

Research Article

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Cartographic Vexillology of Subnational Flags in North America

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Abstract

Maps are present in flags as part of their design and are more common in subnational flags. This study analyzed 4,804 subnational flags in North America – the continent with the most flags with maps – to identify if maps are incorporated, the area the maps represented and the presence of the theme of location. The theme of location is one of the Five Themes of geography established in 1984 to aid geography education. It provides a conceptual base to teach geography and geographic concepts. Of the total number of subnational flags studied, 9% (429) have a map on them. Most of the flags were observed in the United States due to the large number of political subdivisions and subnational flags. Of this, 24% (105 of 429) incorporate the theme of location. Most of the flags with this theme are from the United States and from second level political subdivisions. With this information, educators are encouraged to engage students in critical thinking activities that promote flag, map and location knowledge. Activities can focus on the map itself or the combination of flags and maps.

Keywords

Cartographic Vexillology, Teaching with Flags, North America, Theme of Location, Education Standards

Geography education has an important role in developing spatial awareness in individuals (Bearman et al., 2016). For children, spatial awareness and geographic knowledge are built up using maps (Wiegand, 2006). This is largely because the retention of humans derives primarily from symbols and patterns, which is the primary way children start learning (Taylor & Plewe, 2007). This is the reason why children demonstrate advanced skills in making, interpreting and using location-based maps (Trifonoff, 1995; Bednarz et al., 2003). Maps are a representation that make us think about our perception of Earth (Demiralp, 2007) and a point of research when it comes to

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spatial cognition and awareness (Wiegand, 2006). Within geography, maps have been a critical tool in pedagogy (Blatt, 2011; Teramoto, 2015), with some researchers suggesting the discipline without maps is insufficient (Hennerdal, 2015). These are needed for spatial data handling, management, visualization, and interpretation of physical and social phenomena, which is the core of geography as a science (Basaraner, 2016). The etymology of the word geography suggests it is responsible for ‘writing’ (*graphia*) ‘Earth’ (*Gaia*) and one of the methods it uses to provide such information is through maps.

Prior to conducting analysis of phenomena in places it is important to understand where something is. Position or location is a concept used in geographic analysis (Gersmehl, 2014). It provides a description of the connections in each place (Ediger, 2005; Dunn, 2011). Absolute and relative location are essential in understanding phenomena and pointing its precision (Natoli, 1994; Dunn, 2011). It is one of the Five Themes of geography adopted in 1984 by the Association of American Geographers (AAG) – location, place, human-environment interactions, movement, and region – to provide a connecting technique in the discipline (Gersmehl, 2014). It is a main theme in geography and an essential starting point for geography education and research (Paul, 2007; Donaldson & Kuhlke, 2009). Some researchers suggest that without location the other four themes cannot exist (Carney, 2001). Together with the other themes, location provides educators with a strong basis to teach geography and/or organize lessons with geographic content (Natoli, 1994; Gersmehl, 2014).

To teach the theme of location, maps play a key component (St. Peter & Lanegran, 1993). Maps are part of many geography and social studies standards. In the United States (U.S.), the National Geography Standards address maps in the first standard: How to use maps and other geographic representations, geospatial technologies, and spatial thinking to understand and communicate information (National Geographic Society, n.d.). Although there is no federal curriculum, these standards have influenced the standards of certain states in the country (Bednarz et al., 2014). Puerto Rico does not have geography standards; however, maps are part of the social studies standards and must be incorporated at every grade in primary and secondary school (Department of Education of Puerto Rico, 2014). The Center for Educational Studies, CEE (initials in Spanish), an independent organization in the country, has their standards available online and maps are part of both the natural sciences (only in secondary school) and history and geography standards (both in primary and secondary) (CEE, 2010).

Maps are part of our everyday lives and are present even in flags. At the national level, maps are rare in flags (Whyte, 2007; Kaye, 2009). In the Central Intelligence Agency’s *World Factbook* (2013), only three countries/territories incorporate maps in their design: Cyprus, Kosovo and Christmas Island. Kosovo is a disputed territory and is still pursuing recognition from international organizations (Beha, 2015) and Christmas Island is an Australian territory (CIA, 2013). At the subnational level, flags exhibit more maps as part of their design (Whyte, 2007; Kaye, 2009). For this study, subnational is defined as a political subdivision such as states, province, county, township, borough, department, village, town, parish, and cities. Finding information about such flag or the flag itself is limited due to the amount of political divisions of each country; therefore, more examples

may exist than the ones presented in this study and symbolism may be adjudicated differently by other individuals. The importance is to provide meaning to the use of such local symbols, such as a map (Whyte 2007). Subnational flags are rarely mentioned in vexillology textbooks, which cover mainly national flags. These tend to be more descriptive and historical than analytical (see Znamierowski, 2010).

Flags have been around since the European Middle Ages (Eriksen, 2007; Znamierowski, 2010), representing a nation's ideology and values (Endrst, 1992; Znamierowski, 2010). Flags make it possible to distinguish places and locations from each other (Eriksen, 2007). For some individuals, these are a collector's item or trigger an emotion in them (Purcell, 2012). Sentiment of nationalism is often represented through the flags (Eriksen, 2007). In some cases, like for Australians (Fozdar et al., 2014) and Germans (Becker et al., 2012), not displaying the national flag is interpreted as a lack of nationalism or understatement (Orr, 2010). Recent studies have shown that displaying the flag creates higher patriotism or nationalism on those individuals using it than on the ones that do not (Fozdar et al., 2014). Displaying national symbolism can come with controversy to minorities or ethnic groups (Çirakman, 2011); however, it can also represent a sense of inclusion (Eriksen, 2007). As evident by Eriksen's (2007) research, minorities in the U.S. feel represented by the national flag, as it makes them feel as an equal part of the country. Flags allow all individuals of a place to have a sense of belonging, creating a reminder of where they come from (Puri, 2004). Flags are a symbol that unifies individuals of a nation, region or locality (Bratta, 2009).

In vexillology – the study of flags –, analytical approaches show symbolisms in flags, such a nation's identity and political views (Dane, 2008; Minahan, 2010). Clark (2014) noted that children can identify their community's symbols such as the flag and provide numerous meanings to it. Of the numerous symbolisms found in flags, some use location as part of their design. Location is incorporated as colors and symbols (Morales-Ramirez, 2015) and astronomic objects (Bordeleau, 2014). This is not the only symbolism present in flags, as they incorporate numerous symbols, colors and other representations unique to the location. Symbols range from numerous geographic elements to historic events of the place the flag represents (Kizilçaoğlu, 2014). Symbolisms and flags are also explored through other national artifacts such as postal stamps, national currency, merchandise, and advertising, among others. In some cases, some elements of the flags are used instead of the flag itself, like the Texas' lone star used for tourism advertising, instead of the entire flag. This study explores the maps in these flags and identifies if the theme of location is present in subnational flags of North America. North America in this study refers to the U.S., Canada, Central America, and the Caribbean (23 sovereign states and 23 non-sovereign territories or dependencies). Since scientific research in vexillology is still scarce, studying maps in flags to identify the theme of location provides a new analytical approach. Authors like Whyte (2007) and Kaye (2009) have conducted similar research; however, this study presents specific information about the map being used, if the theme of location is present and how can these flags be used as pedagogical tools. Flags are slowly being incorporated in pedagogy; however, geography has not been a focus in these recent studies.

Method

All countries in the North American continent was selected for this study. North America was selected because is the continent with the most flags with maps (Kaye, 2009). This included all countries and the territories such as Greenland, Navassa Island and Martinique. Only the subnational flags were considered in this study. Flags of entities, organizations, ethnic groups, sports, and national or historic flags, such as Coral Harbour, Nunavut and Lethbridge County, Alberta in Canada, are excluded. The country or territory's flag was not incorporated in the final analysis. The primary focus of this study on subnational flags only is to continue shedding light on the importance these are gaining today and provide a new use for them, since these are not seen or use as often as national flags. These are also becoming more visible and are the focus of current conversations, which can aid educators in also discussing current topics students can relate to. A total of 4,804 subnational flags were analyzed in the month of November 2016. It is critical to highlight the time of this study because there are several ongoing attempts, contests and/or petitions to change subnational flags in the U.S. or to create new ones for places that do not have one (e.g. Portland Flag Association, n.d. and Associated Press, 2016). All flag information was obtained from the *Flags of the World* website (<http://www.crwflags.com/fotw/flags/>), the largest site for vexillology information. This website is the most complete and all explanations about flags from external resources ends up added into this large database.

All subnational flags that had maps were considered and analyzed. The flags were divided into different categories based on the territory the map covered: (1) continent map; (2) country map; (3) county map; (4) department map; (5) district map; (6) island map; (7) area map; (8) peninsula map; (9) province map; (10) region map; (11) state map; (12) township map; (13) map representation; (14) world map; and (15) town map. (Note that these categories were based on the type of political division each country has: e.g. county for the U.S. and Canada; province in Canada and Panama). The type of map was kept as a category to avoid confusion of the different political divisions used throughout North American countries and dependencies. The last category, #15, was used for cities, towns, villages, borough, and all other political divisions after the second-level divisions. The category for map representation, #13, is for those flags with a representation of the area, and not the actual map (Figure 1). An additional category was added – 16 categories in total – for those flags that had a map on it that was not identifiable. To better understand the political division represented, an analysis was conducted based on the political level each map represented. Since there are different political divisions and levels in these countries, this allowed for a better understanding of the area represented. For example, in Puerto Rico, the first political division are the municipalities, and the second are the *barrios* (neighborhoods). In the U.S., the first political division are the states, the second level are counties (parishes and boroughs for Louisiana and Alaska, respectively), and the rest will be part of the third level. Some countries in North America only have one political division level like the Cayman Islands (seven districts).



Figure 1. Flag of the Parish of Claiborne in Louisiana, USA and the actual map. (Image obtained with permission from Flags of the World <http://www.crwflags.com/fotw/flags/us-la-cl.html>).

The last part of this study identified those flags that used the theme of location. The location of the place had to be showing its absolute or relative location. Flags with only the name of the location were not considered to express the theme of location, as it is known that subnational flags use the name of the location often. Having just the name does not support any indicator of the place's location on the map.

Findings

Many of the territories, dependencies and countries in the Caribbean did not have subnational flags, with some dependencies not having an official flag: (1) Martinique, Clipperton Island, St. Barthélemy, St. Martin, and Guadeloupe (all use the French flag officially); and (2) Navassa Island (uses the U.S. flag officially). Of the 16 countries that had subnational flags, only 10 had at least one flag with a map on its design. Of the 4,804 subnational flags analyzed, 9% (429) had a map on them. The ratio of subnational flags with maps is 11:1 in North America. This ratio is high given that the continent has many subnational flags (Kaye, 2009). Also, there are countries, like the U.S., that have many

political divisions allowing for more flags. Although only subnational flags were considered, none of the national flags of these places had a map as part of the design. The symbols present on national flags ranged from commonly used stars and stripes (Cuba, U.S., Costa Rica, Honduras, etc.) to national shields (Turks and Caicos) and even animals (U.S. Virgin Islands), but none of them used maps. This could be because of the irregularity of a country's shape, for example, Canada. It would be difficult to incorporate a map of Canada without missing the islands and lakes the country has.

Table 1

Summary Of Maps Found In Subnational Flags Of North American Countries. This Table Excludes Subnational Flag Counts Of Those That Did Not Have A Map On Their Design: Costa Rica (45), Mexico (41), Greenland (17), Trinidad & Tobago (7), Cuba (5), Bonaire (1), Jamaica (1), Saint Kitts And Nevis (1), And Saint Vincent And The Grenadines (1).

Country	Total number of subnational flags	Subnational flags with maps	Percentage (%) (of the total number of subnational flags)
U.S.	3,059	381	89%
Canada	1,058	16	3.7%
Guatemala	205	9	2.1%
El Salvador	126	8	1.9%
Nicaragua	69	7	1.6%
Panama	25	3	0.6%
Puerto Rico	92	2	0.5%
Dominican Republic	18	1	0.2%
Honduras	26	1	0.2%
Belize	7	1	0.2%
Total	4,685	429	

Of the 16 categories of maps, county maps were used the most with 52% of the total (224 flags), followed by state maps with 31% (132 flags). County flags were observed in the U.S. and Canada. It is important to note that this political division is used only in these countries and these are the two largest countries in North America. The shared political division allows the creation of more flags. The U.S. had the most with 96% of all the countries in the continent (215 flags). Being one of the biggest countries with numerous political divisions, this was expected, although a set number of flags with maps was not recorded before. The state maps used in the flags were only present in the U.S. although Mexico also uses state as their first political division level. Of the 16 categories of maps, the U.S. subnational flags had at least one flag in each category except in three: country, department and province maps (due to the U.S. not having political divisions such as

departments or provinces). This is due to large amount of political divisions the country has. After the county level (second political division level), the U.S. has many subdivisions that are shared with other countries in the continent, such as boroughs, towns, and cities. The categories with the least number of flags are district map (Taber Municipal District, Alberta, Canada), peninsula map (Cumberland Head, New York, U.S.), region map (Stevens County, Washington, U.S.), and world map (Loma Linda, California, U.S.). These categories only had one flag each. There were not many of these different places with flags, which explains the low number of flags. Five flags had a map representation not identified. Four of these are for subnational flags in Guatemala. Additional research did not show the exact location the map was presenting. This could mean that the boundaries of the place changed, or the representation alludes to something else not explained. The flags in the U.S. accounted for most of the observations and use of maps. Out of the ten countries that had maps, the U.S. flags represent 89% of the total.



Figure 2. Map categories with only one subnational flag: district map (Taber Municipal District, Alberta, Canada), peninsula map (Cumberland Head, New York, U.S.), region map (Stevens County, Washington, U.S.), and world map (Loma Linda, California, U.S.). (Images obtained with permission from Flags of the World from <http://www.crwflags.com/fotw/>)

Since the U.S. had the most flags in general and the most flags with maps, an individual analysis of all 50 states and the capital of the U.S. showed that nine states did not have subnational flags with maps on them: Alaska, Kansas, Montana, New Hampshire, Oregon, Rhode Island, South Dakota, Vermont, and the capital, Washington D.C. These states also represent some of the states with the least number of subnational flags identified. The five states with the most subnational flags are Massachusetts (315), Ohio

(209), California (186), Texas (162), and New York (155). The five states with the most maps on their flags are Ohio (54), Texas (34), North Carolina (20), New York (18), and Illinois and Pennsylvania (17 each) (table 2). These five states have approximately 37% of all the subnational flags with maps in the U.S. County maps and state maps, as discussed previously, are the two types of maps used the most in U.S. subnational flags. The five states with the most county flags are Ohio (37), North Carolina (19), Pennsylvania and Texas (14 each), and Louisiana (10). For Louisiana, their parishes were counted as county for the categories of this study, since it is part of the state's second political division level. State maps are present the most in flags from Texas (19), Ohio (16), Florida (9), Illinois (8), and Michigan, Indiana and Missouri (7 each). Since most of these places can be unknown to individuals, using the state map provides a better understanding of where the place is.

Table 2

Summary of the Total Number of Subnational Flags per State in the U.S. And Count of The Ones With Maps.

State	Total number of flags	Number of flags with maps	Percentage (%) (of the total number of flags with maps)
Alabama	40	7	1.8%
Alaska	12	0	-
Arizona	38	1	0.03%
Arkansas	26	8	2.1%
California	186	8	2.1%
Colorado	34	1	0.03%
Connecticut	36	1	0.03%
Delaware	14	1	0.03%
Florida	114	12	3.1%
Georgia	66	10	2.6%
Hawai'i	2	1	0.03%
Idaho	20	1	0.03%
Illinois	116	17	4.5%
Indiana	62	10	2.6%
Iowa	43	3	0.08%
Kansas	30	0	-
Kentucky	42	12	3.1%
Louisiana	58	15	4%
Maine	27	2	0.05%
Maryland	66	4	1%

Massachusetts	315	12	3.1%
Michigan	134	14	3.7%
Minnesota	63	6	1.6%
Mississippi	39	4	1%
Missouri	75	9	2.4%
Montana	7	0	-
Nebraska	30	6	1.6%
Nevada	28	6	1.6%
New Hampshire	13	0	-
New Jersey	77	8	2.1%
New Mexico	18	2	0.05%
New York	155	18	4.7%
North Carolina	65	20	5.2%
North Dakota	5	1	0.03%
Ohio	209	54	14%
Oklahoma	21	4	1%
Oregon	14	0	-
Pennsylvania	87	17	4.5%
Rhode Island	18	0	-
South Carolina	30	1	0.03%
South Dakota	8	0	-
Tennessee	60	9	2.4%
Texas	162	34	9%
Utah	29	2	0.05%
Vermont	5	0	-
Virginia	102	8	2.1%
Washington	109	12	3.1%
West Virginia	21	10	2.6%
Wisconsin	42	2	0.05%
Wyoming	35	8	2.1%
Washington, D.C. (capital)	1	0	-
Totals	3009	381	

Administrative political levels varied throughout the countries and the flags. Most of the places that had flags with maps were secondary political level, with 62% of the total flags. This is due to the number of secondary political divisions North America has. Countries like U.S. and Canada are divided into various political levels, which sometimes leads to four levels of administrative subdivision. The U.S. alone had 90% of flags from

second level political divisions. This number links to the number of counties in the country. With over 3,000 counties, which are considered a second level political subdivision, the possibility of subnational flags increases. Although this was the highest administrative level represented, the corresponding maps found in the flags were not necessarily for the same level. The secondary level was the highest representation of maps in the flags; however, some flags used other political levels. Some examples of secondary level subdivisions using a different political level map include: La Caleta, La Romana, Dominican Republic (the shield on the flag has a map of the country), La Esperanza, Intibuca, Honduras (map of the department), Nueva Concepcion, Chalatenango, El Salvador (map of the department), and San Luis Talpa, La Paz, El Salvador (map of the department). Some of these places may choose to represent a larger or well-known area to identify its location within that region or country, like in the flag of La Caleta, which is a small municipality inside a more recognizable location as the city of La Romana. Others may choose to highlight the importance of the place within a location: La Esperanza is the capital of Intibuca Department and San Luis Talpa is close to the capital city of San Salvador in El Salvador. The specific reason for this is currently not explained with the flag's symbolism.



Figure 3. Distribution of flags with maps by political level represented. The green line is the actual map used in the flags and the blue line represents the political level of the place itself.

The theme of location is in 24% of the total subnational flags with maps in North America (105 flags of 429). These are identified in four countries subnational flags: U.S. (99) – Texas and Ohio had the most flags –, Canada (4), Guatemala (1), and Belize (1). Most of the flags had a symbol (commonly a star) pointing at the exact location of the place in the map. Others showed the exact area the place has within the map. The flag of Redford Township, Michigan, U.S. enhances the township by taking it out of the state map and centralizing it. As mentioned previously, adding the map on the flag with the

exact location of the place provides an understanding of where to find that specific place. Since there are so many political divisions and some places share the same name, it helps distinguish between them. For example, the name Washington is used in the U.S. by 88 different places (towns, cities, etc.) (U.S. Census Bureau, 2017). Therefore, adding a map with the location of the place helps distinguish places with similar names. It also provides information about symbols or idiosyncrasies that may be important for the individuals living in that place. The theme of location in geography was created in the U.S., therefore, it is not surprising to find some flags incorporating it.

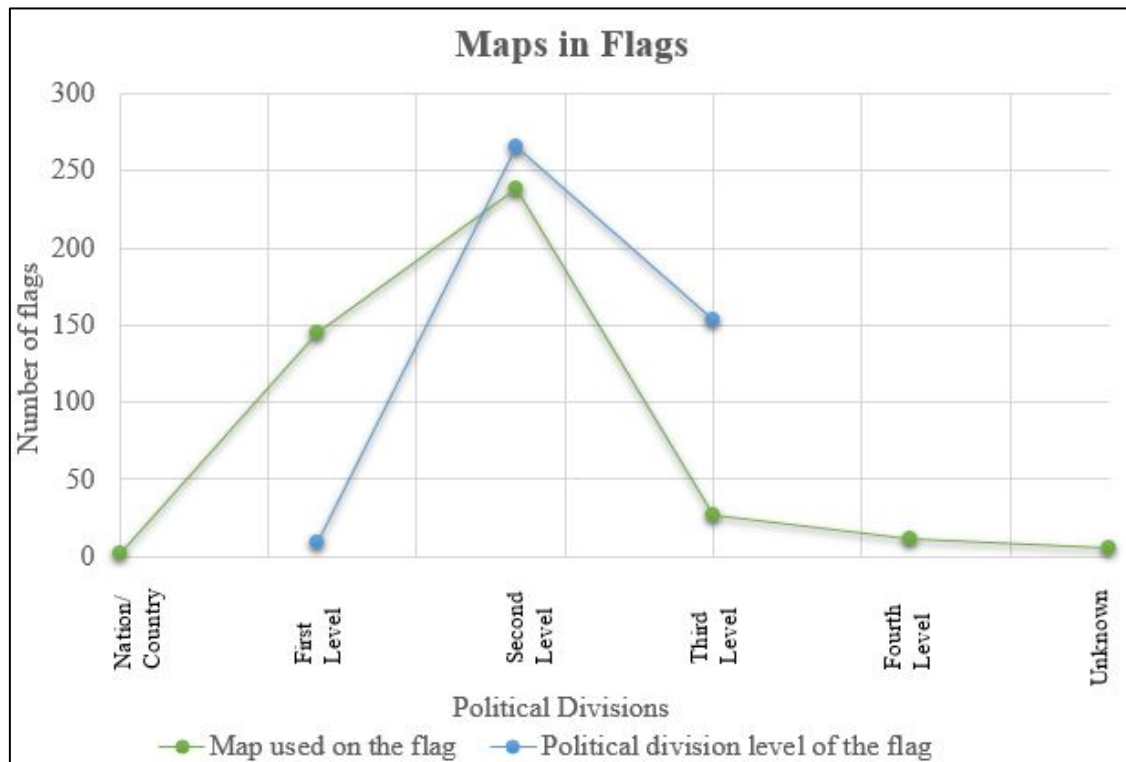


Figure 4. Examples of the theme of location in subnational flags. (Images obtained with permission from Flags of the World from <http://www.crwflags.com/fotw/>)

Almost all the subnational flags had the name of the place written on the flag itself while including the map and the absolute location. This is a common trend in subnational flags worldwide, and one observed many times in subnational flags of the U.S. This is heavily criticized by vexillologists (Kaye, 2009) and is one of the reasons why some places are trying to change their subnational flag (Portland Flag Association, n.d.). This highlights the importance individuals see in their local subnational flags. Providing the map and location without the words can be sufficient to know the place the flags belongs, although a study on people's perception of the use of maps in flags has yet to conduct. There were also a few maps or shapes that looked like maps that were not identified. One in particular has a star that seems to be pointing at the location of the place within a map: the flag of San Antonio Suchitepequez, Guatemala; however, the map was not the department or the country's map. In-situ analysis is needed to understand the symbolism

of this flag and how locals interpret it, since additional research done online did not provide any insight. A change in boundary or disputes about it could explain this map used.

Table 3

Summary of the Presence of the Theme of Location in Subnational Flags

Country	Number of flags with the theme of location	Percentage (%) (of the total number of flags with the theme of location)
U.S.	99	96%
Canada	4	3.8%
Guatemala	1	0.1%
El Salvador	0	-
Nicaragua	0	-
Panama	0	-
Puerto Rico	0	-
Dominican Republic	0	-
Honduras	0	-
Belize	1	0.1%
Total	105	

Discussion

As with many subnational flags, the symbolism was rarely available. Most of it was describing the elements or parts of the flag. The Flags of the World website is the most up to date source for this information and external links are always used to link the information back to the original. In these cases, additional research was done using those links and official websites for the appropriate political division without success. Historically, this has been the case for such flags due to the rarity, availability and display/exposure (Whyte, 2007). Although these flags may not be known by the public, countries in the North American continent have many flags at the subnational level. It is not known why certain countries have more than others; however, a pattern is observed between the number of flags and the numbers of political division existing in the country. In the U.S. there are many political divisions after the state (first level), which allows for more flags, compared to a country with less divisions like St. Vincent and the Grenadines, which has only five parishes (first and only level of political division). Such correlation has yet to be studied in vexillology or another discipline.

Maps are present on subnational flags more than in national flags in the continent. A difference in the number of flags explain this finding, although, it should be noted that there are other reasons why such symbols are not used at the national level. Whyte (2007), provided insight on the lack of maps in flags: (1) changes in political boundaries, (2) complexity of the shapes, (3) flow production, and (4) the difficulty of incorporating maps

in flags. Most of these statements are also supported by the principles of flag design of many vexillologists and vexillological associations (Kaye, 2009; Bartram et al., 2014; Burton 2015). National flags are reproduced and used often; hence, it would be difficult to capture the exact outline of a country's boundary every time in all flags. It is important to understand that flags should be identifiable when reproduced and used in all sizes (Kaye, 2009). Countries such as Canada, Greenland and the Bahamas have too many irregularities in the country's boundaries which can be very problematic when reproducing the flag numerous times. This is still not the specific reason for the lack of maps in flags, as other countries have more complex symbols: the Mexican flag includes an emblem depicting an eagle eating a serpent on a cactus. Throughout the evolution of flags (from *vexilloids* to the first proto-flag), other symbols have remained more common, and maps have not been one of them (Znamierowski, 2010). This can explain why countries in general do not chose to include a map on their national flags.

The different categories of the maps in subnational flags link directly with the political divisions of each country or territory. In the U.S. the first level of division is state, which is only shared with Mexico. Other countries use provinces, municipalities, parishes, and departments. It is important to list these differences to understand the findings. The importance of the categories was to categorize the maps according to specific political divisions for pedagogical purposes. County maps were found the most due to the number of counties in the U.S. As of 2017, the U.S. had a total of 3,142 county and county-equivalent subdivisions (U.S. Census Bureau, 2017). Canada also uses counties as a political level in some provinces, which can increase the possibility of subnational flags using this type of map. County flags are not displayed often and can be observed in governmental location such as the county's board office. This allows for more complex designs, since the volume of reproduction will be low. These places are often not known as well as major cities, capitals or first political level subdivisions. Therefore, by adding a map on the flag it provides outsiders with information of the exact location of the place. It can also be dependent on the people of the area. Flags are a form of pride for individuals (Purcell, 2012) which create a stronger sense of belonging and a new instrument of cultural identity (Puri, 2004; Fozdar et al., 2014). Given that these two countries have so many counties, it is important for each of them to have unique local and cultural elements, and flags are one of the more recognizable.

Flags as Pedagogical Tools

Educators are always searching for new and inventive topics to add in their classes (Zeitler, 2013), which provides an opportunity to incorporate these flags with maps. Flags have been used successfully in other disciplines such as mathematics (Schad et al., 2008; Howe et al., 2010) and medicine (Littmann, 2016). In mathematics, the approach of using a flag is more technical, as students used the flags for their shapes (Schad et al., 2008) or as tools for a scavenger hunt type of activity (Howe et al., 2010). In both cases the students learn the flags used in the activity while learning a specific concept in that discipline. Littmann (2016), however, proposes a different approach to using the flag. He compares the location of the most important ST in a 12-lead electrocardiogram (ECG) to the South African flag. Since these are areas in the ECG that can be missed, he suggests using a

common tool like the national flag to teach the important areas to look at (Littmann, 2016). In the context of geography, incorporating flags with maps can contribute to national and subnational exposure of cultural symbols in geography and other related disciplines. The students can learn about the flag while also learning the various maps at a regional and/or national scale. Maps are instructional and didactical images used in and outside of the discipline (Cartwright & Heath, 2002; Balm, 2012; Petrisor, 2013), which provide geographers the opportunity to display spatial relationships, show locations, map distributions spatially, and conduct spatial connections (Cartwright & Heath, 2002; Torguson, 2012). Today, maps are part of our everyday lives (Offen, 2015) and a main communication tool for geographers (Torguson, 2012).

With geography illiteracy being a current topic of interest, especially in the U.S. (Stanhope et al., 1988; Trivedi, 2002; Widener, 2015), flags can provide an innovative approach to teaching concepts like location, where students continue to underperform in geography knowledge tests (McAuliffe, 2013; Little, 2016). An introductory part can have the students look at the flags to try to identify the symbols they observed. (The instructor must provide the name of the country for each flag, since all of them are subnational flags). It is important to provide the students with content and explanation of the flags they will be using since subnational flags are not well known. The activities or instruction can have the students identify the city, county or other subnational division with an actual map of the area or only using the map in the flag, if known. Combining flags of nearby locations (for example, nearby states in the U.S.), can also promote location knowledge. Students should be encouraged to explore the elements in the flag and provide their interpretation of the symbolisms found. These steps promote skills needed in geography such as critical thinking, inferring, analyzing, and generalizing (Canadian Geography Education, 2001; Department of Education of Puerto Rico, 2014). Focusing on the map used in each flag, students can use focus on these as representations of local and distant places, as well as name the places and neighboring areas. Activities like this are supported by numerous educational standards in North America and provide an interdisciplinary approach between geography and vexillology (Canadian Geography Education, 2001; Department of Education of Puerto Rico, 2014; National Geography Society, n.d.).

Of all the flags analyzed, the U.S. subnational ones represented most flags with the theme of location. Since information is not available, a possible explanation to this trend can be attributed to the fact that the Five Themes of geography were created in the U.S. (Dunn, 2011, Gersmehl, 2014), although some flags were adopted prior to the creation of themes like the flag of Panola County, Texas – adopted in 1976 –. The educational standards can support this observation. Texas is the state with the most flags with this theme and in the Texas Essential Knowledge and Skills (TEKS) standards, once named one of the strongest standards in the U.S. (Monroe & Smith, 1998), the theme of location is highlighted multiple times. In the state's Social Studies Standards, it is part of Standard V, section 5.2k, in which students are expected to identify locations in Texas, the U.S. and worldwide (TEA, n.d.). Chapter 13 of the TEKS for high school courses, features location in seven different sections (TEA, n.d.).

Ohio, the second state with the most flags with the theme of location, emphasizes the theme throughout the social studies standards. Students are expected to know relative location as early as in kindergarten grade (age 5 years old). In first grade (age 6) they are expected to use maps to locate and identify places (Ohio Department of Education, n.d.). The flags of Wood County and Trumbull County, Ohio were adopted in 2002 as part of contests in each county. For these flags, it is clearly stated that the intention of the map is to highlight the location of the counties and the local culture (The Ohio Statehouse, n.d.). The four Canadian subnational flags with the theme of location did not have a year of adoption, and although the Five Themes may not be explicitly part of their curriculum, it is part of their national geography standards. Like the standards of Ohio, the Canadian standards introduce location in all academic grades, with strong emphasize in kindergarten and first grade (Canadian Geography Education, 2001). In Guatemala's education standards, the theme of location is part of the social studies standards where geography is taught. Location is an integral part of the curriculum in third, fourth, fifth, and sixth grades (ages 8 through 11 years old) (Ministry of Education of Guatemala, 2007).

Conclusions

In North American vexillology there are numerous subnational flags, especially in the U.S. and Canada. Symbolism is rarely provided for these flags; however, it is noted that some of them highlight the area's location in respect to a higher political division like a township within a county or a city's location in the state. The theme of location was only identified in flags of four countries, with the U.S. leading the list. Since this theme has been emphasized throughout the years in this country and is an integral part of geography overall, such flags provide an opportunity for educators to use as instructional tools. In general, the flags can also be used to reinforce local and regional cultural values and map and location knowledge. This provides an eclectic pedagogical output in geography and/or other social sciences classes as well as with the public.

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