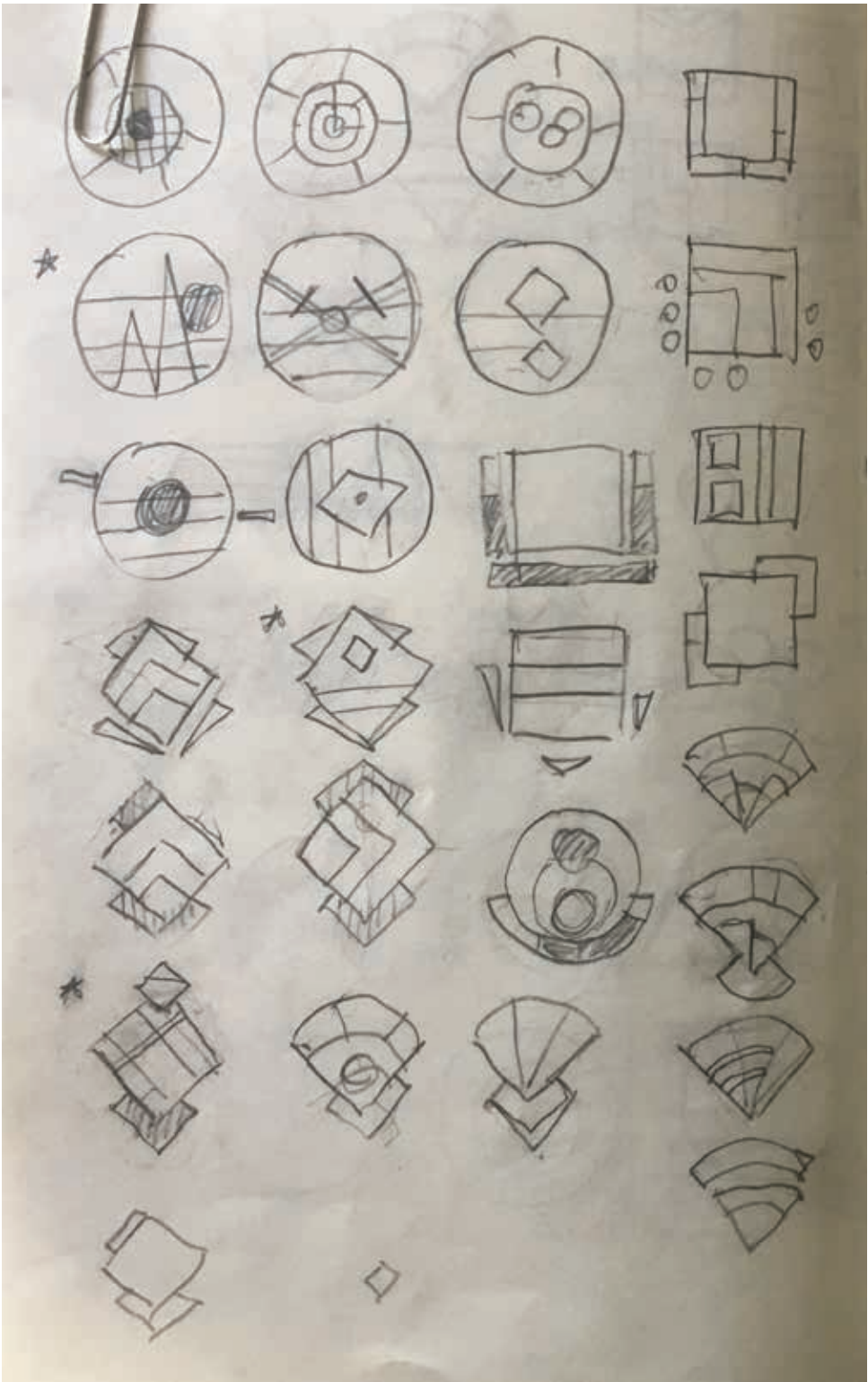
- Number of accepted and total claims is moderately correlated with government restrictions on religion and social hostilities in the country
- Number of claims has very little correlation with religious diversity in the country
- Acceptance rate is somewhat correlated with Government Restrictions and Social Hostilities for countries with at least 30 claims.

SYMBOL SYSTEM – SKETCHES

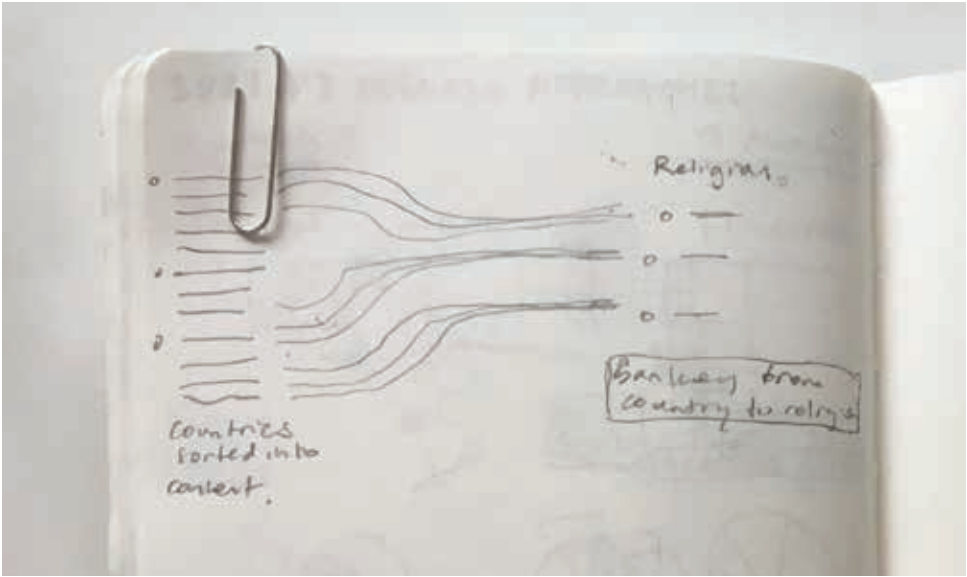
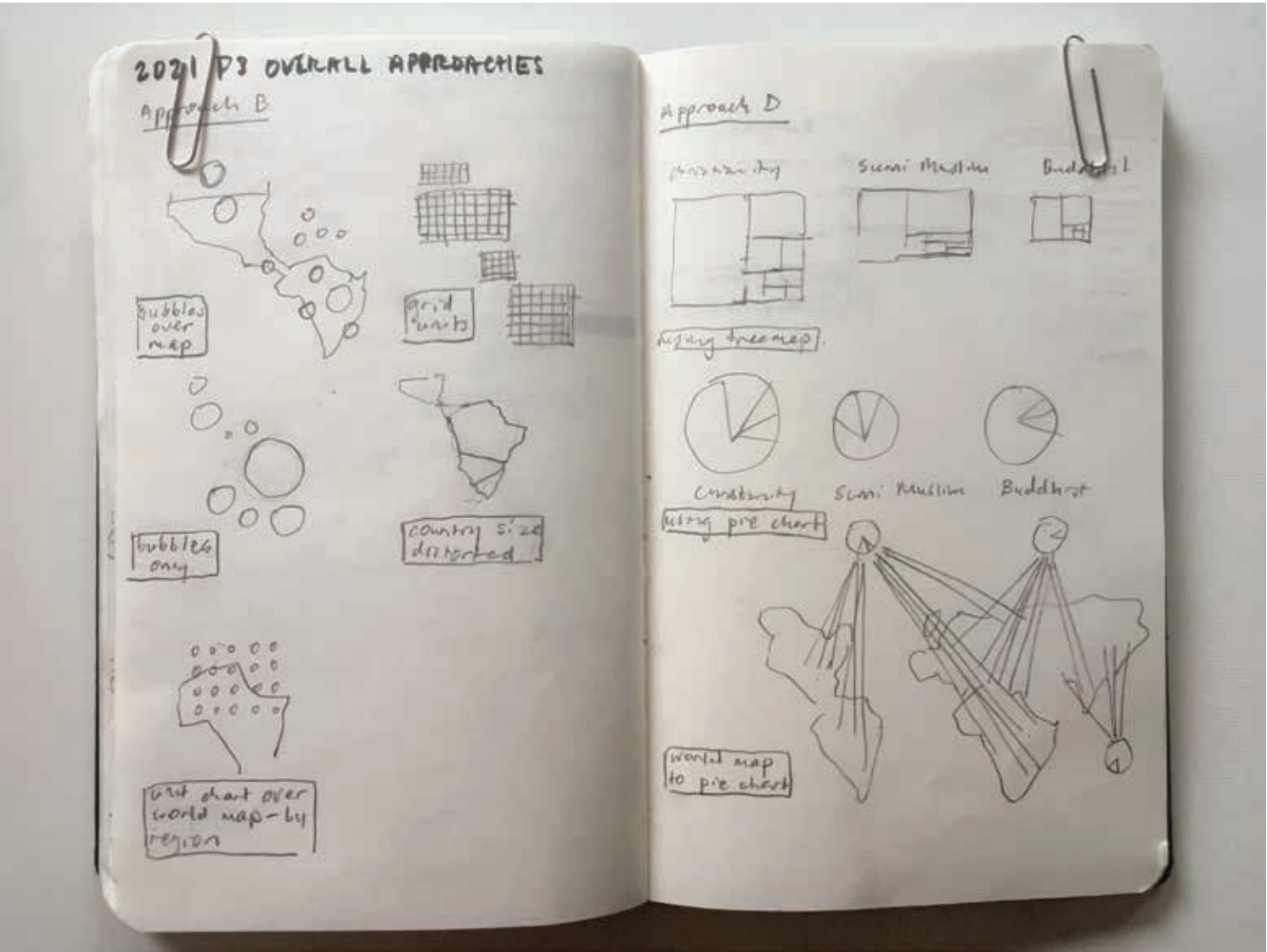
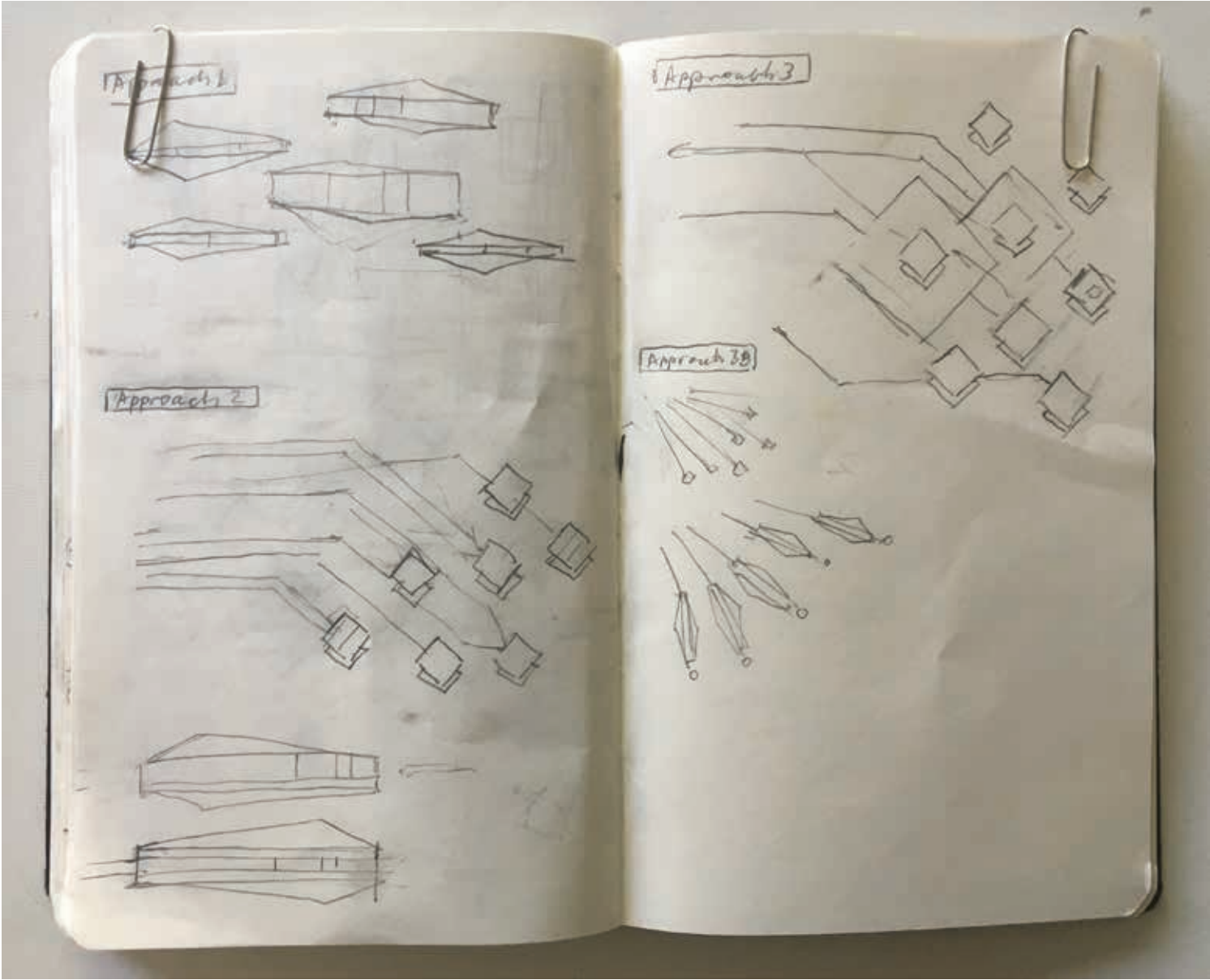
As you can see, I starred symbol designs that I liked most. I looked for combinations of shapes that had cosmic or spiritual connotations. Symbol systems with diamonds and triangles were better in this respect.



SYMBOL SYSTEM – SKETCHES



LAYOUT SKETCHES Taking inspiration from the airport terminal and other world map infographic, I created a list of possible visualization approaches.



SCROLLING
WEBPAGE IDEA

Sketches

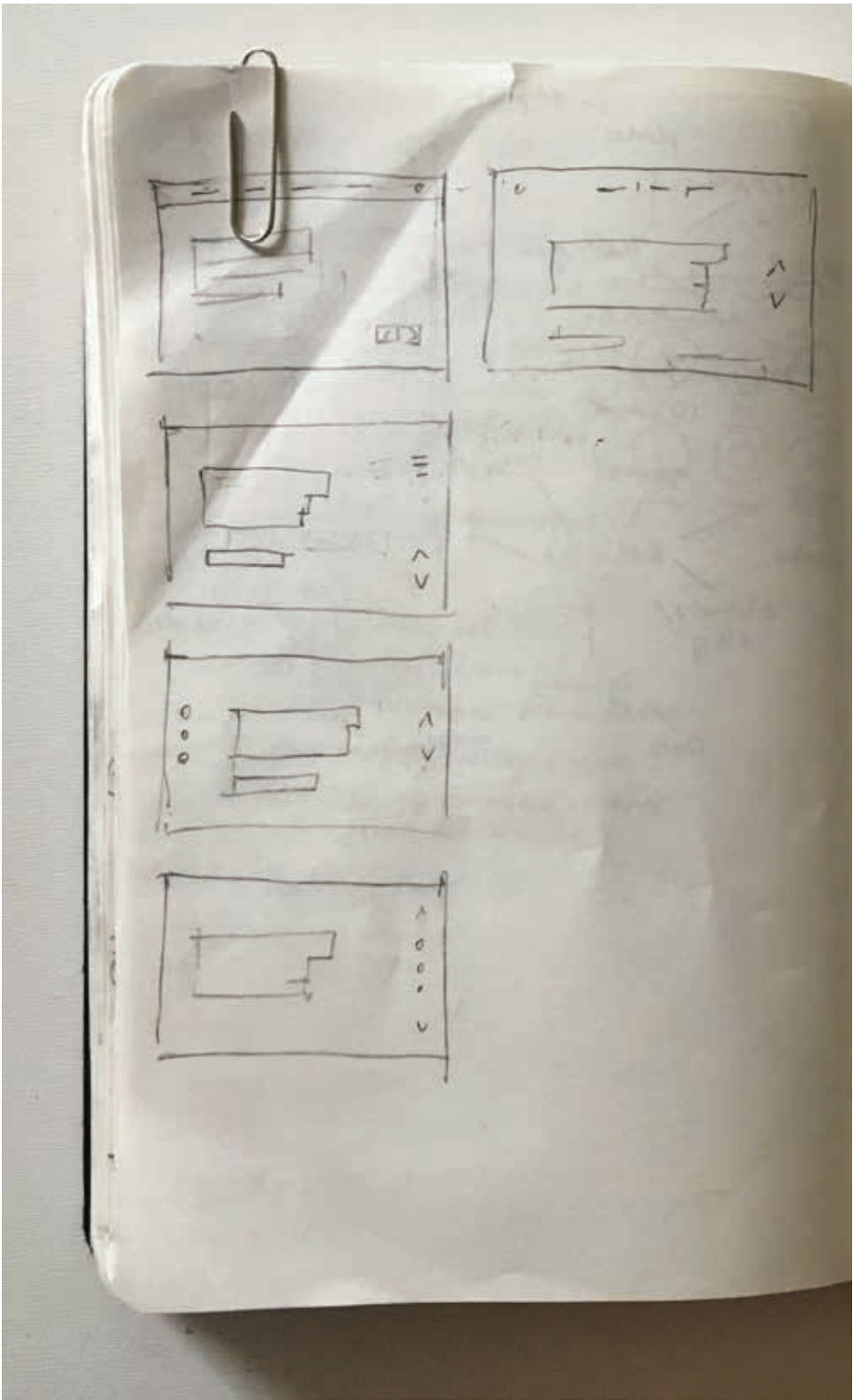
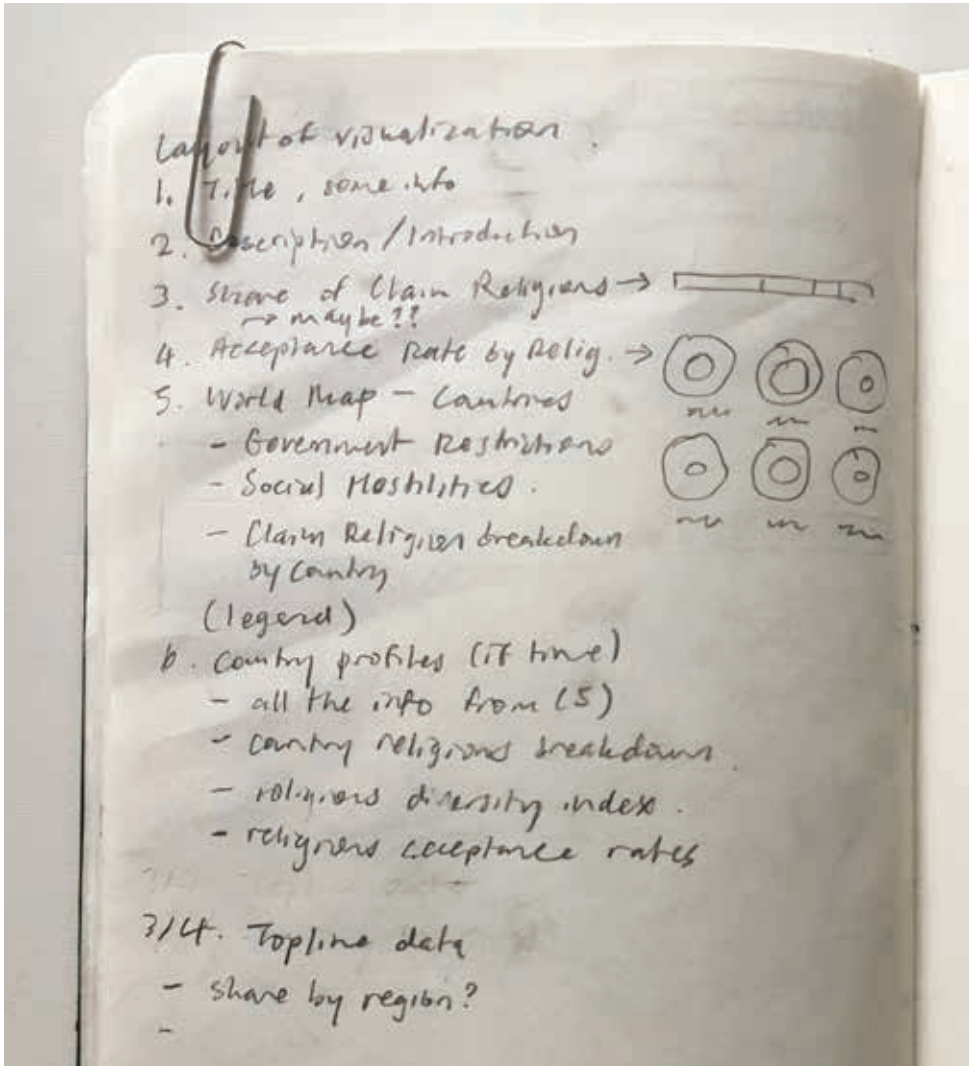
Inspiration sources

<https://www.awwwards.com/inspiration/2oc-earth-storytelling>

<https://www.awwwards.com/inspiration/scrolling-storytelling-fishing-the-feed>

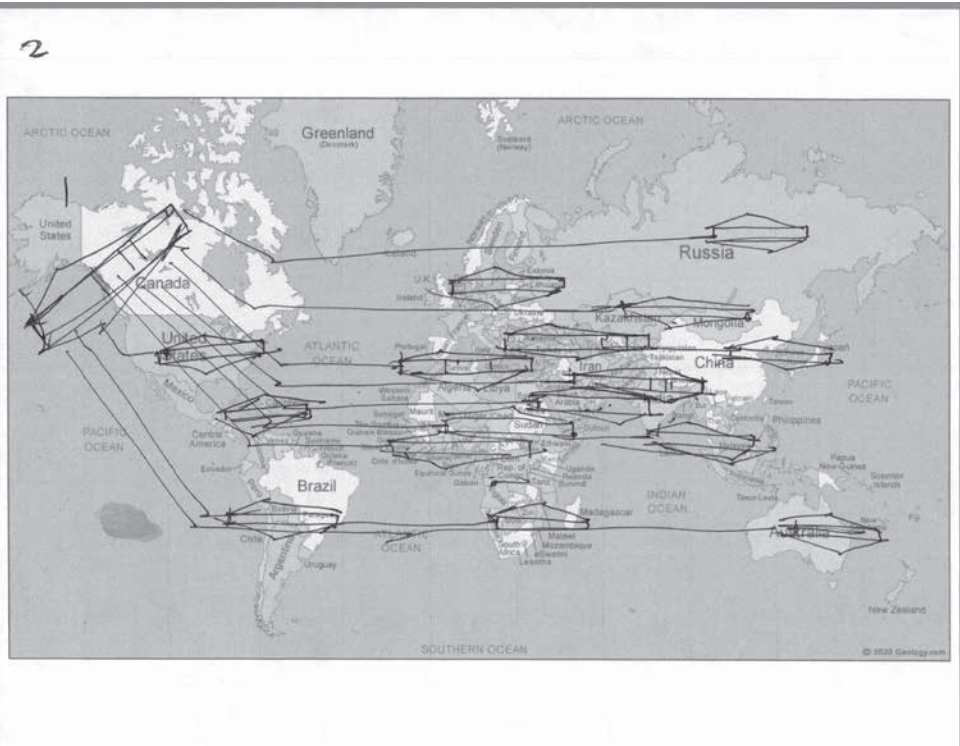
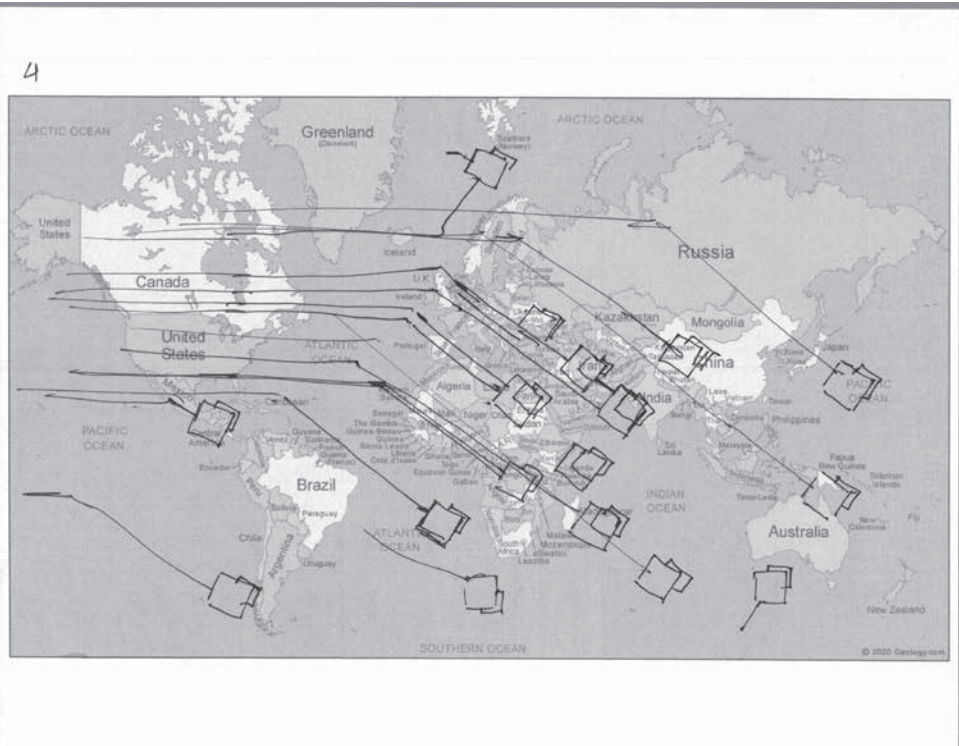
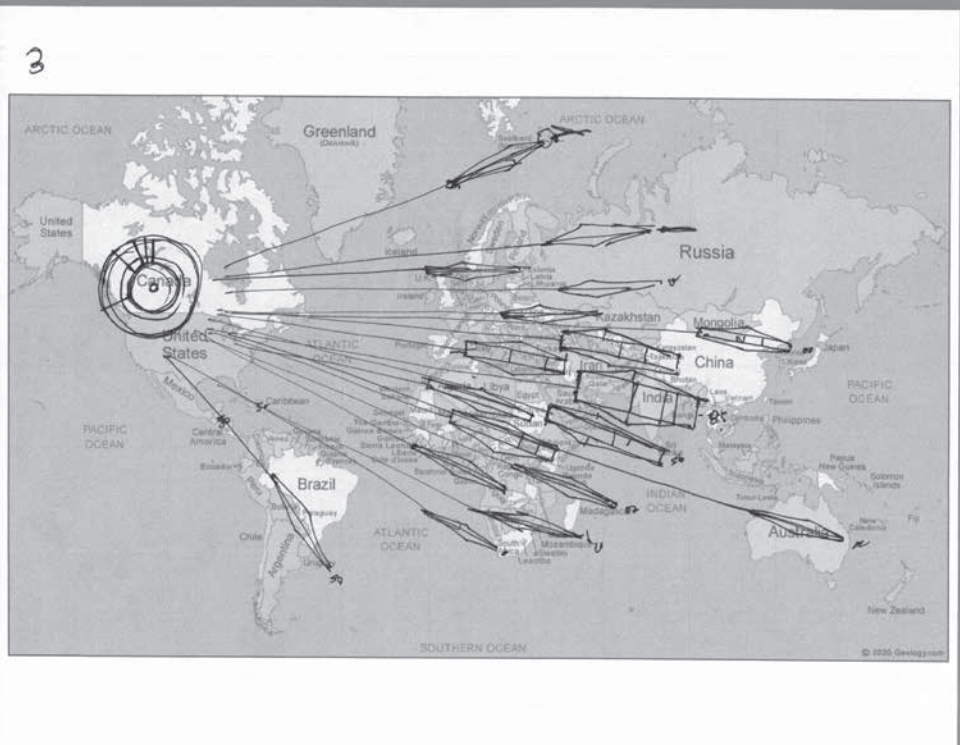
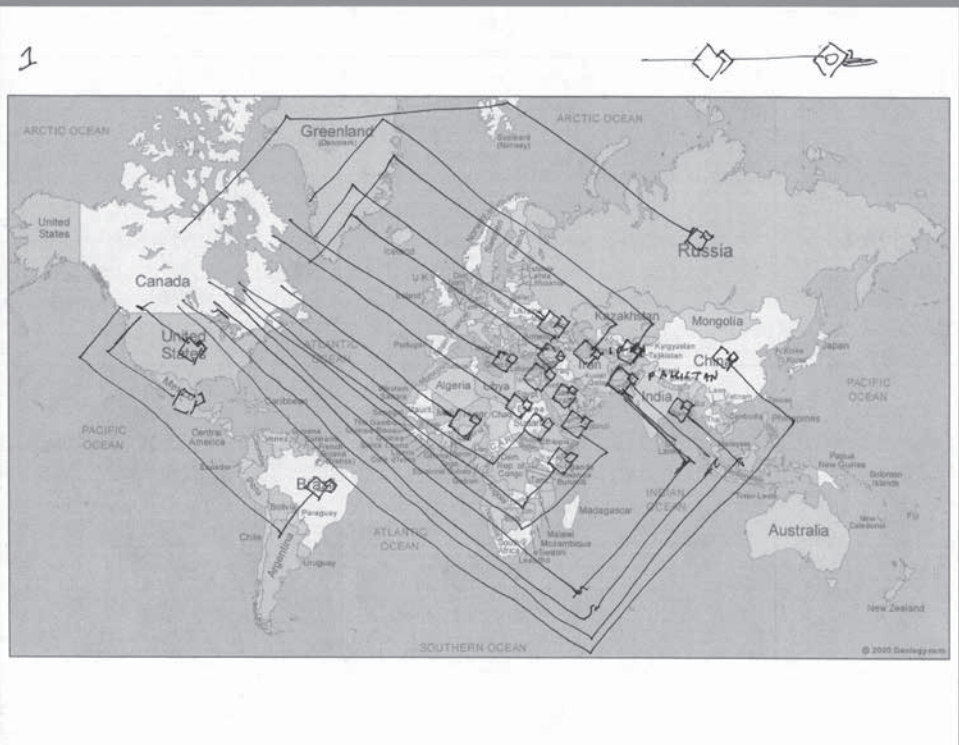
Although my final design did not have an introduction and some explanatory paragraphs in a scrolling format, I would add this if I were to continue with the project, since it would better contextualize my visualization and make it easier to understand.

Outline

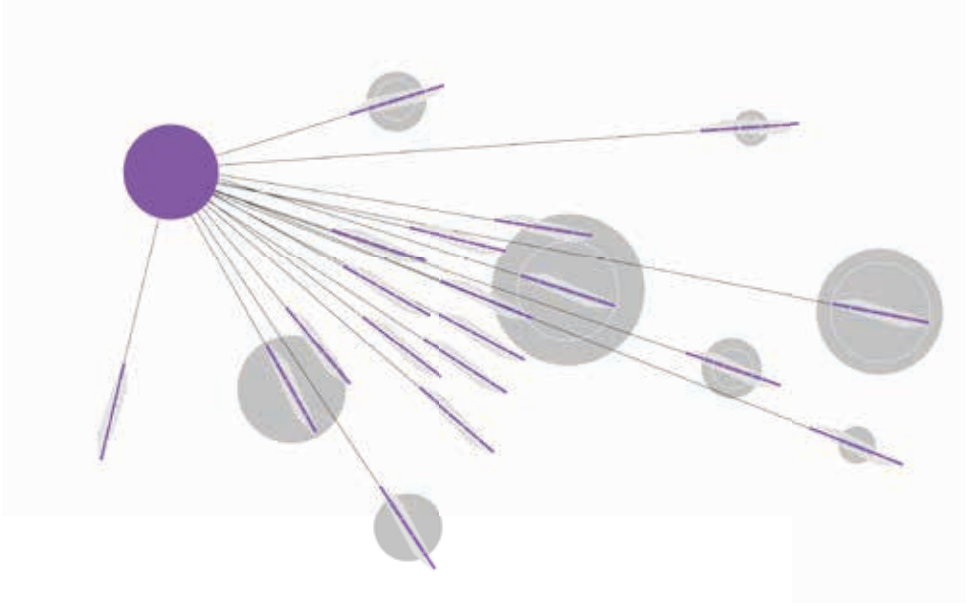
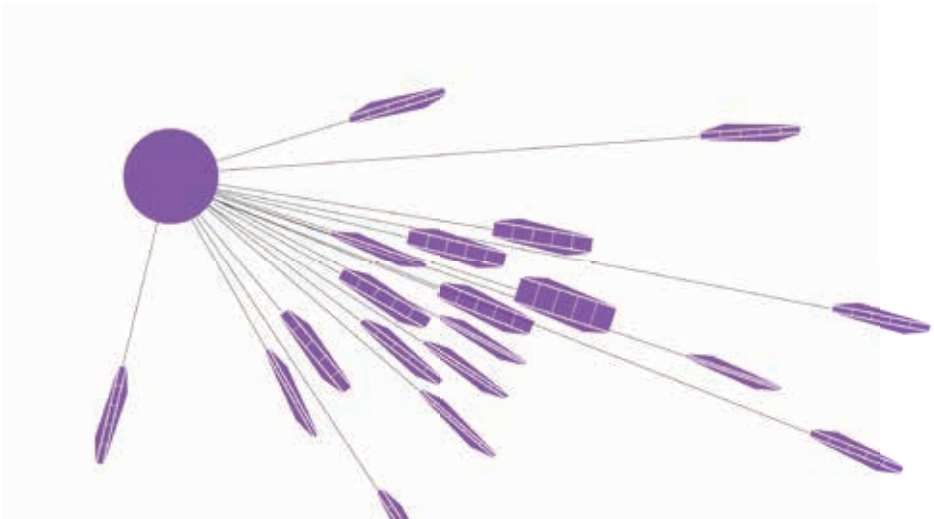
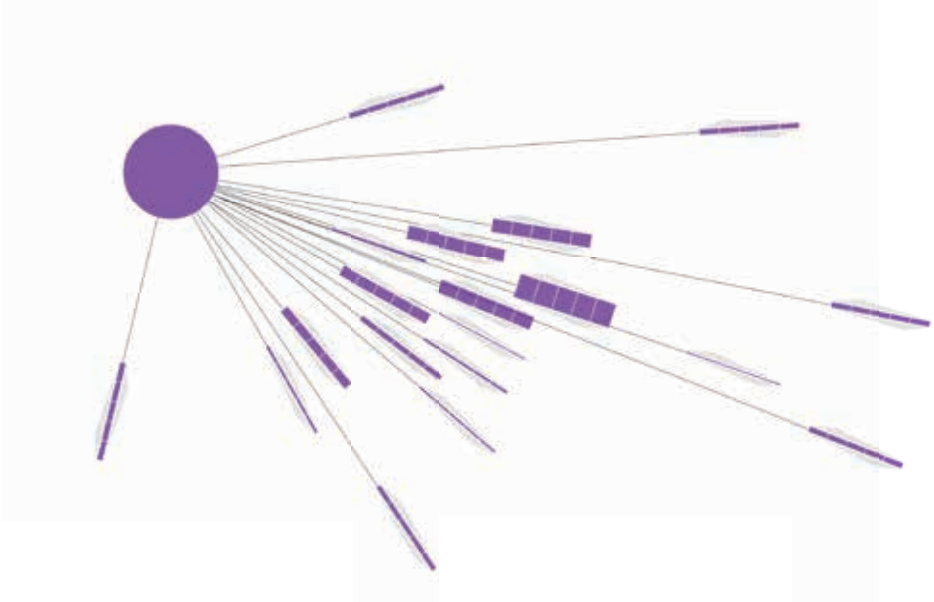
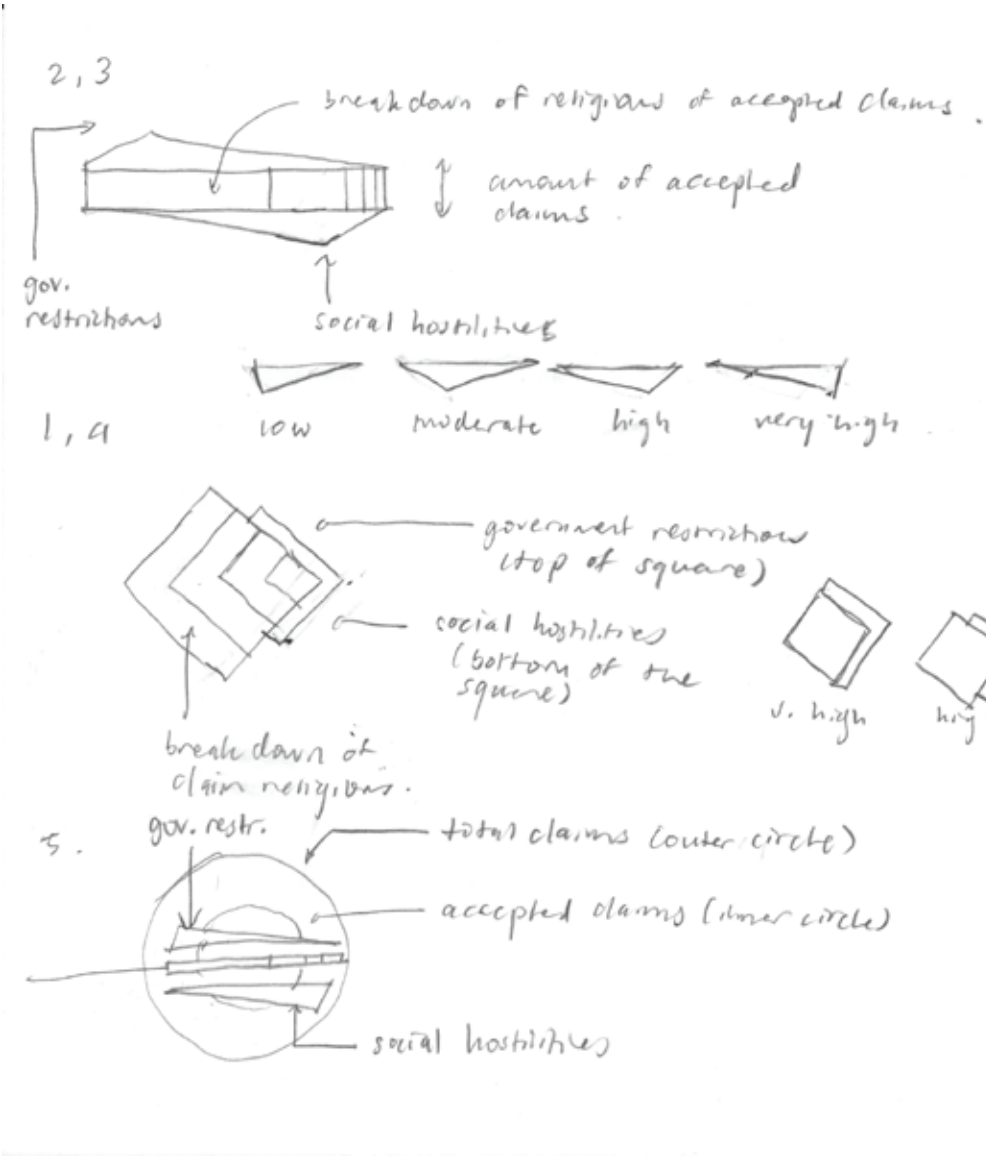


LAYOUT DRAFTS

As you can see, I drew lines from each data point or “country”, leading back Canada to emulate the migration of refugees from their home country to Canada. However, I was stumped on how to represent the country of Canada on the map, and whether it would be depicted with the same symbol system as the rest of the countries.



VISUALIZATION TESTS



When I first tested my visualization digitally, I had the height of the bars represent the claim count and the width stay consistent (see legend to the left). However, with this approach I was not convinced by the size and weight contrast, so I added a circular element to each country or “data point” to differentiate them by scale.

TYPEFACE PAIRINGS

Religious Refugees
in Canada from 2016-2019

GOVERNMENT RESTRICTIONS
Pakistan • Iran • Syria

Paragraph lorem ipsum dolor sit amet

Neue Haas Unica
Kepler

Religious Refugees
in Canada from 2016-2019

GOVERNMENT RESTRICTIONS
Pakistan • Iran • Syria

Paragraph lorem ipsum dolor sit amet

Varta
Mulish
Meta Serif

Religious Refugees
in Canada from 2016-2019

GOVERNMENT RESTRICTIONS
Pakistan • Iran • Syria

Paragraph lorem ipsum dolor sit amet

Varta
Minion

Assistant
Mulish
Meta Serif

Religious Refugees
in Canada from 2016-2019

GOVERNMENT RESTRICTIONS
Pakistan • Iran • Syria

Paragraph lorem ipsum dolor sit amet

Varta
Source Serif

Religious Refugees
in Canada from 2016-2019

GOVERNMENT RESTRICTIONS
Pakistan • Iran • Syria

Paragraph lorem ipsum dolor sit amet

Assistant
PT Serif
Mulish

Religious Refugees
in Canada from 2016-2019

GOVERNMENT RESTRICTIONS
Pakistan • Iran • Syria

Paragraph lorem ipsum dolor sit amet

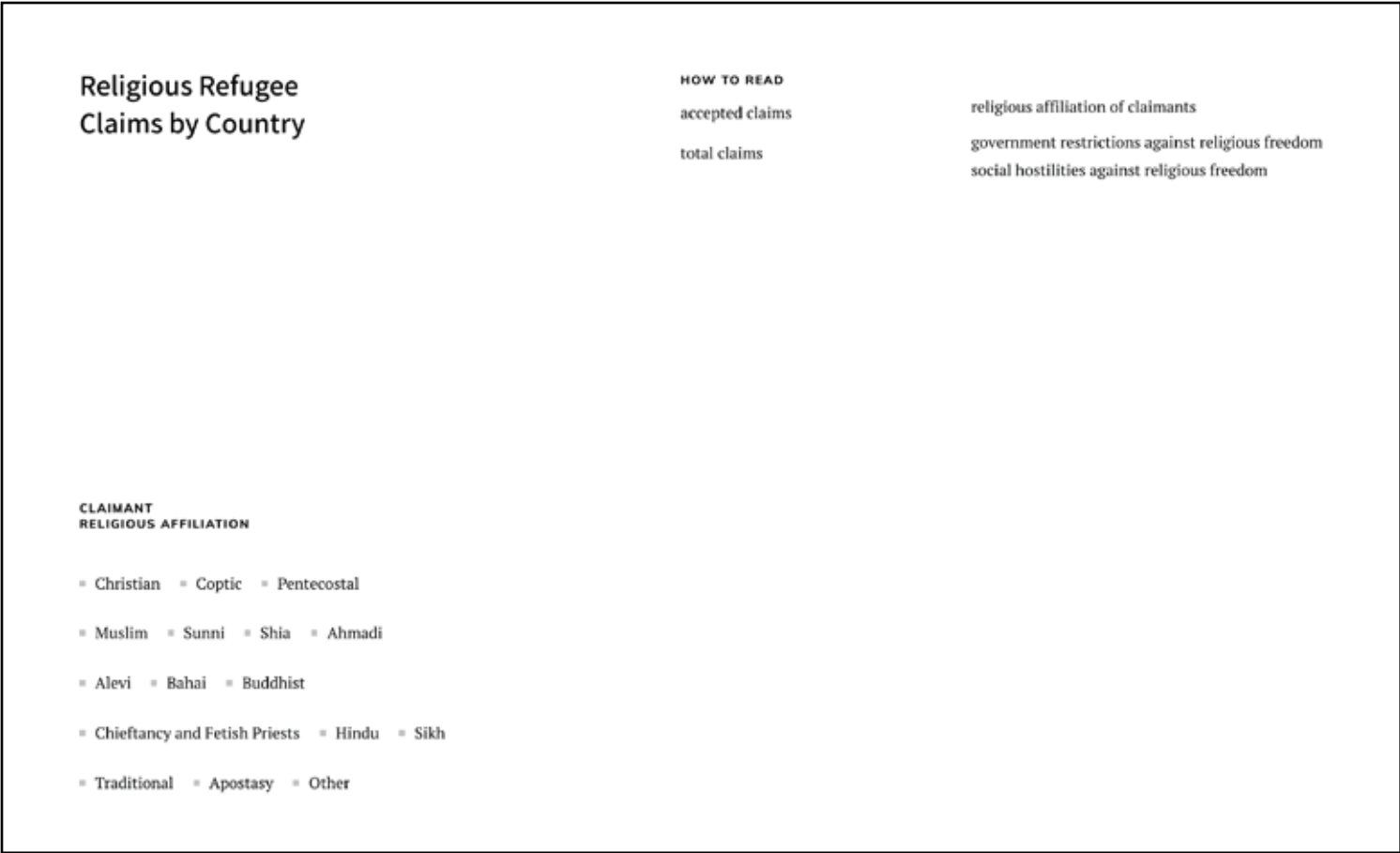
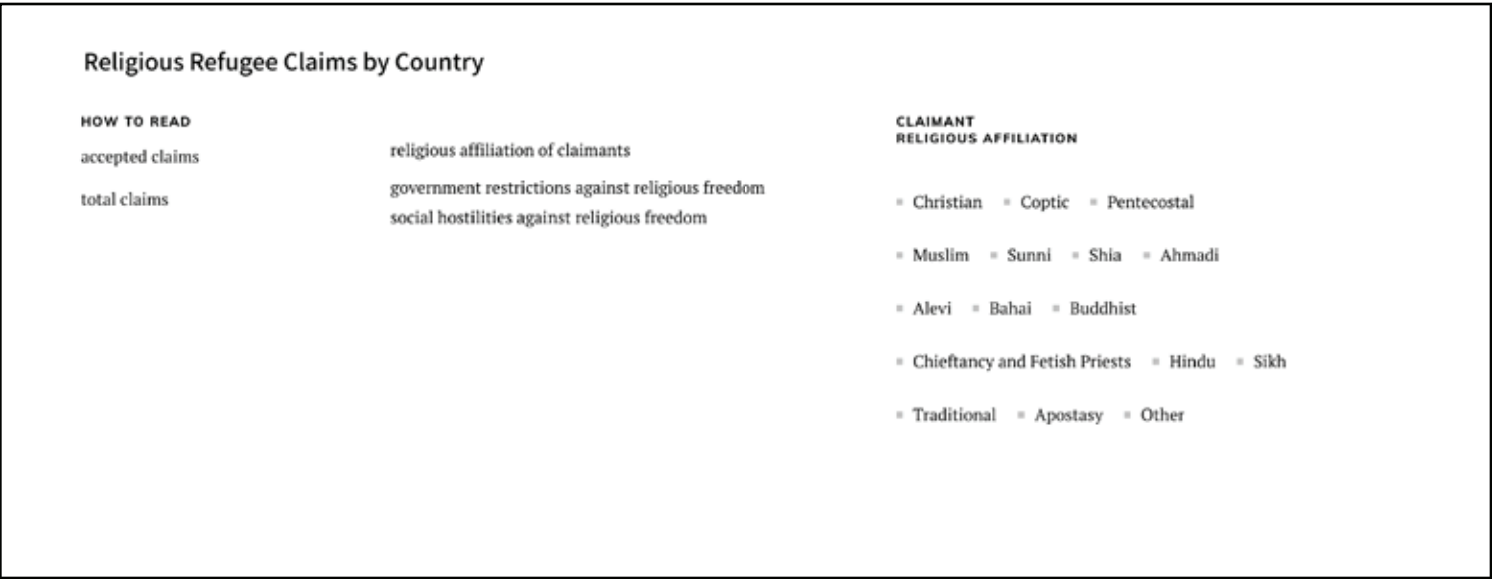
I initially experimented with an Swiss-International typeface pairing. However, the best pairing was one that combined an sans serif with connotations of airport concourses (Assistant) and a serif with a softer, journalistic feel (PT Serif).

I was inspired by publications such as South China Morning Post, which rely on pairings with similar-looking sans serifs and serifs.

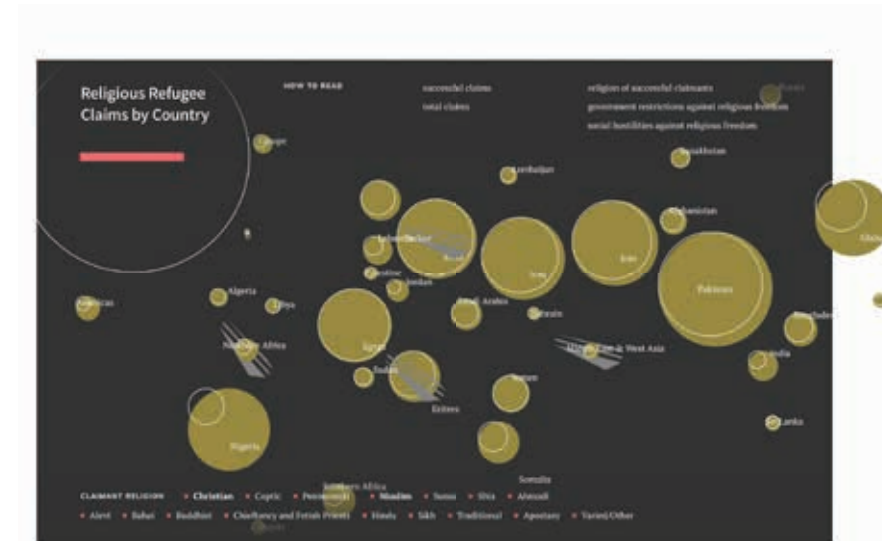
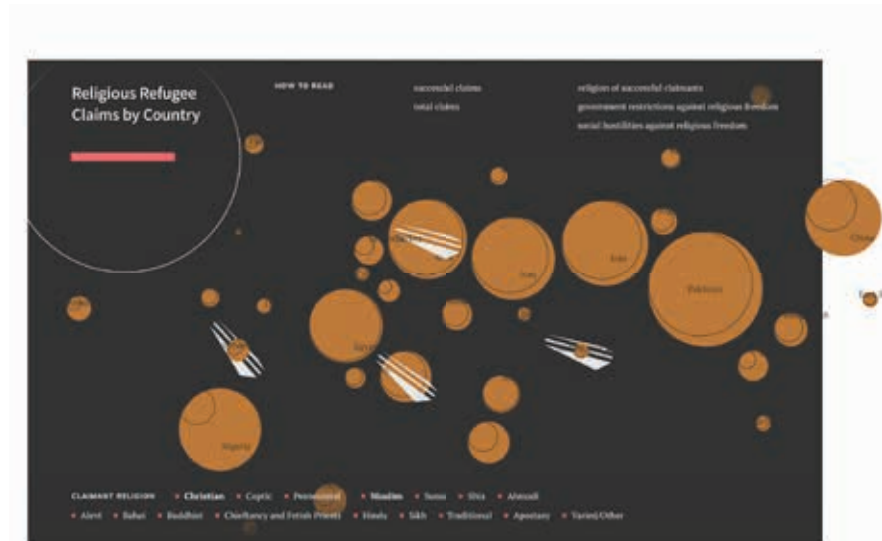
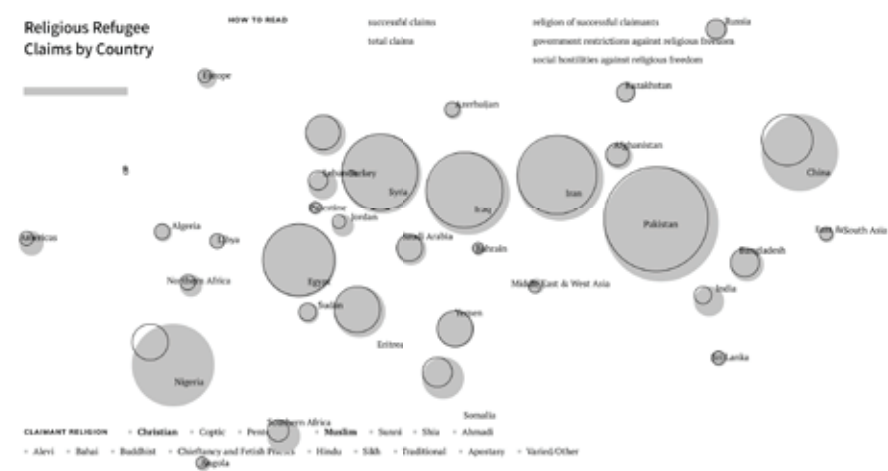
Chosen pairing

LEGEND LAYOUT

My main objective for the legend was to save enough space for the bulk of the visualization. Hence, the best approach was actually to separate the legend into two components that would hug the top and the bottom of the viewport (bottom right).

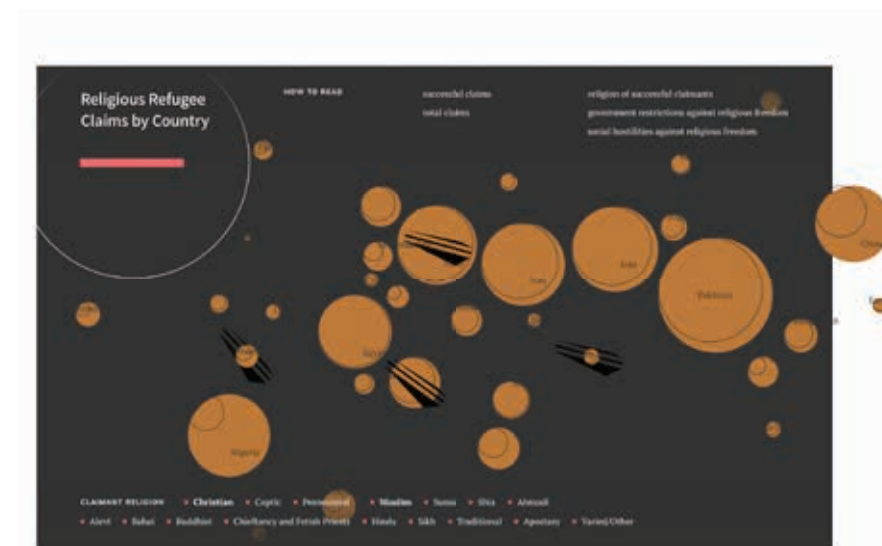
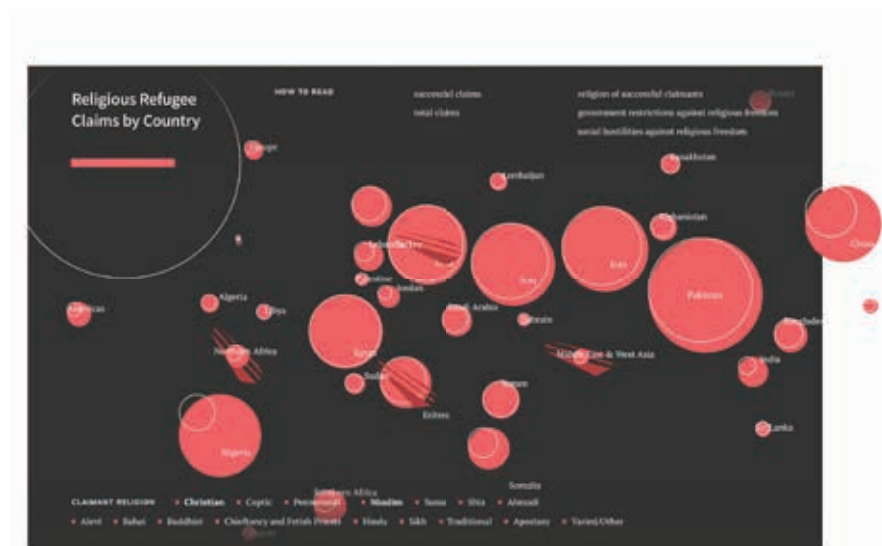


VISUALIZATION DRAFTS + COLOUR EXPERIMENTATION



I laid out the circles on the map based on their location relative to each other, using a world map overlaid temporarily for reference.

For colours, the warm orange had the strongest connotations of religion, as many faiths use the colour orange in one way or another.



RELIGION COLOURS

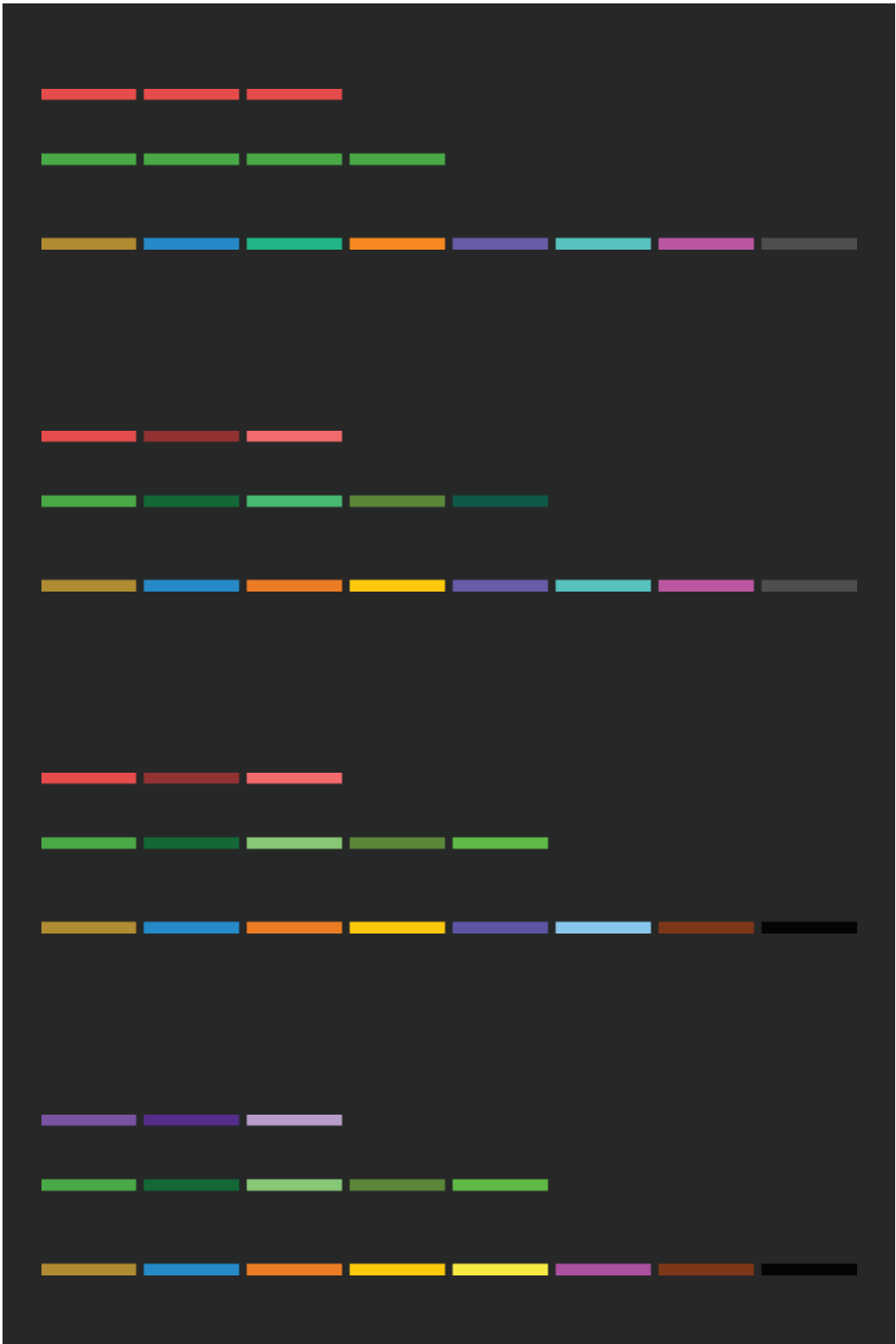
Quick Google search about the colours for each religion:

- Christian - blue, red, or purple
- Islam - green
- Bahai - ?
- Buddhism - light blue
- Chieftancy and Fetish Priests
- Hinduism - orange
- Sikh - royal blue, orange, or yellow
- Traditional
- Apostasy
- Varied/Other

I knew that to be able to cover all the religions in my data set (which I had already reduced by combining several categories), I would need to use a lot of colours.

Based on the colours traditionally used to represent each religion, I developed a scheme that would show well on a dark background and at small sizes. With so many different colours, it was hard to get them to harmonize yet contrast each other at the same time.

I was also aware that if I used orange, I would need to make it sufficiently different from the orange used on the circles.



FINAL DATA SET

https://drive.google.com/file/d/1aeiYAYL7MUV9TPua
dZqJi2Eg0l7AKeqc/view?usp=sharing

Top 26 countries + the rest combined into regions:

- Americas
- Europe
- Rest of Northern Africa
- Rest of Southern Africa
- Rest of Middle East & West Asia
- Rest of East Asia & South Asia

Each country includes:

- Country Number (most total claims to least) – determines stacking order on webpage
- Country Name
- Inner Order – stacking order of elements within the country
- Position – as percentage on a fixed-size map canvas
- Accepted Claims
- Total Claims
- Acceptance Rate
- Government Restrictions Index (Pew)
- Social Hostilities Index (Pew)
- Claim religions ranked in order of greatest to least

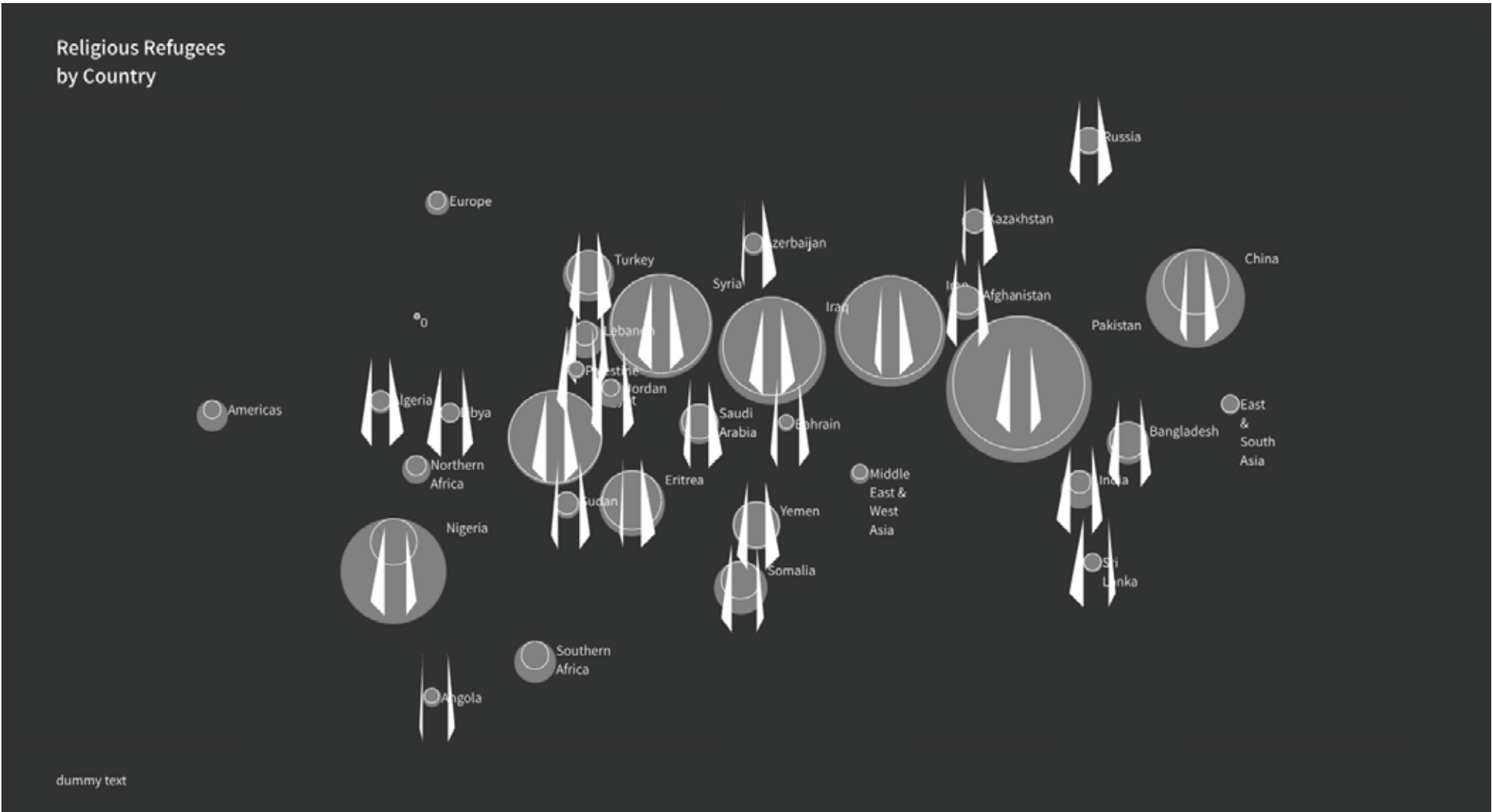
number	country	region	description	innerOrder	positionX	positionY	acceptedClaims	totalClaims	acceptanceRate	governmentRestrictions	socialHostil
0	Pakistan				66.2	37.7	1785	2146	83.2%	High	Very High
1	Iran				57.2	32.53	1049	1226	85.6%	Very High	Moderate
2	Iraq				47.8	35.29	973	1152	84.5%	Very High	Very High
3	Nigeria				15.2	66.9	218	1112	19.6%	High	Very High
4	Syria				39.5	31.3	979	1067	91.8%	Very High	Very High
5	China				82.5	29.1	432	960	45.0%	Very High	Moderate
6	Egypt				25.7	47.4	856	894	95.7%	Very High	Very High
7	Eritrea				36.1	60.7	351	429	81.8%	Very High	Low
8	Somalia				42.4	71.4	148	285	51.9%	Moderate	High
9	Turkey				36.2	25.2	199	265	75.1%	Very High	High
10	Yemen				45.9	64.2	213	227	93.8%	Very High	High
11	Bangladesh				81.3	51.4	138	183	75.4%	High	High
12	Saudi Arabia				43.1	55.1	123	159	77.4%	Very High	Moderate
13	India			TRUE	75.5	57.7	52	148	35.1%	High	Very High
14	Lebanon			TRUE	34.5	34.9	63	139	45.3%	Moderate	High
15	Afghanistan			TRUE	65.9	31.3	88	117	75.2%	High	High
16	Jordan			TRUE	39.9	47.9	32	80	40.0%	High	High
17	Russia			TRUE	76.8	13.3	67	76	88.2%	Very High	High
18	Sudan			TRUE	29.5	63.5	53	69	76.8%	High	Moderate
19	Kazakhstan			TRUE	69.5	21.9	56	63	88.9%	Very High	Low
20	Algeria			TRUE	13.2	48.4	41	53	77.4%	Very High	High
21	Azerbaijan			TRUE	49.7	26	37	50	74.0%	Very High	Low
22	Sri Lanka			TRUE	78.8	70	31	39	79.5%	Moderate	Very High
23	Libya			TRUE	20.3	50	38	39	97.4%	High	Very High
24	Angola			TRUE	23.8	85.9	23	36	63.9%	Moderate	Low
25	Palestine			TRUE	33	44.6	25	32	78.1%	Moderate	High
26	Bahrain			TRUE	53	53.5	21	28	75.0%	High	Moderate
27	Americas			TRUE	1.5	48.6	34	97	35.1%		
28	Europe			TRUE	24	21.6	30	59	50.8%		
29	Northern Africa			TRUE	11.2	59	41	82	50.0%		

I discovered six main clusters of countries based on religious makeup and derived my region categorizations according – see PBS map:

https://www.pbslearningmedia.org/resource/sj14-soc-religmap/world-religions-map/

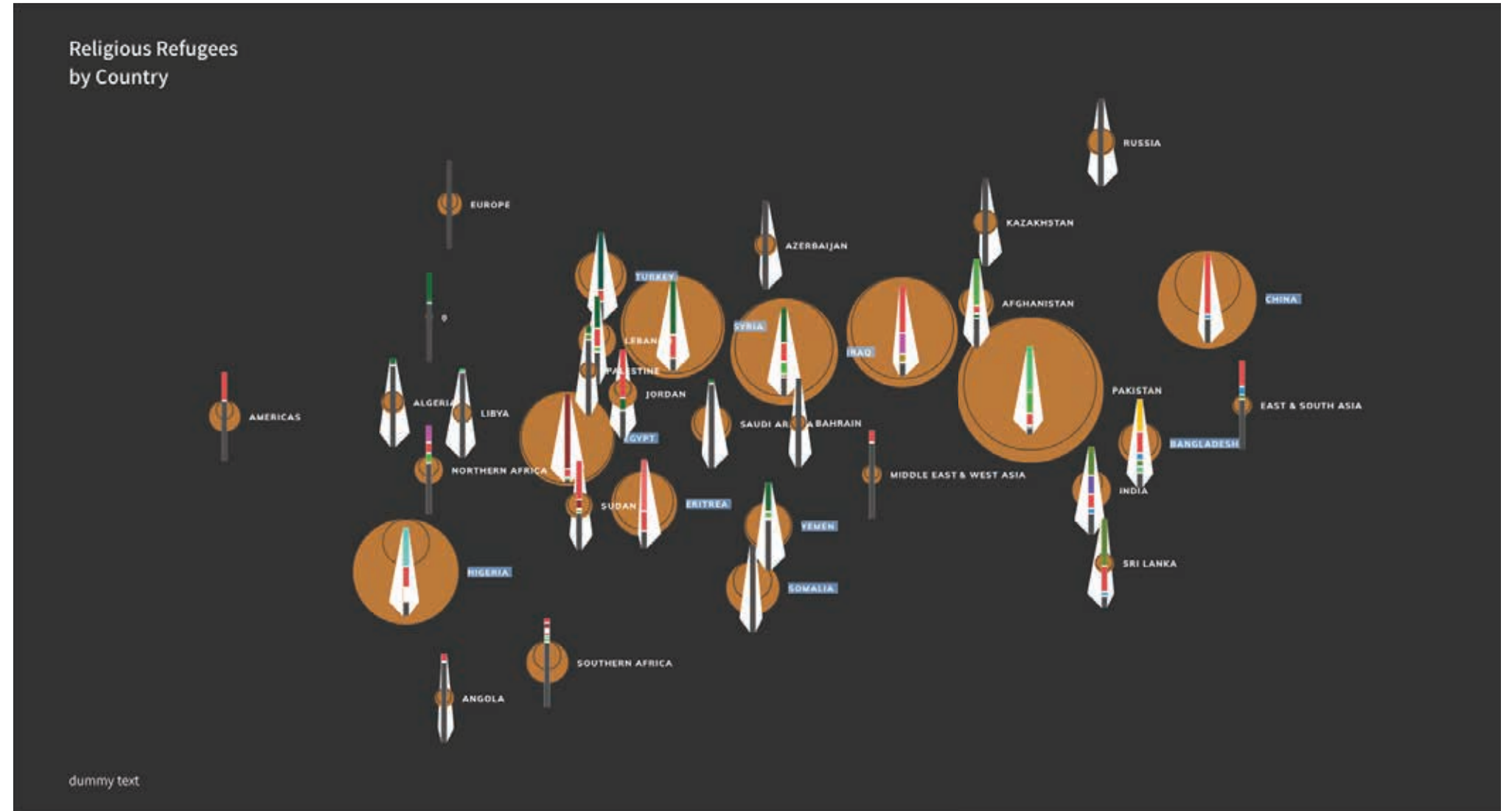
WEBPAGE PROCESS – V2

- automated insertion of circular and triangular HTML elements using JavaScript and the my final spreadsheet converted into JavaScript object format.



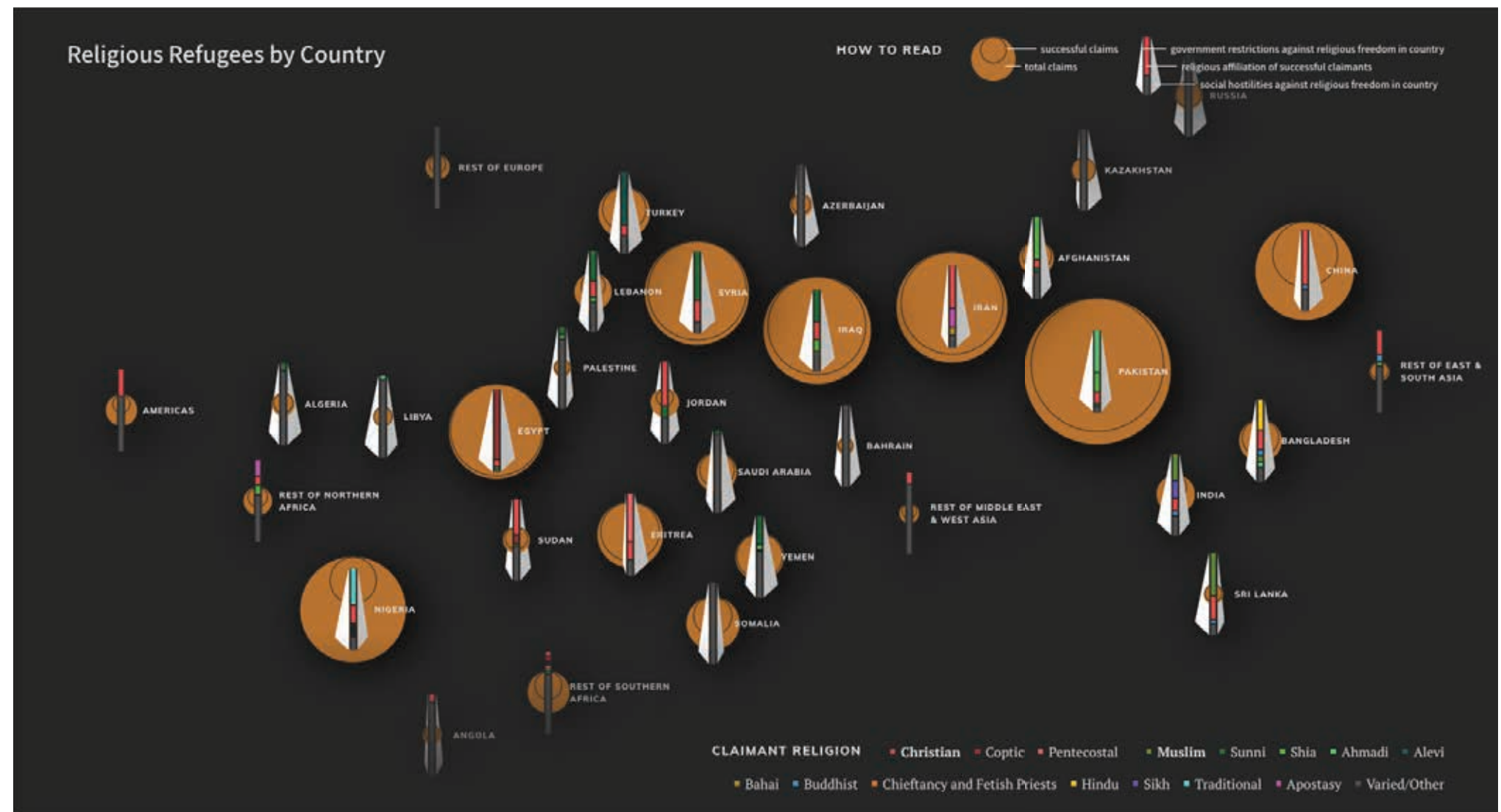
WEBPAGE PROCESS – V3

- automated the claim religions breakdown in the middle of each country
- added original coloru scheme
- adjusted type from Assistant to Mulish all-caps for legibility at small sizes



WEBPAGE PROCESS – V4

- added legends
- increased spacing of the overall map
- added drop shadows for a sense of space in the design.
- added gradient background for legend so that it wouldn't look like it is constricting the space of the main visualization, but still allow for some differentiation between spacial zones.
- I was wary of using a solid or sem-transparent background for the legend, because it would look overly heavy on the design and make the visualization area seem really small

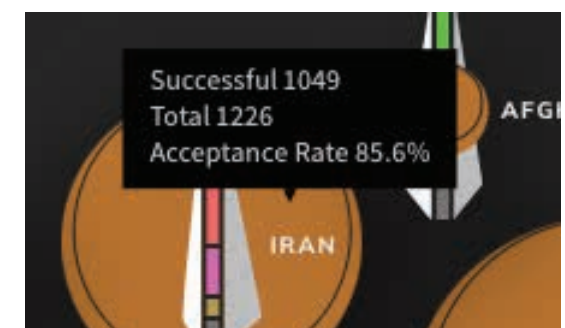
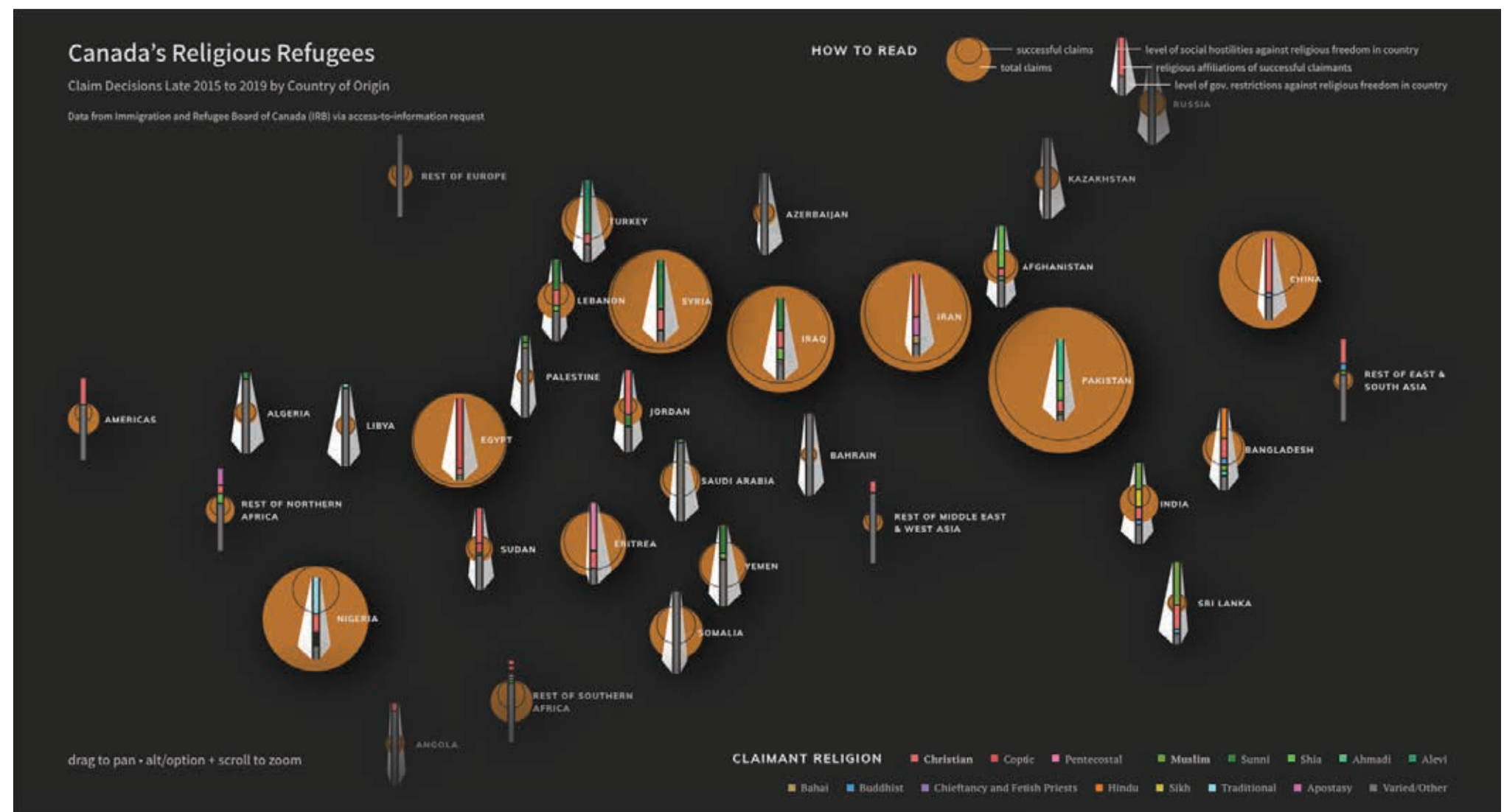


WEBPAGE PROCESS – V5

- added pan, zoom features
- added hover pop-ups for accepted claims, total claims, and acceptance rate.
- adjusted religion colour values to be brighter and more vibrant, contrasting its surroundings better

Critique feedback

- orange circle colour needs adjustment – either make it brighter orange or more pastel
- use typefaces (especially serif) more throughout the design for consistency
- top-right legend got mistaken for a part of the main visualization, didn't notice
- visibility of small proportions of religions is poor – make the dark lines thinner or allow zooming



FINAL

- darkened the gradient on the legends to further differentiate from the main visualization area – may need to be differentiated further
- changed the orange slightly – may need additional work because I didn't change it that much
- used PT Serif in top-left as well as bottom right for consistency
- added hover interactions for the white/grey triangles as well as the religions breakdowns

