ZGD Zeitschrift für Geographiedidaktik
Journal of Geography Education

Vol. 53 (2025), 21-32
ISSN 2698-6752
DOI: 10.60511/53468

A Classroom Approach to Explore Spatial Narratives in Film: The Case of James Bond

Ein Unterrichtsansatz zur Erforschung räumlicher Erzählungen im Film: Der Fall James Bond

Un enfoque de aula para explorar las narrativas espaciales en el cine: el caso de James Bond

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Abstract This paper examines the ways in which the setting and spatial narratives of films can be mapped and measured by students. In a course dedicated to James Bond, students watched all the films in the series, analyzed how geographically widespread they are, and how patterns unfold and change. James Bond's geography tends to be more dispersed over time, as he travels to more places later in the franchise, which mirrors evolving global geopolitics. The research proved to be effective in conveying spatial concepts and making basic statistical analysis relatable to students without any background in quantitative methods.

Keywords James Bond, film geography, spatial analysis, geopolitics, film in education

Zusammenfassung Diese Arbeit untersucht, wie Studentinnen und Studenten Schauplätze und räumliche Erzählweisen von Filmen erfassen und messen können. In einem James-Bond-Kurs sahen sich Studentinnen und Studenten alle Filme der Serie an, analysierten ihre geographische Verbreitung und wie sich Muster entwickeln und verändern. James Bonds Geographie tendiert dazu, sich im Laufe der Zeit räumlich zu verbreiten, da er im weiteren Verlauf der Serie mehr Orte bereist, was die sich entwickelnde globale Geopolitik widerspiegelt. Die Forschung erwies sich als effektiv, um räumliche Konzepte zu vermitteln und grundlegende statistische Analysen für Studentinnen und Studenten ohne Vorkenntnisse in quantitativen Methoden zugänglich zu machen.

Schlüsselwörter James Bond, Filmgeographie, Raumanalyse, Geopolitik, Film in der Bildung

Resumen Este trabajo examina cómo los estudiantes pueden cartografiar y medir la ambientación y las narrativas espaciales de películas. En un curso dedicado a James Bond, los estudiantes vieron todas las películas de la saga, analizaron su extensión geográfica y cómo se desarrollan y cambian los patrones. La Geografía de James Bond tiende a ser más dispersa con el tiempo, ya que viaja a más lugares en etapas posteriores de la franquicia, lo que refleja la evolución de la geopolítica global. La investigación demostró ser eficaz para transmitir conceptos espaciales y hacer que el análisis estadístico básico fuera accesible para estudiantes sin experiencia previa en métodos cuantitativos.

Palabras clave James Bond, Geografía cinematográfica, análisis espacial, geopolítica, cine en la educación

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1. Introduction

The fictional secret agent James Bond was created by the English author Ian Fleming in 1953. His books were translated to the movie screen in 1962, and James Bond films have been produced on a regular basis ever since. One enduring feature in these films is that Bond travels around the world during missions, which involves the neutralization of security threats to the United Kingdom and, more broadly, the Western-dominated world order. The locales featured in the films play a role in the spatial narrative that unfolds, they may have some geopolitical importance, appeal to the audience's desire for exotic adventures, reflect Bond's cosmopolitan worldliness, or may have been selected for practical reasons, such as the cost of filming.

The James Bond series is, therefore, a suitable case study to examine the ways in which the setting and spatial narratives of films can be mapped and measured, especially as James Bond's travels, and the places depicted in the Bond films, have not been fully explored in the literature. In particular, this task is suitable for student engagement. The objective of this paper is to develop methods of how to measure and analyze where James Bond films take place. These methods may also be used in the classroom for films other than James Bond. I will also discuss how this undertaking utilizes spatial analysis in a way that is suitable to students with little or no pre-existing knowledge of statistical methods. The paper originated with an upper-level undergraduate seminar course with 11 students, and the method and analysis herein were developed and refined in that course. Before discussing methods, data, and conclusions, a brief review of the academic literature on James Bond is in order. Any understanding of (Bond) films in education should proceed in a proper cultural, political, and geographical context.

2. Literature Review

Students' geographical imaginations are shaped by popular media. Films, in particular, are effective in telling stories, through images and sound, that allows the audience to encounter other places, landscapes, and cultures (Lukinbeal, 2014; Morgan, 2001). In a seminal study, Aitken (1994) states that "[…] cinema can make an important contribution to the geography curriculum in higher education" (p. 291). Of particular importance in geographic education is the analysis of narratives, which is when data consist of narratives and are then subsequently organized into analytical categories (Savin-Baden & van Niekerk, 2007). Plien (2015, 2017) has explored how viewers experience such narratives. Especially among young people, cinematographic narratives and depictions can significantly contribute to their cognitive maps and understanding of the world, which is why it may be effective to integrate film into coursework that emphasize spatial thinking. For example, this has been done to explore themes in urban patterns (Sigler & Albandoz, 2014) and geopolitics (Madsen, 2014). The use of films in the classroom should not only illustrate geographic content but also promote active spatial learning (di Palma, 2009). Caquard and Fiset (2014) suggest that the mapping of narratives aids in people's understanding of the geographic structures of stories and the production of places; therefore, it is important to map "[…] the many dimensions of narratives, including the places of the narration (geography), the connection between these places (geometry), as well as the temporal dimension inherent to storytelling" (p. 18). This study—with an emphasis on the role of place, spatial configurations of narratives, and narrative changes over time—applies these principles to film in education through the lens of James Bond to enhance active spatial learning.

James Bond has not received much attention from an educational point of view. One exception is Zegers and Zegers (2018) who review James Bond from a sex education perspective, and Scheele (2004) who uses James Bond as a metaphor from accreditation in higher education. However, scholars in the social sciences and the humanities have more broadly analyzed the Bond phenomenon. Academic research did not always consider popular culture worthy of critical analysis. A seminal publication that changed the trajectory of James Bond research was renowned novelist and literary critic Umberto Eco's essay *Narrative Structures in Fleming*. Eco (1979) lent credence to Ian Fleming's books as something more than mere entertainment, as well as to the James Bond phenomenon in general. Since then, the scholarship of James Bond has evolved.

Following Eco, literature and cultural studies have employed discursive analysis to explore the content and meaning of Bond films and books (Lindner, 2009). Beyond cultural analysis, one com-

mon theme of investigation is geopolitics and the real-world context in which James Bond is situated. Early Bond found himself in the spaces of late colonialism and the Cold War, which shaped his actions and attitudes. Over time, Bond narratives had to adapt to continuously evolving post-Cold War developments and cultural changes. Doing so was not always easy: Bond's boss M famously called him "[…] a sexist, misogynist dinosaur; a relic of the Cold War" (in the 1995 *GoldenEye*). Historian Jeremy Black offers book-length, long-arc perspectives of such changes in *The Politics of James Bond* (Black, 2000) and *The World of James Bond* (Black, 2021), while Chapman (2007) similarly traces the evolution of Bond from a film studies perspective.

The main geographic contributions to the literature have been made by Klaus Dodds and Lisa Funnell in a series of articles (Dodds, 2003, 2005, 2014; Dodds & Funnell, 2018) and the book *Geographies, Genders and Geopolitics of James Bond* (Funnell & Dodds, 2017). They enhanced the understanding of urban landscapes, natural resources, social and racialized spaces, and mobilities in James Bond. Questions of gender, race, and ethnicity in Bond films have also been addressed by Baron (2009), Cox (2014), and Neuendorf et al. (2010). From a pedagogical perspective, the depiction of such matters in a time span of over 60 years provides an opportunity for highly engaging discussions about changes in society, augmented by filmic illustrations using classroom audio-visual technologies.

While much has been written about James Bond, there is room to explore additional aspects of Bond, such as the films' spatial narratives and their pedagogical potential for active spatial learning and methodological explorations. The movements of James Bond have been mapped by Bond fans on the internet, but the classroom-adapted method presented here contributes to the popular geographies of James Bond, and the use of films in geographic education more broadly, by examining the films' geographic depictions in a systematic and rigorous way. The quantitative approach presented in this article constitutes a fresh addition to not only James Bond scholarship, as previous research engaged in various forms of qualitative analysis, but also to the use of film as a tool to teach spatial analysis.

3. Methods

The primary data used in this research are the 25 official James Bond films produced by Eon Productions (Thus, not including *unofficial* films, such as the 1967 *Casino Royale* and the 1983 *Never Say Never Again*). The process of extracting geographic information from the films was principally carried out by 11 students enrolled in a university course called *Special Topic: The World of James Bond*. At the onset of the course, few students professed to have any substantial preexisting knowledge about James Bond. This semester-long assignment was conducted parallel to other course themes and activities, including Ian Fleming and the Bond books, narrative structures in the Bond films, colonialism and the Cold War, and geopolitical and gendered depictions in the films. The use of *Geographies, Genders and Geopolitics of James Bond* (Funnell & Dodds, 2017) as a textbook allowed for a critical and contemporary understanding of James Bond.

The first task assigned to students was to identify the locations depicted in each film and—for reasons discussed below—how much time is spent in each location. As this analytical part involves watching the films and timing film sequences, it is a concrete activity that, as evident later in the paper, is important to student engagement. In this case, each student was assigned two films to review. For this paper, I subsequently reviewed the three additional films. Students had access to the films via a DVD box set that included all films except the most recent, *No Time to Die* (2021), which was acquired separately.

Based on the films, two geographic dispersal measures were developed, which in different ways explore the main research questions: how geographically widespread are the James Bond films, and how has that changed over time? The pedagogical objective of addressing these questions are multifold. The geographic structure of cinematographic narratives affects the audience spatial understanding. How are different places connected—politically, culturally, and economically—through these narratives? For example, they can illustrate a trend towards global hypermobility, which is also depicted through changing cinematographic techniques. Based on the assumption that contemporary filmmaking style is increasingly fast paced, it is possible that more (and more dispersed) places will be shown in the films over time, which allows for narratives that transition from one place to another in rapid succession. Moreover, early Bond films follow Ian Fleming's source material, which tends to have a relatively narrow geographical focus, while latter films do not. Another element is that the geographic pattern of the films follows the broad trends of global geopolitics as Bond films are influenced by real-world events. Examples include Cold War proxy conflicts, evolving political alliances among states, the role of post-Soviet spaces, and the growing

politico-economic importance of Asia. Visualizing and calculating the geographic structure of the films effectively depicts such geopolitical arrangements and can be a tool for further analysis.

The research questions were formulated by the instructor because the students did not have enough pre-existing knowledge about Bond films at the onset of the course. (Under other circumstances, students can be encouraged to participate in such formulations). The two statistical measures were designed specifically for the purpose of this course, because standard statistical models are not able to answer the research questions. Two university colleagues—one in cartography and one in mathematics—assisted in the development of the measures through informal discussions. One objective for the design of the measures was that students without a background in statistics should be able to perform the necessary calculations with relative ease, as well as to comprehend and interpret what the measures depict. To support that objective, the student calculations were divided into four different steps, each performed as assignments during different weeks. That process enabled the students to focus on individual elements of the calculations, one at a time, in a manner that allowed for an understanding of what the final results depict. At regular intervals during the course, the participants were able to collectively discuss the data they had collected and calculations they had performed to make sure that proper procedures were followed by all. In fact, at one point, a student identified a flaw in the quantitative reasoning, which ultimately improved the measure.

3.1 The Quintile Method

The first measure to explore spatial narratives is the quintile method. The data needed for this calculation are the identification of locations in all films, as performed by students, and the amount of time spent there. The method treats each place as a discrete location without considering distance between locations, nor the distance travelled by James Bond or other characters in the film. The reason for this approach is that film narratives tend to *collapse* space; that is, the audience is introduced to one setting which is then quickly replaced by another, and so on, as the film progresses (see Aitken, 1994 on narrative conventions in film). Actual distance then carries limited meaning for the audience, although viewers who pay close attention to geography can at least mentally map these places and movements. Students were asked to consider the following for the films they were assigned, as a way to systematically operationalize a concept (*location*) and to process filmic data:

- Identify the locations where the film takes place (not where it was filmed).
- Identify the locations as they are depicted on the screen, not just where James Bond himself travels.
- As a guiding principle, consider a country as one location. However, if the setting shifts within a country across longer distances, multiple locations should be identified (e.g., when James Bond travels from New York City to New Orleans in *Live and Let Die*, or from Rio de Janeiro to the Brazilian rainforest in *Moonraker*). If the narrative of a film returns to the same place on more than one occasion, it is considered just one location (e.g., a return to London and the MI6 headquarters is common in several films). What constitutes one location was discussed in the class, which allowed for consistency across all films. Students were, per instructions, encouraged to *overcount*—that is, include as many places as possible in an initial phase. That way, two locations close to each other could, if collectively agreed upon by the course participants, later be reduced to and treated as one location in the data set. This type of course discussion was imperative as the determination of what constitutes location is open to interpretation.
- Not all locations are identified in the film; however, there is contextual information as to where a scene takes place. Such information includes the language used by characters or as depicted on signage, climate and vegetation, or recognizable landmarks in the natural or the built environment. Existing Bond scholarship, online resources, and, occasionally, the Ian Fleming novels can provide needed additional geographic information. Much like determining location above, subsequent class discussions when students report their findings, allow for consistency in analyzing the data.
- In some instances, fictitious place names are used although they may represent real places (e.g., the Latin American country of Isthmus in *License to Kill* is an apparent reference to Panama) and for data purposes recorded as real locations, which is imperative for the calculation of the second measure. Some students exhibited enough sophisticated geographic knowledge to make such determinations, while others did not.
- Screen time for each place is recorded to the nearest minute. Segments of a film that are geographically irrelevant, such the title sequence and the credits at the end of the film, were not included. Nor were brief *in transit* moments (e.g., segues where characters travel, such as

on an airplane, without any visual connection to a location). This set of instructions means that the recorded length of films in our data is somewhat shorter than their official running time. Finally, instructor feedback allowed for corrections to be made to the time and location data.

The logic of measuring time at different locations is that if the film spends, hypothetically, one hour in the Bahamas, it carries more geographic and narrative significance than if the scene lasted for only a few minutes. Such significance can be related to the visual impact of the landscape on the viewer, or the importance of place on filmic events. Not all film sequences may carry a high degree of significance (e.g., an indoor conversation in a placeless office), but such precise qualitative distinctions were not made. The resulting data for each film, as entered in Excel, is exemplified in Fig. 1. Recorded time by location is depicted in the middle column.

Location and time for each film are then used as variables in the quintile method model:

$$\sum_{i=1}^{8} (Ti/Ttot) \longrightarrow \text{transformed to quintile score}$$

Where:

8 = The maximum number of locations depicted in a James Bond film (*Casino Royale*)

Ttot = Total running time of the film, in minutes

Ti = Amount of time in each location, in minutes

The amount of time in each location (*Ti*) is divided by the running time (*Ttot*), creating a percentage of time in every location for each film. That percentage is transformed into a quintile score which represents geographic dispersion (using Fig. 2). To arrive at a quintile score, consider that $n = 8$ is the maximum number of locations depicted in a single film, which is *Casino Royale*. Note that the first step in the computational process concluded that $n = 8$; it was not a pre-determined number at the beginning of the research. The highest possible score is therefore a hypothetical film taking place in eight locations, each taking up one eighth (12.5%) of the screen time.

The logic of the model is based on how viewers perceive spatial narratives in films. Films that take place in more locations should receive a higher score than those with fewer locations. In addition, a film where an equal amount of time is dedicated to each location should receive a higher score than a film that depicts the same number of locations, but most time is spent in just a few locations.

Fig. 2 shows how to determine quintile scores. This was presented to the students in the a subsequent step of the research. The distance from 0 to 0.125 is divided into quintiles (five equal groups). The first quintile (closest to 0) is assigned the value of one. The second quintile the value of two, and so on. The maximum score (adjacent to 0.125) is five. The same procedure applies from 1 to 0.125. (Note that the axis is not to scale in Fig. 2 and not all quintiles are labelled.) To achieve computational consistency among the films, they must use the same quintile determination method, as depicted in Fig. 2, which is also why $n = 8$ is used for all films.

Based on where *Ti/Ttot* fall along this line, a value is assigned depending on which quintile it is in. That is the score for one location in a film. The procedure is repeated for the second, third, and so on, location. As the sigma sign in the equation indicates summation, technically each film (except for *Casino Royale*) receives quintile scores of zero for *ghost locations*—places that do not exist in a film!—until the eighth summary iteration has occurred. The sum of all locations creates the final geographic dispersion score for a film. The lowest possible

Location	Minutes	Quintile score
London, England	4	2
Beirut, Lebanon	7	3
Macao	5	2
Hong Kong	18	5
Bangkok, Thailand	46	3
Island off Chinese coast	35	3
Total time	**115**	
Total quintile time		**18**

Note: Because of their unique semi-independent status, Macao and Hong Kong were treated separately from each other, and from China. Such political distinctions are also useful for class discussions.

Fig. 1. Time and quintile scores in *The Man with the Golden Gun* (1974) (Source: Author)

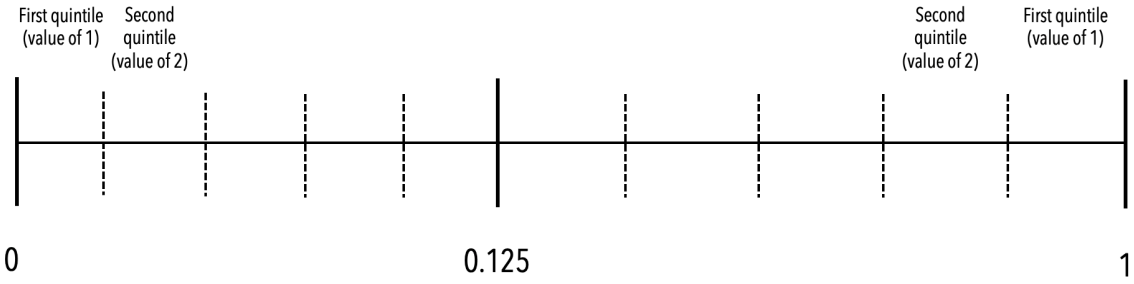

Fig. 2. Visual representation of quintile determination used in class (Source: Author)

score is 1 (a film that only takes place in one location) and the highest possible score is 40 (a film with an equal amount of time, 12.5 percent of the film, in each of eight locations). The right column in Fig. 1 shows a quintile score example. When introduced in class, and with the possibility of raising questions, this logical chain of reasoning was grasped by students without any statistical background. In particular, the visual manner in which scores are determined makes it easier for students to understand the meaning of the scores. Note that the choice of quintiles is somewhat subjective. The distribution of values in groups can be determined using another number, such as four (quartile).

3.2 The Polygon-Centroid Method

The second method accounts for the physical distance between locations depicted in the films. Intuitively, one might attempt to calculate the narrative distance of a film; that is, when the film shifts from location A to B, and then from B to C, and so on, until we have arrived at a total distance. However, this approach would be problematic as films involve scenes that quickly move from one location to another (often far away) and back again, sometimes without any geographic movement of the film's characters, which would create a distance measure of dubious merit. Instead, a polygon-centroid was devised for each film (it is logical to assign this task to the same student who calculated the quintile score for the same film)[1]. This measure can both map where a film is situated and calculate how geographically dispersed the film sites are. A centroid of a plane (here, a world map) is the mean position of several points. In effect, a centroid is the center of gravity of the different locations in a film. The method was inspired by center of gravity reasoning in classic *Weberian* location theory (see Anderson, 2012). In Fig. 3, the points are four locations in a hypothetical film and the centroid is located in the middle, marked c. The centroid will be used for analytical purposes in section 4.

The sum of all distances from c to each point (film location) is the polygon-centroid measure for a film. A film with locations that are geographically dispersed will have a large polygon (and therefore a high score), while a film that takes place in a more confined area will have a much smaller polygon (and a correspondingly lower score). All other things being equal, a film with many locations is also likely to get a higher score than a film with fewer locations.

The value of the measure is connected to how reasonably geographically literate viewers understand that world regions such as South America, Middle East, or East Asia are far apart geographically, culturally, and politically. This is recognized by the axiom referred to as the first law of geography—near things are more related than distant things (see Sui, 2004). Hence, places that are close tend to have similar cultural and political environments, unlike those that are far apart. Thus, a large polygon repre-

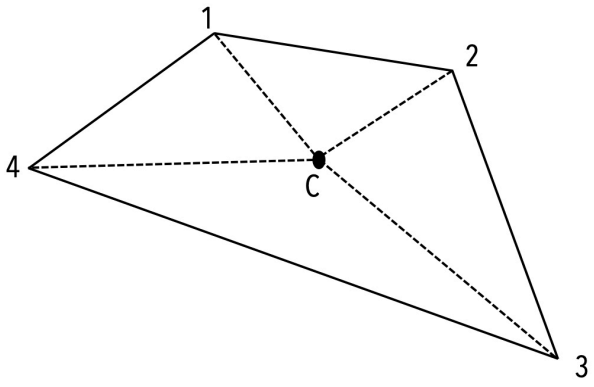

Fig. 3. Visualization of a polygon-centroid. The four points of the polygon are locations in a film, point c is the centroid, and dashed lines are distances from location to centroid (Source: Author).

sents geographic diversity and James Bond as a more sophisticated and worldly traveler compared to a film with a smaller polygon. As the centroid shows the mean location of these events, the films' centroids can be compared for potential geographic patterns over time. The polygon-centroid calculation is formulated below.

$$\sum_{i=1}^{n} (d(c\text{-}1), d(c\text{-}2), \ldots n) = \text{polygon-centroid score}$$

r

d = distance (from centroid to one location)

c = centroid

Distance calculations (also performed by students) are based on the longitude and latitude of each location. The basic tool to accomplish this is Google Maps. A right click at a location displays its latitude and longitude. However, exact locations are not always easy to determine based on the geographic information provided in the film and reasonable approximations must be made. For example, a location may be imprecisely defined in the film (e.g., *somewhere in Siberia*), not explicitly disclosed (e.g., *Spectre Island* in *From Russia with Love*), or as noted above, a fictional place may represent a real location (e.g., *San Monique* in *Live and Let Die* represents Haiti, which is important for the purposes of determining concrete longitude and latitude). Similarly to classroom discussions that refined the data for the quintile score, finding appropriate lat-long points was a collective endeavor. Lastly, one location that cannot be converted to longitude and latitude is outer space (e.g., *Moonraker*). In that case, after another classroom discussion, we decided to assign a distance value to outer space that equaled the mean distance value of the other locations in that film, so that outer space does not substantially skew the final score. The determination of location is a useful learning exercise as it exposes students to the process of operationalization—turning a concept, such as location, into measurable observations.

Students can determine a centroid from polygon points using web tools. We used *geomidpoint.com*. It does not only calculate a centroid (in longitude and latitude), but also maps the outcome, showing all polygon points (film locations) and the centroid. Next, to calculate distances between latitude and longitude points, we used another web tool provided by the US National Oceanic and Atmospheric Administration (*nhc.noaa.gov/gccalc.shtml*). Because it is necessary to enter latitude and longitude as positive or negative numbers depending on the hemisphere they are in, students visually presenting their results during a class session allowed for the occasional correction of mistakes in the online data entry phase. Fig. 4 depicts an example of the results.

Place	Latitude	Longitude	Distance from Centroid (km)
London, England	51.4843	-0.0978	859
Tuscany, Italy	44.1886	9.5827	1,235
Haiti	19.3131	-71.9645	3,009
Bregenz, Austria	47.4967	9.7467	1,388
Altiplano Region, Bolivia	-15.6690	-64.67836	4,351
Kazan, Russia	55.7973	49.19406	6,899
Centroid	**43.7644**	**-19.1576**	
Total distance			**17,777**

Fig. 4. Distance calculations in *Quantum of Solace* (2008) (Source: Author)

4. Results and Discussion

This class exploration involved a case study in the processing of filmic spatial narratives into quantitative data through a rigorous methodological procedure. Below is an analysis of what such data can reveal. Specifically, they showed how the geographic pattern of Bond's missions have changed over time. Fig. 5 indicates geographic dispersion using the quintile method. The results reveal a general, but not entirely straightforward, increase in scores over time.

During one class period, students reported their scores and discussed the reasons, in writing and orally, for the score of each film. Fewer locations are

depicted in early films, while more locations are typical in recent films. In fact, the first film *Dr. No* (1962) has the lowest score (five) as it only depicts two locations—10 minutes in England (a scene introducing James Bond while gambling at a private club in London, followed by his meeting with M at the MI6 headquarters, also in London) and 96 minutes in Jamaica (on the main island and a smaller island that is the lair of the villain). The most recent film *No Time to Die* (2021) has the highest score of 29 as the narrative takes the viewers to six places: rural Norway, the Calabria Region of southern Italy, England, Jamaica, Cuba, and the final battle scene on an island near the Russia-Japan border (seemingly inspired by the disputed Kuril Islands). The high score is also a result of the six places playing an approximately equal role, as measured by time in each location.

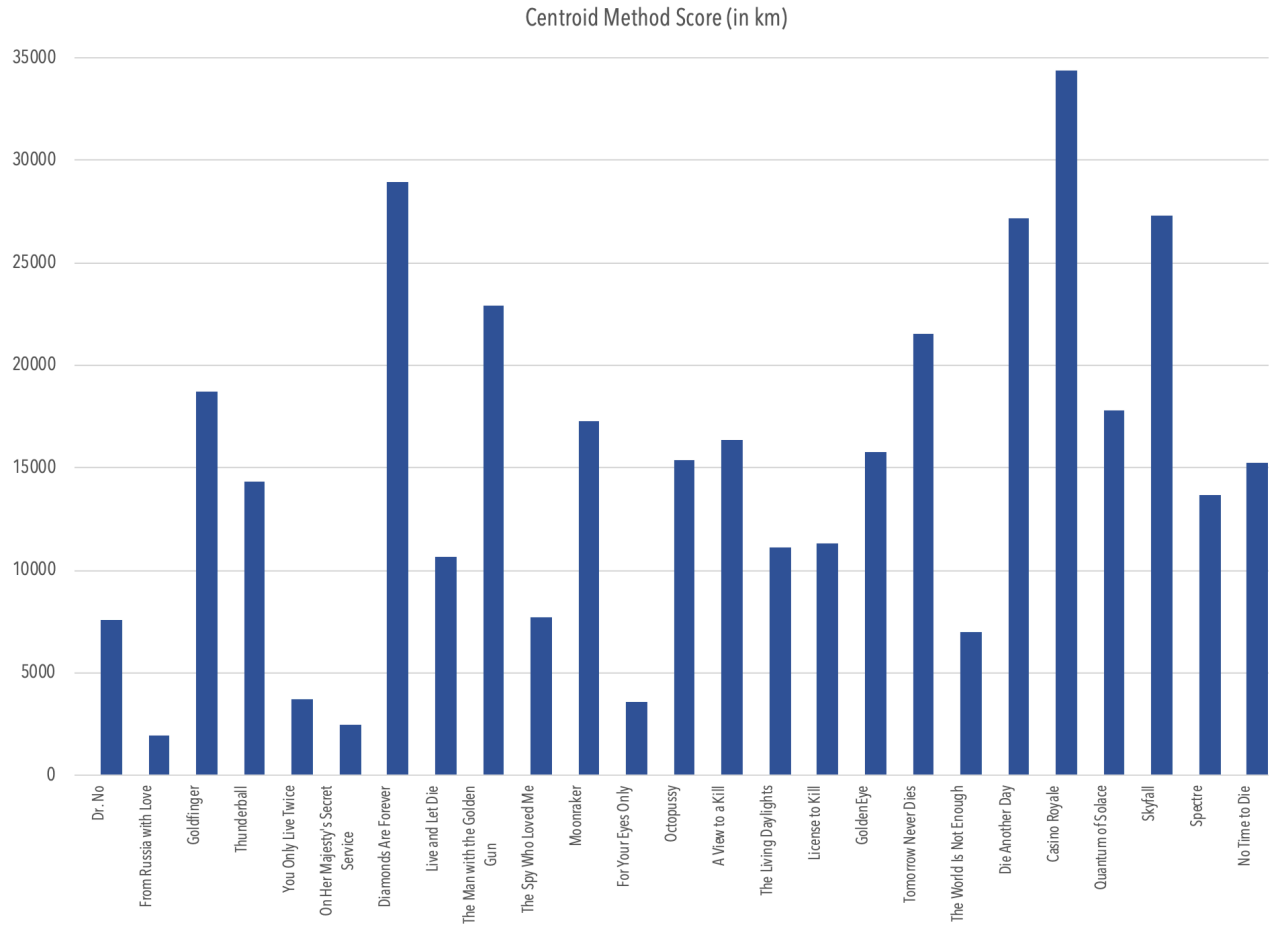

Fig. 5. Quintile score for James Bond films, in temporal order (Source: Author)

The pattern is reinforced by the relatively early *You Only Live Twice* (1967) having the second lowest score—it is mainly set in Japan with brief interludes in Hong Kong and in outer space—while the Daniel Craig era *Casino Royale* (2006) has the second highest score with eight locations (Czech Republic, Uganda, Madagascar, England, Bahamas, Florida, Montenegro, and Italy). The trend of increasing scores has exceptions though. For example, in the middle franchise *Moonraker* (1979), Bond travels frequently around the world and the film accumulates one of the highest scores. Since the 1995 *GoldenEye* though, it has been common practice that the films have a high level of geographic variety, which is shown in Fig. 5.

The polygon-centroid score exhibits a similar trend (Fig. 6). Generally, scores increase over time, but with greater film-by-film variation compared to the quintile scores. Again, the outcome was analyzed during one class period. The lowest score is an early film (*From Russia with Love*) and the highest score is a recent film (*Casino Royale*). Some early films with low quintile scores also have low polygon-centroid scores (e.g., *You Only Live Twice* and *On Her Majesty's Secret Service*). As the polygon-centroid method emphasizes other geographic dimensions compared to the quintile measure (distance rather than time-location), there are differences. Low scoring films are not just the older ones, but also those that tend to be *Eurocentric* and therefore with small polygons, or otherwise narrowly depicting one region of the world (e.g., the East Asia focus of *You Only Live Twice*). For example, *For Your Eyes Only* with six European locations that are close in space is understood by Bond scholars as a down-to-earth rection against the immediately preceding

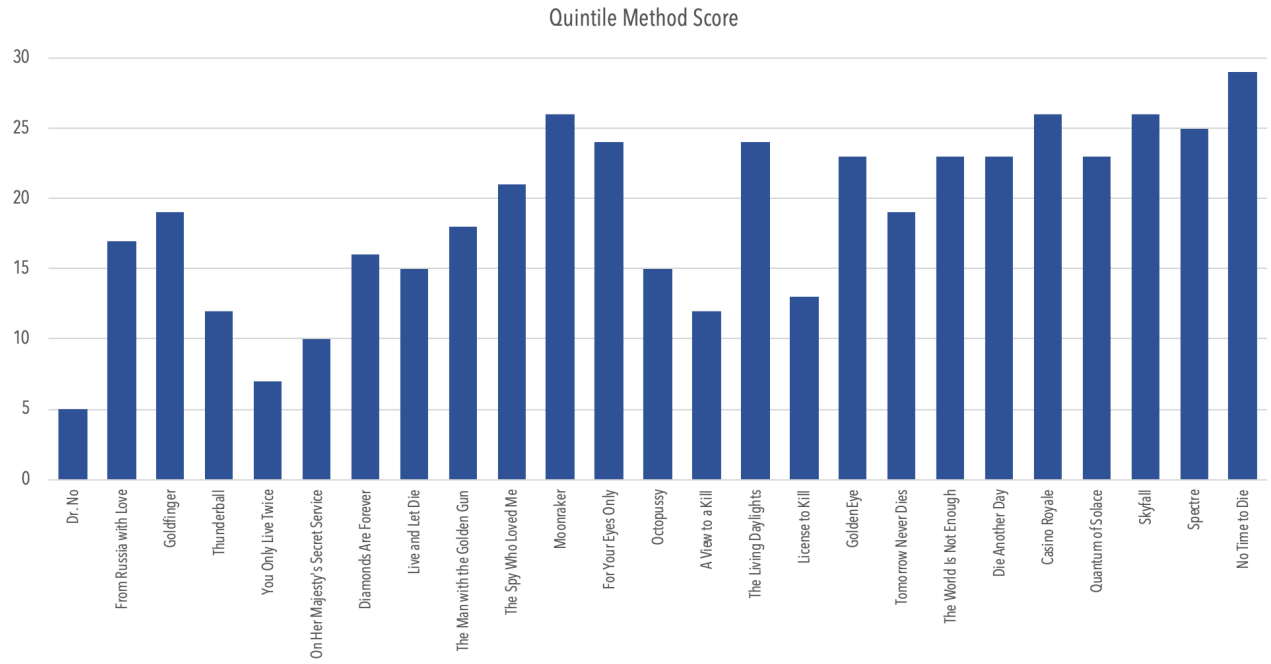

Fig. 6. Polygon-centroid score (in kilometer) for each James Bond film, in temporal order (Source: Author)

high-tech and globetrotting *Moonraker* (e.g., Chapman, 2007). Multi-regional films, such as *Diamonds are Forever* (Africa, Europe, North America) and *Casino Royale* (Africa, Europe, Caribbean) inevitably score higher.

There are 14 films that have a centroid in the western hemisphere and 11 in the eastern hemisphere (Fig. 7) with no specific east-west pattern emerging. The centroids of all films, however, are located in the northern hemisphere. Occasionally, a centroid was positioned outside the perimeter of a polygon, which offers a pedagogical opportunity in the classroom to discuss the cartographic concept of projections and distortions associated with depicting Earth, a round object, on the flat surface of a map. Far north (North Atlantic and Arctic oceans) centroids are also the result of an Earth-is-round effect of large polygons. As Fig. 7 indicates, there is no strong temporal pattern either: Bond films do not tilt towards one region of the world over time. In fact, students noted that there is a tendency that one film mainly set in the western hemisphere is followed by a film set in the eastern hemisphere. This seemingly erratic spatio-temporal pattern may be a production choice to provide the audience with a diverse geographic experience from one film to the next. In fact,

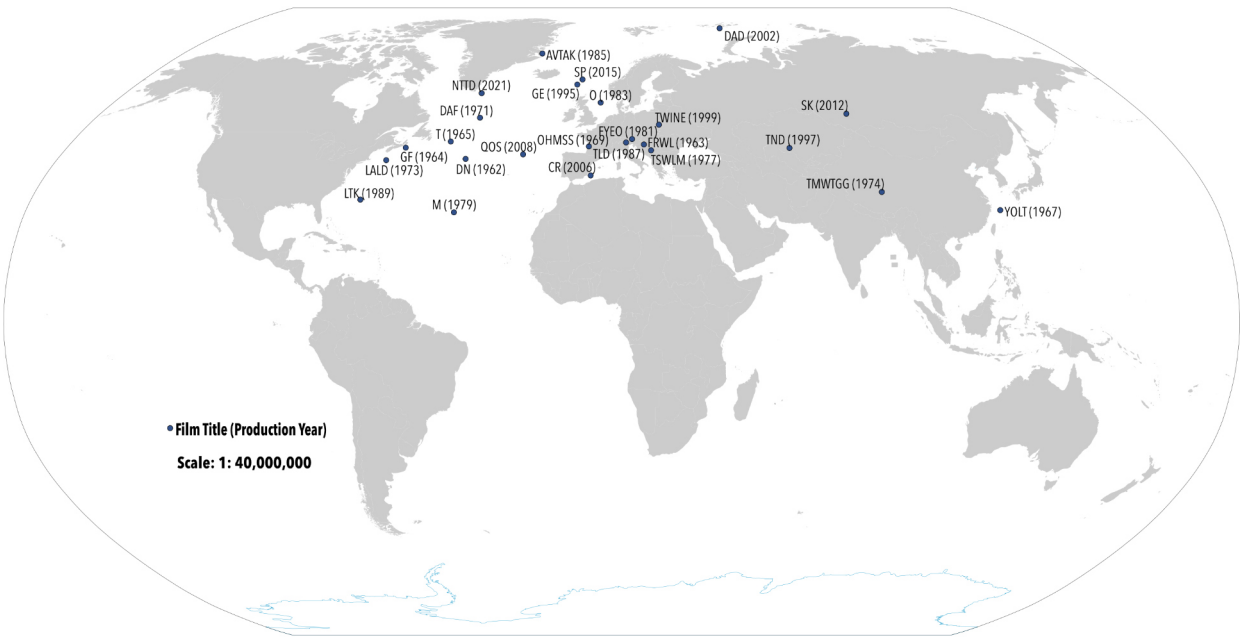

Fig. 7. Centroids for all James Bond films. Centroids are labelled with abbreviations based on film titles and with year of production in parenthesis (Source: Author)

there is little evidence of specific world regions rising or declining in prominence over time. The setting of individual films can be explained by geopolitical events, such as the Russian invasion of Afghanistan depicted in *The Living Daylights*, the high-profile drug trade of the Americas during the late 1980s (*License to Kill*), and wayward nuclear weapons in Central Asia during the immediate post-Cold War era as portrayed in *The World is Not Enough*. However, these individual cases did not generate broad temporal geographic patterns. One exception is that fewer films are set in the United States over time. Of the 126 locations depicted in all films, about half (60) are European, which is expected considering that Bond is a British agent and nearby European locales provide a suitable Cold War context or elite landscapes (e.g., upscale resorts or casinos) that are essential to the Bond fantasy. One exception is northern Europe, which as an apparently uninteresting geopolitical locale plays a minimal role. Europe is followed by 15 locations in East/Southeast Asia, while Sub-Saharan Africa and South Asia are the least depicted world regions. The latter two regions are interesting as some British colonial vestiges are important in several Bond films (e.g., Jamaica), but clearly not all of them are. The only film partly set in Sub-Saharan Africa is *Casino Royale*, where the Ugandan rebel group the Lord's Resistance Army plays a minor role. Afghanistan, straddling the Middle East and South Asia, is important in *The Living Daylights* in the context of the Soviet invasion, and tangential to the narrative in *Octopussy*, which is mainly set in India.

In several ways, the travels of James Bond are not random, as noted regarding the connection between real-world geopolitics and Bond narratives. Using an instructor provided study guide, the students discussed the following themes and concomitant conclusions. First, the imagination of Ian Fleming, transferred more or less faithfully from books to films, sets the parameters of what locations are visited, which resulted in increasing geographic dispersion scores over time, as expected. The first eight films follow Fleming novels reasonably closely. As the novels are relatively short—less than 200 pages—the narratives in corresponding films therefore tend to be more limited geographically. Fleming also maintained a second home in British-controlled colonial Jamaica, which explains the emphasis on the Caribbean in Bond; a preferred location that we conclude has endured beyond the films based on Fleming's writing. The early era was followed by eight films loosely based on Fleming novels or short stories. During this period, screenwriters had more leeway to imagine their own spatial narratives. From *License to Kill* (1989) and onward, the screenplays have been solely creations of the films' writers and the tendency towards spatial inventiveness continued. The only exception is the relatively recent *Casino Royale* (2006) which is based on a Fleming novel, although a large section of the film was a non-Fleming storyline grafted onto the novel's material, and the film's scores are the highest and second highest on the two measures.

In terms of specific locations, much of the geography of James Bond draws from Ian Fleming's own life and experiences, particularly the early films. From class readings and discussions, students were familiar with Fleming's work both in military intelligence and as a news reporter, visiting places like Istanbul and Moscow. The use of Istanbul (in three films from the 1960s to the 2010s) is an example of a geopolitical liminal space that functions as a meeting point of political and personal antagonists. The Strait of Gibraltar performs a similar function in two films. The naval background of Fleming is reflected in the prevalence of oceanic scenes and themes, especially those associated with the ungoverned character of the seas and, sometimes, remote islands as spaces where villains can operate freely. The villain Stromberg's underwater compound in *The Spy Who Loved Me* is a prominent example. Despite the central position of the Soviet Union in the Cold War spy genre, it plays a minor role as a locale in earlier Bond films; rather, Russia and the post-Soviet states are primarily depicted in films from the 1990s, representing new geopolitical concerns, yet connected to the demise of the Soviet Union. While an emphasis on East Asia has been evident throughout the Bonds series, such as the rise of Japan as a global economic powerhouse in *You Only Live Twice* (1967) and the threat of *Red China* in *The Man with the Golden Gun* (1974), the persistence of Asian themes in later Bond films suggests that the filmmakers have adapted to the emergence of a *Pacific Century*. This trend is exemplified by an impending war between China and the West in *Tomorrow Never Dies*, Korean hostilities along the demilitarized zone in *Die Another Day*, repercussions from the Hong Kong handover in *Skyfall*, and the villain's lair off the coast of Japan in *No Time to Die*.

5. Conclusions

Using films is a way to make spatial thinking relatable to students. This study discussed the ways in which students can extract content from films and process that content into data using geographic methods and narrative analysis. The in-class research used two student-calculated measures to capture dif-

ferent dimensions of the geographic dispersion in the James Bond films. The meaning of geographic dispersion is multilayered, which is why two separate measures are preferable as they allow students to think beyond simple answers to a research question (although the two could ultimately be combined into one measure). On a film-by-film basis, the correlation between the quintile and polygon-centroid methods is $r = 0.396$, which indicates that the two measures are related, yet showing partially dissimilar results due to their different design. The conclusion is that the James Bond films tend to be slightly more dispersed over time, as Bond travels to more, and often more far-flung, places later in the franchise. The consistent prevalence of European settings, though, makes the Bond film series especially interesting to European geographers and course instructors.

The methods were also designed to introduce basic quantitative analysis to a general student body. At the same time, students were tasked to contextualize the data to allow for a qualitative understanding of how factors unique to the Bond series, and the real-world geopolitical imagination of different eras, influenced the filmmakers' choices of settings. Such an analysis allowed students to critically think about how filmmaking contributes to public spatial narratives. As examples discussed above indicate, many films used locations that reflected geopolitical concern at the time. This provided an opportunity for students to analyze the location of each film through a geopolitical lens and discuss how that reality is reflected in the films' narratives. Moreover, the Bond series is biased towards the Global North, reflecting its particular geopolitical interests. Countries and regions of the Global South are depicted when they fit into global concerns and events, while regions mostly ignored, such as Sub-Saharan Africa and South Asia, have conflicts that may have been perceived by the filmmakers to be regional in scope and therefore less interesting to a global (and especially western) audience.

How effective were the methods discussed in this paper? A standardized course evaluation tool was used, as adopted by the university where the course was offered, rather than one designed specifically to assess the project. Therefore, limited conclusions can be drawn from the evaluations, although a few student comments illustrate the effectiveness of the method. One student comment conveys that the design achieved its objective: the material was taught in an effective way that "help[ed] us understand". Another student opined that the instruction was "interactive" and a third stated that the material was "very well put together". The comments briefly suggest that spatial analysis was used successfully to process film content into quantitative data, while also allowing students to contextualize results with qualitative information.

Finally, the methods utilized in this paper are readily employable in the geographic analysis of all types of films. That could include other serialized films, films of a particular genre, or comparing films from different time periods. While the methods discussed in this paper were developed in a course with a geography designation, they can be adapted in other courses as well, particularly in the context of the *spatial turn* in the social sciences and humanities, which emphasizes the importance of place and space for a wide variety of academic inquiries (Warf & Arias, 2009). Future adaptations of the methods are also encouraged to use online mapping tools, such as ESRI's StoryMaps, to communicate and visualize educational explorations with spatial and temporal patterns (Cope et al., 2018), which has been shown to enhance spatial thinking skills among students (Jo et al., 2016).

Endnote

[1]There are other possible ways of measuring dispersal without a centroid. For example, using ruler and polygon tools in Google Earth can create similar geometric film representations and provide perimeter distances, and probably yield similar results. But as we also wanted to generate, depict, and discuss film centroids, the method discussed herein was chosen.

Acknowledgements

I am thankful for the students who enrolled in the course. Without their continuous input, the project could not have been accomplished. They were Nicholas Bowes, Mackenzie Caron, Joseph Dang, Hannah Frizzell, Dalton Group, Micah Gutierrez, Donald Moffat, Taylor Peck, Kassandra Shope, Kinlee Whited, and Erika Wilkie. My colleagues Ahmad Massasati and Michael Ferencak also offered suggestions on how to design the two quantitative measures.

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