THURJ

2025 VOLUME 24

The Honors Undergraduate Research Journal
2025

University of Oklahoma Honors College
Volume 24

Table of Contents

KROJOVÉ TRADICE A STROJOVÉ UČENÍ: Weaving Convolutional Neural Networks Into The Fabric of Czech Cultural Heritage Preservation

Anna L. Sedivy-Thompson

INTRODUCTION

In the sphere of cultural heritage preservation, there are two types of cultural heritage: tangible and intangible. Tangible heritage refers to physical objects, sites, and artifacts that hold cultural, historical, or artistic significance. Under the tangible heritage umbrella are elements such as monuments, buildings, art, tools, and clothing—all pieces of the material culture that is passed down through the generations (UNESCO). Czech folk costumes are a prime example of tangible heritage. These garments represent not only the aesthetics of a particular region, but also embody the social, economic, and environmental conditions that influenced their development, design, and use.

By contrast, intangible heritage refers to the practices, expressions, knowledge, and skills that communities recognize as part of their cultural heritage. This encompasses oral traditions, performing arts, social practices, rituals, and traditional craftsmanship (UNESCO). Intangible heritage is essential to the creation and significance of folk attire. For example, the techniques used in the making of kroje, like embroidery, fabric dying, and beadwork, are passed down through time, making the production of these garments a form of living heritage. The contexts in which these costumes are worn—such as festivals, religious ceremonies, and community gatherings—are also intangible, as they involve cultural traditions, social interactions, and shared meanings.

Kroje, or traditional folk attire of the Czech Republic, have been worn for centuries by Czech people, especially in rural villages across the country. This folk attire represents an important aspect of Czech cultural heritage. Each village developed its own distinctive kroje, which were shaped by factors including the local economy, ethnicity and religion of residents, access to materials and resources, working conditions of the area, prosperity of the village, climate, and contact with neighboring villages or peoples (Jeřábková). Within a single village, there were a variety of kroje, with variations affected by gender; age; marital status; familial wealth; climate; liturgical season; occupation; religious affiliation; the occasion for which the kroj was being worn; the effects of modernization, globalization, and industrialization; and to a lesser extent, personal preference. In the 18th and early 19th century, kroje were ubiquitous, worn everyday by inhabitants of the lands which would eventually become the modern-day Czech Republic.

The prevalence of Czech folk attire began to dwindle in the 19th century (Jeřábková). By the late 20th century, kroje were only worn either by folk ensembles in performance settings, or in a handful of South Moravian and West Bohemian

villages for religious celebrations, village feast days, festivals, and sometimes significant life events like baptisms and weddings. Today, kroje are still worn as a celebration of heritage and local identity at events in a limited number of municipalities in the Czech Republic. However, interest in Czech folk traditions has seen a resurgence in popularity in recent years, and involvement in folk activities is continuing to grow exponentially. This renewed interest in Czech folklore has, in the past two decades, led to UNESCO recognition of events, ceremonies, fabrics, techniques, and crafts directly related to the creation, wearing, and preservation of Czech folk attire (UNESCO). Furthermore, young Czech people and young descendants of Czech immigrants to the United States have increasingly embraced the research and wearing of kroje. Some of these young people have even completely revived variations of the traditional dresses which were once extinct. Such interest from young people and international organizations alike has necessitated the development and application of modern tools to assist with the preservation of Czech cultural heritage.

The differences between kroje–either kroje from multiple neighboring villages, or a single village's kroje meant for different occasions–can be extremely subtle. Sometimes, these differences are only recognizable by experts or locals with extensive knowledge and experience. Furthermore, a particular feature in one kroj may appear to have the same significance in another region's kroj due to surface-level similarities. For example, headscarves may be worn only by married women in some areas. In other villages, similarly decorated and tied head scarves are worn by all women for specific occasions. In some municipalities, such as Vlčnov, ribbons tied around the arms are reserved exclusively for single women. Married women wear the same style of blouse as the single girls, but leave the embroidered cuffs of their sleeves uncovered. In other towns, such as Kostelany nad Moravou, women stop wearing the waist ribbon of their kroj after marriage, rather than the ribbons that go around their sleeves.

Inaccuracies could proliferate if someone, unfamiliar with the specificities of each of these towns' folk dresses, drew the incorrect conclusion that a woman from Vlčnov was unmarried because she wore the ribbon-like waist decoration on her kroj. A similar situation would occur if someone applied the rules of Vlčnovské kroje to other towns' traditional costumes, assuming a woman to be unmarried if she had ribbons on her sleeves, although the presence of ribbons on her sleeves might actually have no relationship to her marital status in her village of origin. These visual similarities can be extremely misleading, quickly leading to misinformation if not carefully identified and researched. Precise identification is essential for effective cultural preservation, accurate academic research, and maintenance of strong community identity, but this precision can be difficult to achieve without adequate access to local community members and ethnographic experts. As less specialized folklore enthusiasts from around the world take up the research, creation,

and wearing of kroje, more robust tools are needed to prevent mistakes and misconceptions.

Misclassification of kroje can also lead to a homogenization of regional styles, erasing the subtle yet important distinctions that differentiate communities. This is an issue that has already been seen, especially in the Moravian regions of Valašsko and Kyjovsko, as well as in Bohemia as a whole (Jeřábková). In these areas, some people without specialized knowledge have chosen to create and wear kroje designed to represent the generalized features of a widespread ethnographic region, as opposed to the traditional kroj from a specific town in its unique and accurate form. This homogenization can inadvertently lead to the loss of the specificities that represent the unique history and heritage of a single locality, including but not limited to specific embroidery patterns, methods of dying material, intricate hairstyles, pieces of a kroj that can indicate something about the wearer's personal identity, and the special character of a town's kroj that lends to the richness of traditional Czech folk attire. As this generalization continues to blur cultural boundaries, the ability to identify a kroj's origins with precision becomes essential to maintaining the authenticity of these traditions.

Kroje provide valuable insights into the socio-economic and cultural dynamics of historical Czech communities (Bogatyrev). As the regional differences in kroje reflect variations in local resources, trade, craftsmanship, religious affiliations, and interactions with neighboring peoples, accurate information about a kroj's origins allows researchers to trace historical patterns and understand how local traditions evolved over time. Inaccurate identification has the potential to lead to misunderstandings of a region's history or the misrepresentation of its cultural practices.

For communities that still actively wear or celebrate their regional kroje, these garments are a source of local pride and identity. The ability to distinguish kroje from neighboring villages strengthens a community's sense of belonging and connection to its history. This issue becomes even more significant as members of Czech diaspora communities around the world seek to recreate and wear the kroje of the towns from which their ancestors emigrated. For these individuals, accurate identification is crucial in connecting with their family's traditional dress. Since many diaspora members do not speak Czech fluently, finding detailed information about the specificities of kroje or correctly identifying their family's kroje can be extremely difficult, if not impossible. As a result, there is a growing need for tools that can assist with accurate classification, ensuring that these tangible expressions of identity and shared heritage are properly recognized and honored.

Automating the identification process can make accurate information about folk clothing quickly accessible to all, regardless of native language or geographic location, thereby preventing misunderstandings and misinformation about kroj variations. Image classification using Convolutional Neural Networks (CNNs) has the potential to be useful for accurately identifying the variations and origins of a

kroj. CNNs are known to be successful in a wide variety of image classification tasks, from facial recognition to object detection. Thus, CNN models can be applied to photographs of Czech kroje to classify them based on town of origin. Kroje are extremely detailed garments, usually adorned with intricate hand-embroidery, painting, and cut-out work; extensive glass beadwork; specific color combinations; rich fabrics with various printed patterns or woven textures; and three-dimensional pleated, starched, carved, sculpted, or crafted shapes which vary by region. CNNs are excellent at detecting and learning such fine-grained visual features, as filters can automatically learn to recognize patterns which are essential in distinguishing one kroj from another. The ability of CNNs to differentiate subtle variations in complex visual data makes them ideal for identifying differences between kroje that are sometimes only noticeable to experts, such as the specific tying of headscarves or the use of certain patterns and colors. However, CNNs do not miss the forest for the trees. While these networks are good at extracting high-level patterns, like specific embroidery styles or design elements, they also handle low-level features, like edges and textures. As a result, CNNs can capture both the general structure of a kroj, as well as the details of a unique variant.

As is commonly the case with folk clothing, photographs of kroje are taken in all different contexts. This can lead to variability in lighting conditions, angles, and backgrounds in the images to be identified. Luckily, CNNs have the ability to generalize across these variations if given a representative dataset. Even if a large dataset of kroje images is not available, CNNs can benefit from transfer learning. Pre-trained models, like ResNet, can be fine-tuned for the specific task of kroje identification, thereby reducing the amount of data needed while maintaining high accuracy. This is especially useful with rather niche applications such as kroje, where data is extremely limited. Thus, this project seeks to investigate how accurately CNNs can distinguish between the traditional kroje of two nearby towns in the Czech Republic.

LITERATURE REVIEW

In high-conflict areas, such as Iran, deep learning has been applied to cultural heritage buildings in an effort to preserve the “irreplaceable legacy” of the area’s tangible cultural heritage (Bahrami & Albadvi). Bahrami and Albadvi argue that the use of AI/ML in heritage preservation is a necessity rather than a luxury, yet as of 2024, their research was the first of its kind in the area of using machine learning or deep learning to preserve cultural heritage buildings. In this study, several pre-trained models, including ResNet, were used to identify defects in images of cultural heritage buildings with up to 94% accuracy (Bahrami & Albadvi).

A 2024 study, which developed a new deep learning network (MonuNet) for the classification of images of heritage sites in Kolkata, India, noted that relatively little research has been done in applying machine learning and deep learning methods to tangible cultural heritage artifacts (Sasithradevi). This study also noted

that while "it is evident from the literature that there is a huge space for ML and DL techniques in the field of heritage image classification," there is a large barrier in the way of these projects: adequate knowledge and available information about the cultural artifacts that need classifying. Furthermore, this study also struggled with the lack of availability of a public dataset, thus requiring researchers to curate their own dataset. The accuracy of MonuNet in this application peaked at 89%, with the study highlighting that the development of such tools holds significant benefit for cultural heritage stakeholders, international academicians, tourists, and locals (Sasithradevi).

Other tangible heritage artifacts related to cultural textiles and traditional clothing have been the subject of studies involving various learning methods. This includes a 2015 study which used Bag of Features, Support Vector Machines, and Scale-Invariant Feature Transform for the classification of images of traditional Indonesian Batik fabrics, with accuracies ranging from 79% to 97.67% (Azhar, et al.). An additional study in 2014 used Fuzzy Neural Networks for the purpose of classifying seven types of Indonesian Batik, with precision between 90-92% (Rangkuti). In Europe, an ongoing European Union co-funded project called SILKNOW applied ResNet-152 to photos of silk fabrics of European origin to predict the fabrics' specific locations of origin, material, and production techniques with accuracy between 92-95%. Again, this project suffered from a lack of available dataset and thus necessitated the creation of suitable images with the help of a web crawler prior to applying the deep learning components (Dorozynski, et al.).

As of November 2024, no existing literature could be found on the topic of applying deep learning methods to the identification of the origins of traditional folk costumes. Likewise, no existing literature could be found applying such methods to the preservation of tangible cultural heritage in the Czech Republic. Finally, no existing public dataset of Czech kroje could be found.

METHODOLOGY

As no existing dataset of Czech traditional dresses could be found in the literature review, I created a dataset consisting of 900 images of girl's and women's kroje from two municipalities in the Slovácko region of the Czech Republic: Vlčnov and Hluk. These towns were specifically chosen due to the prominence of their Jízda králů (Ride of the Kings) celebrations, a cultural event recognized by the UNESCO Representative List of Masterpieces of the Oral and Intangible Heritage of Humanity. The celebrations in both Hluk and Vlčnov draw significant international attention and are the subjects of extensive photographic documentation. As a result, the kroje from these municipalities are well-photographed and images are widely available online, providing accessible and reliable visual data for the task. Furthermore, despite being only approximately 5 kilometers apart, Hluk and Vlčnov are located in different ethnographic regions, with Hluk belonging to the Uherský Ostroh-type kroj and Vlčnov more closely aligning with the Uherský Brod type. This

makes the two villages' kroje visually distinct for human observers, but similar enough that the comparison of the two styles would provide a useful challenge for classification algorithms.

To compile the dataset, I sourced images from various online databases, social media pages, public archives, municipal websites, and scholarly articles. Care was taken to ensure that the dataset included a wide range of variations in both image quality and context. Images included diverse lighting conditions (well-lit studio photos versus outdoor event snapshots), different environments (indoors versus outdoors, urban versus rural, various weather conditions), and varied body positions to reflect real-world use cases. Additionally, the dataset included close-up shots of specific kroj parts and details, as well as more distant full-body images to challenge the model's ability to generalize across different zoom levels.

I also intentionally curated images that displayed a range of fabrics, colors, patterns, and embellishments to represent the full spectrum of variations present in kroje from Hluk and Vlčnov. Both high-quality and low-quality images were included to simulate potential user-generated content in a real-world application. The dataset also featured a variety of angles and photo sizes so that the model would be able to handle images of various perspectives or resolutions. By diversifying the dataset as such, the goal was to train a model capable of identifying kroje under a variety of conditions, making the model applicable to a broader set of real-world scenarios. After assembling the images, each one was manually inspected, cropped, and labeled according to the municipality of origin, either "Hluk" or "Vlcnov." There were 450 images per class.

As the images were from a variety of sources and many were cropped with inconsistent dimensions, the images needed to be normalized before using them for the task. Thus, I preprocessed the collected images by padding them with black pixels until each image was resized to 224x224 pixels. This specific size was chosen because it aligns with the input size required for most pre-trained CNN models, such as ResNet-34, my model of choice for the task. Padding, rather than resizing, was used to preserve the integrity of the original image features and proportions.

For the task of classifying the kroj images, I selected the ResNet-34 architecture, a well-established pre-trained CNN model designed for image recognition. The model is particularly effective for complex image classification tasks, where both high-level and fine-grained features are important. Given that the visual differences between kroje from Vlčnov and Hluk are subtle yet identifiable to the trained eye, the ability of ResNet-34 to capture both low-level details (such as shape and color) and higher-level patterns (such as embroidery motifs and fabric patterns) made it an ideal candidate for this task. Using this pre-trained model meant that I could rely on Transfer Learning and did not have to build a model from scratch, which could result in overfitting. Additionally, ResNet still performs well when applied to small datasets, which is the case in this particular project (Han, et al.).

After image preprocessing, the dataset was split into training and validation sets at an 80/20 ratio. Therefore, 720 images were used for training and 180 images were used for validation. The split of the images into the training and validation sets was performed randomly to ensure the model had exposure to a variety of images during both phases. The model was trained for 10 epochs using the compiled kroj dataset. Given the relatively small size of the dataset, a modest number of epochs was used with the goal of preventing overfitting, while still allowing the model to learn meaningful features. For the training process, I utilized the Adam optimizer, which is widely used in deep learning because of its adaptive learning rate capabilities. Adam was chosen over traditional optimizers like Stochastic Gradient Descent (SGD) for a variety of reasons. Firstly, Adam adjusts the learning rate dynamically during training, so less manual adjustment is necessary. As a result, the model converges faster and handles sparse gradients more efficiently. Additionally, Adam is better suited for large datasets, and as I intend to expand this project to additional towns and styles of kroje, this would best handle the size of the dataset that would be used with the model as the project grows.

I used Cross-Entropy Loss as the loss function, which is the standard choice for multi-class classification tasks. Cross-entropy loss measures the dissimilarity between the predicted class probabilities (the model's output) and the actual class labels. The ResNet-34 model outputs probabilities for each class—in this case, predicting whether an image belongs to the classes of either "Hluk" or "Vlčnov". Cross-entropy loss helps penalize predictions based on how far off these probabilities are from the true labels. Additionally, cross-entropy loss not only penalizes incorrect predictions but also encourages the model to assign high confidence to correct predictions, which helps improve the overall precision of the model. Although this is a binary classification problem (two towns), cross-entropy loss efficiently handles two or more classes, making it a robust and effective choice here. Additionally, as the project expands, cross-entropy loss will be able to handle the tens or even hundreds of different classes used in the dataset.

To enhance the diversity of the dataset and improve the model's generalization ability, various data augmentation techniques were applied in one of the models. The augmentations included random horizontal flipping, random rotations of up to 15 degrees, and color jittering to introduce slight variations in brightness and contrast. These transformations simulate real-world conditions where kroje might be photographed from different angles, under different lighting, or with varying visual clarity. This process was designed to expose the model to a broad variety of image conditions, helping it to learn more robust features for kroje classification, prevent overfitting, and make the model more adaptable to real-world variations in image quality and environmental conditions.

RESULTS

Three models were trained using the dataset of images from the two municipalities, Vlčnov and Hluk. The objective was to distinguish between several variations of their women's kroje. The models were trained under three different conditions: (1) with 300 images per class, (2) with 450 images per class, and (3) with 450 images per class and additional data augmentation applied. The models were evaluated based on their training accuracy, validation accuracy, training loss, and validation loss over 10 epochs.

Model 1: 300 Images per Class

The first model trained with 300 images per class showed strong initial performance, with the training accuracy increasing steadily from 85.00% in the first epoch to 99.38% by the final epoch. The validation accuracy peaked at 99.17% in epoch 7, indicating excellent generalization. However, validation loss showed some fluctuations, especially in later epochs, suggesting mild overfitting. The lowest validation loss was achieved at 0.0740 in epoch 7.

Model 2: 450 Images per Class

Increasing the dataset to 450 images per class improved training stability. The training accuracy reached 99.72% by epoch 10, with relatively low training loss throughout. The validation accuracy reached a high of 97.22% in the final epoch, with consistent performance across epochs. This model achieved lower validation loss earlier in training (e.g., 0.0819 in epoch 6) compared to Model 1, indicating more effective generalization due to the larger training set.

Model 3: 450 Images per Class with Data Augmentation

Applying data augmentation to further diversify the dataset maintained high training accuracy, peaking at 98.75% by epoch 8. However, training loss fluctuated much more compared to the previous models. Validation accuracy was strong, reaching 97.78% in epoch 4, but validation loss varied widely across epochs. The lowest validation loss was 0.0689 in epoch 6, but high validation loss in some epochs (e.g., 2.7183 in epoch 3) reflected the added difficulty of generalizing from the augmented data.

DISCUSSION

The results from the three models provide insight into the effectiveness of CNNs for distinguishing between the kroje of two closely related municipalities, Vlčnov and Hluk. The models performed well overall with high accuracy across training and validation sets, but saw variations in performance related to dataset size and augmentation strategies. The model trained with 450 images per class outperformed the model trained with 300 images per class, both in accuracy and performance stability. As expected, the larger dataset allowed the model to better capture the nuances of the two towns' kroje, leading to improved generalization. The

validation accuracy for the model trained with 450 images peaked at 97.22%, while the model with 300 images peaked higher at 99.17%. However, the latter experienced greater fluctuation in validation loss, likely due to overfitting. This suggests that while the smaller dataset allowed the model to achieve high validation accuracy at certain points, the larger dataset provided more robust overall performance. Lower validation loss achieved by the model with 450 images earlier in training indicates that the additional images provided more diverse data, which helped the model better learn and generalize patterns specific to each town's kroje. This model maintained high accuracy throughout training with relatively low variation in loss. This highlights the importance of using larger datasets when dealing with classes that have subtle distinctions

Data augmentation was introduced in the third model with the goal of enhancing the model's robustness through added diversity in lighting, angles, and other variations in the dataset. While this approach did lead to competitive results, with the augmented model achieving a validation accuracy of 97.78% in epoch 4, it also introduced more fluctuations in validation loss, with some epochs showing significant peaks in loss (e.g., 2.7183 in epoch 3). This suggests that while augmentation increased the model's exposure to diverse scenarios, it also added complexity that the model struggled to handle consistently. The augmented model's fluctuations in validation loss could indicate that the model overfitted to certain transformations or variations present in the augmented data, making it more difficult to generalize across the validation set. Additionally, the complexity introduced by augmented images might have created scenarios where the differences between kroje from Vlčnov and Hluk became less clear, leading to occasional misclassifications. While augmentation can be a valuable tool in cases where data is limited, this outcome shows that it requires careful balancing to avoid increasing variance in the model's predictions.

Especially for the model trained with 300 images per class, overfitting was a concern, as this model reached 99.17% validation accuracy early on, but saw significant fluctuations in validation loss. The model with 450 images per class showed more consistent generalization, with validation loss remaining relatively stable across epochs. This further emphasizes the importance of larger datasets to prevent overfitting, especially when working with subtle differences in image features.

Overall the model trained on 450 images per class without augmentation provided the best balance of accuracy and generalization, making it the most reliable for distinguishing between the two towns' costumes. Although the model trained with augmented data demonstrated competitive accuracy, the increased complexity introduced by the augmented images may have hindered consistent performance, as seen in the wider range of validation loss.

In summary, the results demonstrate that CNNs are effective for the task of classifying similar yet distinct traditional folk costumes, with larger datasets

contributing to more reliable and consistent results. Data augmentation can enhance the model's robustness but must be applied carefully to avoid introducing unnecessary complexity that could lead to overfitting. The high accuracy and generalization achieved, especially in the best-performing model, support the potential of CNNs for the automated classification of folk costumes, aiding in the preservation of both tangible and intangible cultural heritage.

CONCLUSIONS

This study successfully applied convolutional neural networks (CNNs) to the classification of traditional women's folk costumes (kroje) from two neighboring municipalities in Moravia, Czech Republic: Vlčnov and Hluk. These kroje, which are key elements of both tangible and intangible cultural heritage, offer insights into the history, identity, economy, and social structures of their communities and regions of origin. Through the use of a dataset of 900 images, split equally between the two municipalities, the CNN model achieved high classification accuracy, demonstrating that deep learning can be a powerful tool for recognizing the subtle yet distinctive features of regional kroje. The model's best performance occurred with larger, more diverse datasets, highlighting the importance of both data volume and variety for training an accurate and robust model.

The key findings from this research highlight the efficacy of machine learning for kroje classification. My model achieved validation accuracy as high as 97.22% in certain conditions, confirming that CNNs can effectively differentiate between folk costumes with fine-grained detail. This success opens the door for using machine learning not only for further academic research, but also as a practical tool for those interested in cultural preservation.

The broader impact of this work lies in its potential to aid the preservation of Czech cultural heritage. Accurate identification of kroje is essential for maintaining the integrity of cultural knowledge and ensuring that these regional costumes are properly understood, preserved, and shared. This is particularly important for Czech diaspora communities and researchers who may not have direct access to experts or local communities. By automating the identification process, this research contributes to the prevention of misinformation and the loss of detailed knowledge about these traditional garments.

Moreover, this project highlights how modern technology can be integrated into heritage conservation efforts, providing accessible tools for identifying, documenting, and preserving cultural traditions. As interest in Czech folk culture continues to grow, the use of machine learning can support ongoing preservation efforts, ensuring that future generations remain connected to their history and identity through the proper understanding of these important cultural symbols. Future work should focus on expanding datasets to include more regions and costume types, further refining these methods to ensure their reliability, developing user-friendly applications that facilitate greater access to and understanding of Czech

folk attire worldwide, and applying similar technological tools to ethnographic regions across Central and Eastern Europe and beyond.

REFERENCES

Azhar, Ryfial, et al. “Batik image classification using sift feature extraction, bag of features and support vector machine.” *Procedia Computer Science*, vol. 72, 2015, pp. 24–30, https://doi.org/10.1016/j.procs.2015.12.101.

Bahrami, Mahdi, and Amir Albadvi. “Deep learning for identifying Iran’s cultural heritage buildings in need of conservation using image classification and grad-cam.” *Journal on Computing and Cultural Heritage*, vol. 17, no. 1, 23 Feb. 2024, pp. 1–20, https://doi.org/10.1145/3631130.

Bogatyrev, Petr. “Kroj jako znak (Funkční a strukturální pojetí v národopisu).” *Slovo a Slovesnost*, vol. 2, no. 1, 1936, pp. 43–47.

Dorozynski, M., et al. “Multi-task deep learning with incomplete training samples for the image-based prediction of variables describing silk fabrics.” *ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences*, IV-2/W6, 21 Aug. 2019, pp. 47–54, https://doi.org/10.5194/isprs-annals-iv-2-w6-47-2019.

Han, Dongmei, et al. “A new image classification method using CNN transfer learning and web data augmentation.” *Expert Systems with Applications*, vol. 95, Apr. 2018, pp. 43–56, https://doi.org/10.1016/j.eswa.2017.11.028.

“Hlucké Kroje (Foto: Martin Sekanina).” *Město Hluk*, 5 Dec. 2016, www.mestohluk.cz/kultura/tradice-a-remesla/hlucky-kroj/hlucke-kroje-foto-martin-sekanina-470cs.html.

Jeřábková, Alena, editor. “Lidový Oděv, Jeho Charakteristické Rysy a Aspekty Jeho Studia.” *Lidová Oděvní Kultura: Příspěvky k Ikonografii, Typologii a Metodologii*, 16th ed., vol. 1, Masarykova Univerzita, Brno, Czech Republic, 2014, pp. 9–23, https://is.muni.cz/el/phil/jaro2020/ARTS012/100420474/Alena_Jerabkova_Studium_lidoveho_odevu.pdf. Accessed 29 Sept. 2024.

"Kroj z Boršic u Blatnice ." *Folklorní Akademie*, www.folklorni-akademie.cz/kroj/kroj-z-borsic-u-blatnice. Accessed 30 Aug. 2024.

"Kroj z Horního Němčí ." *Folklorní Akademie*, www.folklorni-akademie.cz/kroj/kroj-z-horniho-nemci. Accessed 30 Aug. 2024.

"Kroj z Hostějova ." *Folklorní Akademie*, www.folklorni-akademie.cz/kroj/kroj-z-hostejova. Accessed 29 Aug. 2024.

"Kroj z Kostelan Nad Moravou ." *Folklorní Akademie*, www.folklorni-akademie.cz/kroj/kroj-z-kostelan-nad-moravou. Accessed 29 Aug. 2024.

"Kroj z Uherského Ostrohu ." *Folklorní Akademie*, www.folklorni-akademie.cz/kroj/kroj-z-uherskeho-ostrohu. Accessed 30 Aug. 2024.

"Kroj z Vlčnova ." *Folklorní Akademie*, www.folklorni-akademie.cz/kroj/kroj-z-vlcnova. Accessed 29 Aug. 2024.

Rangkuti, Abdul Haris. "Content based batik image classification using wavelet transform and Fuzzy Neural Network." *Journal of Computer Science*, vol. 10, no. 4, 1 Apr. 2014, pp. 604–613, https://doi.org/10.3844/jcssp.2014.604.613.

Sanford, Doug. 11 May 2024. Embassy of the Czech Republic in Washington, D.C.

Sasithradevi, A., et al. "MONUNET: A high performance deep learning network for Kolkata Heritage Image Classification." *Heritage Science*, vol. 12, no. 1, 16 July 2024, https://doi.org/10.1186/s40494-024-01340-z.

"Text of the Convention for the Safeguarding of the Intangible Cultural Heritage." United Nations Educational, Scientific and Cultural Organization, *UNESCO Intangible Cultural Heritage*, https://ich.unesco.org/en/convention. Accessed 25 Oct. 2024.

"UNESCO - Ride of the Kings in the South-East of the Czech Republic." *UNESCO Intangible Cultural Heritage*, UNESCO, ich.unesco.org/en/RL/ride-of-the-kings-in-the-south-east-of-the-czech-republic-00564. Accessed 31 Oct. 2024.

Natural Communities: A Discussion of Intersectional Environmental Perspectives

Sami Santhanaraj

Part I: Creating Something Wild

Wilderness was created by a man in overalls. He owned a large acreage of land in the South of Oklahoma, and he was an old friend of my summer fieldwork professor. Upon my professor's request, my class was visiting his range to better understand the ecology of Oklahoma grasslands. My professor told us that this would be our hike for today, and that this strip of land was being utilized as a refuge site for native animals and plants. We drove two vans through trampled grass and stalled into a forest clearing, where the man was standing in his worn-out overalls and wife-beater. “I’d like to give the kids a tour of the land, if that’s okay,” he asked my professor before leading us into the woods. The air was thick with heat and the tall grasses were painted in butterflies. The land looked virtually untouched except for footprints tattooed into the dirt and shot-down branches strewed across the ground. The man in overalls turned to us and asked if any of us liked to hunt.

The tour stopped in front of a staggeringly large tree. I had to crane my neck and shade my eyes from the sun just to see their crown. The bark of the tree was nailed with wooden planks leading up to a tall chair tied around their waist. The man with overalls explained that it was a place where hunters could sit and get a clearer view of the game. My class took turns clamoring to the top of the chair, but I stood back. Something about the man in overalls made me sick. As my friends sat at the top of the chair, their chests puffed up as they stared at the now naked sky. The people down below whooped and hollered to them, congratulating them for dominating the terrain. Watching their hiking boots scratch against the skin of the tree, I became painfully aware of how quiet the woods felt. There was no swarming of bugs or chattering of birds, all I could hear was the menacing whoops and cheers and creaking of the chair in the tree.

We had driven to the land under the pretense of reciprocity. That we were visiting the homes of our other than human kin. However, as we watched the man in overalls explain the importance of hunting in protecting the carrying capacity of deer, all I could envision was the tearing of flesh and tendon. I wondered if in their dying moments, the deer would be consoled knowing the carrying capacity was being restored. In that moment, I realized that the relationship between ourselves and the land had become a hierarchy, with ourselves at the top surveying the land through the eyes of God. We had created a needless separation between ourselves and the land through the chair in the tree. We had created wilderness.

The western creation of wilderness is rooted in Christian themes and colonialist ideals. This is best exemplified by William Cronon in his paper, “The Trouble with Wilderness

Or, Getting Back to the Wrong Nature." In this text, Cronon discusses how wilderness is a social construct, an artificially man-made concept based on specific cultural norms (1996). It seems counterintuitive at first. How can something as real and permanent as trees and rocks be something socially constructed? How can we create something that's been around for longer than we have? But while nature itself isn't inherently artificial, the way we interact with it and our relationships to it are constructed. Moreover, the way we define what wilderness is has changed throughout history.

In western society, wilderness was first created through forced removal of entire civilizations, to create "uninhabited, virgin" land (Cronon, 1996). Native American nations were violently removed from their homes. Their cultures were stripped from them, and they were forcibly assimilated to Christian doctrines and European ways of life. Arrays of Indigenous knowledge were suppressed from nations, and Native connections to the land were, and continue to be, erased. Entire civilizations were reduced down to "wild landscapes" that needed to be tamed by industrious pioneers. The decades that would follow would be known as the "The Wild West," an era defined by gun-slinging, horse riding cowboys bending a harsh, yet malleable terrain to their whim (Cronon, 1996). This was the first invention of wilderness: the false naming of already cultivated land as something inhuman, as something completely barren. This false depiction of virgin land erected a boundary line between nature and humans. Wilderness was created by framing existing natural spaces through a White, European and colonialist lens, as opposed to actually seeing how the land was cultivated and connected to for millenia. Wilderness is created when nature isn't seen.

Western wilderness continued to be created through the fetishization of nature, the act of objectifying, even idolizing nature as "pristine" and "holy" with the intent of conquering it.

Wilderness is the intersection between reverence for land and our own dominance over it. Cronon exemplifies this through his discussion of William Wordsworth, Henry Davd Throreau, and other literary romanticists and naturalists. After climbing Mount Katahdin in 1846, Thoreau described the mountain with religious fervor, calling it a work of the divine and a "symbol of God's presence on earth" (Cronon, 1996). Although, Thoreaus's characterization of Mount Katahdin is rooted in his own respect for the natural world, Cronon argues that defining physical beings through religious symbolism further divides ourselves with the land. Natural places are no longer spaces of belonging, but far away stretches of mystical earth where one can escape to. Not only does this invalidate innate, meaningful connections to land but it devalues connections to local natural communities. It's as though nature is only valuable if it is beautiful and exotic. The thicket of weeds growing in the parking lot or the wildflowers growing between sidewalk cracks aren't faraway or mysterious, and thus aren't wild or worthy of our adoration. Wilderness is created when nature is not here.

In *Wisdom Sits in Places: Landscape and Language Among the Western Apache,* Keith Basso explains that how individuals describe and name land is more of a reflection of the individual's beliefs and interpretations than reflections on the land itself. Basso explains that descriptions of places are rooted in individual and cultural perspectives, explaining that when people name or characterize land, they're simply stating "how, in the fullest sense, they know themselves to occupy it" (2001). Therefore, if individuals *perceive* land to be unfamiliar and foreign, the land will be named "wild." Therefore, wilderness is defined by the dominating culture of the time, which in western society is White, Christian, and male perspectives. However, this interpretation isn't historically or culturally accurate, as even seemingly untouched land in North America has been cultivated by Native American nations, who share an ancestral, reciprocal connection to the land. Western perceptions of wilderness erase Indigenous marks on the land, as well as invalidate their belonging to the land and continued existence.

Western constructions of nature live in direct opposition to Traditional Ecological Knowledge (TEK). Many Native American knowledges are centered around deep ancestral connections to the land. Instead of the earth being divided into wildscapes needing to be tamed or lived alongside of, the earth is alive and is capable of reciprocity. In the book *Earthkeeper*, Kiowa writer N. Scott Momoday writes that humans must "revere the earth, for it is our well-being" (2020). While Momoday displays affection and reverence for the earth in similar ways to Thoreau, his sentiments differ as he admires the land as a living being as opposed to viewing the land as a creation. This is exemplified in the "Dust" section of *Earthkeeper,* in which Momoday states that "the earth is alive, and it is possessed of spirit" (2020). When Momoday argues for more effective stewardship of the land, he does so in acknowledgement that the land has already been provided for us, emphasizing the themes of reciprocity and kinship between humans and land. Because indigenous knowledge centers the earth as a living being, as opposed to simply a place, reverence and respect can be given wholly regardless of location. The entirety of the earth is sacred and interconnected with humans, removing the need to distinguish places as "wild" as it is all earth.

Part II: Mother Nature in Heels

I tried to buy nature in Branson, Missouri. I was going on a trip with a group of friends, but before we left for Missouri, we stayed at one of their homes: a ranch in Siloam Springs, Arkansas. The night before leaving, we stood out on their deck, and watched the sunset. As the sun fell and bled into reds and oranges, the pasture became dotted with fireflies. As the sky darkened, blades of grass lit up in soft spheres of green and yellow. I had never seen fireflies before, except in the cartoons I watched as a child. I had never realized how otherworldly they looked, like stars had fallen from the sky and shattered upon the grass. I felt my eyes burn and tightness swell up in the back of my throat. Something about the fireflies felt sacred to me. I

didn't earn the right to see them, but here there were, giving themselves up like a gift. I wasn't used to getting gifts from fireflies.

As we drove into Branson, we were met with sickly shades of neon pinks and oranges and fountains the color of energy drinks. We saw foam volcanos, roller-coasters carved into the sides of mountains, and passed by a gun store every ten minutes. I would not receive any gifts from nature here, so I decided I would buy one from her instead. I looked for nature in the shops and antique stores. We walked into stores selling cowboy hats and belt buckles larger than my face. We walked into stores with stuffed deer heads on the wall and geese hanging from the ceiling.

I eventually found nature outside a cream colored auditorium after spending nearly eighty dollars to see a horse riding show. I saw her as we got out of my friend's car and joined the crowd of people outside the stables. She had a chain around her nose tying her to the stable post. Her eyes were big and watery, and she stood hauntingly still. There was a sign on the door asking guests not to touch her, but people still did. There was a sea of hands from all directions touching her, as the base of her head hung low, flush against the corner of her stall. "Maybe they're all just tired from performing," one of us suggested as we stared at the opaque ghosts, but a part of me knew that wasn't true. I wanted to buy nature and here she was. Exploited, depleted, and mine.

The term ecofeminism was coined by French activist Françoise d'Eaubonne in the 70's (Ranc). Ecofeminism is a form of environmental justice, which argues that both nature and women are discriminated against in similar ways: fetishized, objectified, and commodified. They are both robbed of their own agencies by being deemed worthy solely for their aesthetic value. Therefore, promoting environmental justice means advocating for feminine justice, as the two are intrinsically linked. Since the creation of ecofeminism, feminist scholars have critiqued western environmentalism for its male centric objectives and methods of inquiry.

In "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective," Donna Harraway refutes the concept of objectivity, arguing that all science is rooted in an observer's knowledges and perspectives, which she names "situated knowledges" (1988). As Harraway examines throughout the paper, there's a false sense of pride in western sciences that observers are maintaining pure objectivity through unbiased experimentation. Harraway refers to this as the "God trick," or the false pretense that scientists have no identity of their own and are able to maintain pure objectivity, in a similar way to God's omnipotence and practiced disinterest (Harraway, 1988). Harraway argues that the God trick is impossible to actually implement, as a person's knowledge, no matter how impartial on the surface, will always be rooted in their identity and perspective. This specifically influences western environmentalism, as historically, environmental sciences have been influenced by men. Scientific questions that are deemed important in research and academia are decided by men. Historically, feminine perspectives have been ignored in scientific research, and their inclusions have been

erased throughout environmentalist spaces. Much of this feminine erasure has been justified under the guise of objectivity. It's argued that hard sciences are based on facts and therefore are not capable of including perspectives at all, much less feminine perspectives. Harraway argues that science shouldn't be based on "objectivity vs biased thinking." Instead, multiple cultures, societies, and identities, demonstrate their own knowledges and these knowledges can all be simultaneously true within academia, as "the objective and the visionary hover close together" (Harraway, 1988).

As Harraway argues, the goal of science and environmentalism shouldn't be to create a sanitized unbiased interpretation of the world, but to celebrate diverse perspectives to create multiple truths. This sentiment is echoed by Sandra Harding in her book, *The Science Question in Feminism.* Harding introduces the argument of "feminist standpoint theory," which emphasizes that feminist, diverse, and other marginalized perspectives are more effective in producing accurate scientific analyses (1986). This is because individuals from marginalized backgrounds, such as women, are more practiced in examining multiple perspectives other than their own. Because of this, women are more adept in analyzing the nuances of different situations, allowing for more effective scientific inquiry (Harding, 1986). This is the result of years of being forced to interpret findings from masculine perspectives even though these perspectives contrasted with their own. For Harding, feminist perspectives shouldn't simply be accepted in academia, but championed as these perspectives are more conducible for accurate observations.

If nature is a woman, she is my mother, tired and worn. Her clothes stained with oil and steam rolling down her tawny skin. Her nails are shortened, practical, the tips of her fingers are yellow from turmeric. She's strong from carrying pots burbling with broth, and the bottoms of her feet are hardened from hours spent standing in the kitchen. Nature is my mother, elegant and beautiful. She dots hyaluronic acid on her cheeks, and lines her eyes in charcoal black, the same way as she did in the old pictures from her in college. Nature is my mother, giving herself wholly and entirely and at the detriment to herself.

In feminist perspectives, nature is reciprocal, giving gifts and receiving them in return. Potawatomi botanist and naturalist, Robin Wall Kimmerer explains this in *Braiding Sweetgrass*, where she narrates her experience of walking past a field of strawberries. She notices how the bushes are ripe with fruit and writes that she envisions the berries as a gift from the plant (Kimmerer, 2020). Kimmerer argues that human-nature relationships should be more reciprocal as opposed to transactional, writing "if all the world is a commodity, how poor we grow. When all the world is a gift in motion, how wealthy we become" (Kimmerer, 2020). Kimmere's innate kinship with nature and the gifts she receives from nature is not only a tenant of her Potawatomi identity, but her identity as a woman. She states that nature and many women share motherhood, with both serving as providers and givers. This alliance of mothers demonstrates kinship between nature and women.

Even women who aren't mothers share this socialized pressure of being expected to be nurturing to their communities. This creates a sense of deeper understanding between women and nature, as both are expected to give selflessly and endlessly with no time for reprieve.

In historically masculine perspectives, nature is a commodity. She is a mother who provides for us. She is a string of vegetation, meat, and water to sustain us. She is a plot of empty land for us to build skyscrapers and shopping centers. Leila Philip exemplifies this in *Beaverland: How One Weird Rodent Made America*, where she explains the history of fur trapping, which is a predominantly male industry and based on the fetishization and commodification of animals. Philip describes her time with a fur trapper named Herb, who shows her the process of trapping and skinning beaver into pelts. Throughout the book, she illustrates the outings she took with Herb, as they waded into dense beaver ponds to check traps and drove through marshes to observe the abundance of beavers. During one of these outings, Herb explains to Philip how beavers run oil through their coat as a means of waterproofing them. As he explains this to her, he seems in awe of the beavers, exclaiming that "beavers are such incredible animals," (Philip, 2024). Herb demonstrates a contrast between almost sacred reverence for the beaver, while taking pride in hunting and skinning them. Trappers often describe a sacred connection between them and the animal they're hunting. Philip even demonstrates this feeling herself, when Herb shows her how to skin a beaver. After skinning the beaver, Philip felt a sacred connection to the dead beaver, stating that she "was overwhelmed by a confusing wave of emotions and felt such a rush of connection to the beaver" (2024).

This duality between adoration and merciless dominance, is analogous to the way women are ogled and adored while simultaneously objectified and degraded. Moreover environmental and feminine mistreatment are often justified by patriarchal cultural norms and male-perpetuated pseudoscientific claims. According to Philip, fur trappers like Herb believe that beavers and other animals aren't capable of feeling emotion and thus trapping them is justified (2024). Likewise, women have been historically viewed as "innately inferior" and biologically hardwired for homemaking, which falsely justifies their objectification and lack of human rights.

While ecofeminism has been extremely vital in promoting feminist perspectives in environmentalism, it has historically focused on the White, upper class women and neglected the experiences of women from intersectional backgrounds. Intersectionality, which was coined by Black, feminist scholar Kimberlé Crenshaw in the late 80's, is the idea that different facets of a person's identity work in tandem to impact how a person is discriminated against (2019). In intersectional thinking, an individual isn't just their race, gender, or class, but an amalgamation of every label they occupy. While historic ecofeminism focuses on how white women connect to nature, it doesn't portray how queer, POC, and disabled women view themselves in environmentalism.

Environmental activist, Leah Thomas, discusses the lack of intersectionality in ecofeminism in her book, *The Intersectional Environmentalist*, in which she shares the perspectives of marginalized women and how their intersectional identities relate to environmentalism. Thomas argues that environmental advocacy is a privilege held by many white people who don't face other means of oppression and are otherwise protected to protest. Despite fighting alongside her white peers in environmental protests, which was specifically dangerous for her as a black woman, her peers were nowhere to be found during Black Lives Matter protests (Thomas, 2022). Thomas describes this lack of reciprocal allyship as a disservice to environmentalism, as environmental justice cannot be met until humans, who are also part of the environment, are safe and protected. This doesn't mean that human rights should be prioritized over environmental rights but that these rights are all one and the same as "the same systems of oppression that oppress people also oppress and degrade the planet" (Thomas, 2022). By combining ecofeminism with intersectional environmentalism, greater advocacy can be done on behalf of feminist, queer, POC, disabled, and other marginalized communities. This allows for not just better protection of these identities, but better protection of the environment.

Part III: Childishness of Animacy

My June was spent spread out in a lawn chair. I would go out in the mornings and read until the weather became too hot. I'd listen to birds chittering in trees, and watch bugs wading through dew drops. The leaves of the trees shimmered like windchimes as their crowns stretched towards the sun. I'd sit out there for hours, getting lost in the push and pull between the *outsideness* of my backyard and the inherent *insideness* of myself: pajamas and flip-flops on and a MacBook Air perched in my lap. I wouldn't notice the weather had even changed from warm to unbearable until my vision became blurry and the rattle of cicadas became incessant. I'd sit inside until sunset, and then I would spread back out onto the lawn chair, this time without my laptop, and just stare at the sky. I watched clouds: big puffy ones that merged and split through the sky and almost transparent streaks of white painted on with a dry brush.

At night, I would go outside with my mom and look at the stars. One night, as we watched the big dipper, my mom told me that when she was younger, she was taught never to fall asleep under a tree because trees exhale at night and release carbon dioxide. This was confirmed later, when I learned that trees stop photosynthesis at night and switch to taking in oxygen through their roots and releasing carbon dioxide (although not nearly enough carbon dioxide to be dangerous). Later still, I would learn that trees and other plants sleep by sagging their branches at night, produce melatonin to reduce oxidative stress, and even possess all five senses (Ratner, 2019). I began to watch trees more intently, and felt more aware

of them as beings with agency as opposed to mechanistic systems of roots and leaves. The more research I did, the more human trees became and the more *tree* I felt.

In western cultures, there's a stark difference in how we classify animals and plants. Animals have agency, sentience, and behavior while plants and other non-animals are physical systems, inanimate and unfeeling. However, in many Indigenous and other non-western cultures, plants and other non-animals are ascribed personhood and are given the same rights as humans. For example, in Ojibwe beliefs persons are defined as "wilful beings who gain meaning and power from their interactions" (Harvey, 2005). This definition of persons includes plants and other non-animals as being characterized as people. Ojibwe beliefs also place greater emphasis on relatedness when defining personhood. In Ojibwe knowledge, relationships are based on ontological similarities (ie. being a mother, father, son, etc) as opposed to blood or species relationships. For example, Harvey explains that in Ojibwe cultures, groups of beings are connected as being "grandfathers" or "sisters" regardless of species and are thus more connected than members of the same species or blood relatives (2005).

Differing definitions of personhood also have legal ramifications as they relate to agency and who should be given legal protections. Māori nations practice a broader definition of personhood to include certain rivers, lakes, and forests (Gordon, 2017). A Māori nation, or iwi, along the Whanganui River in New Zealand feel a sacred connection to the Whanganui River and know that them and the river are "one and the same" (White, 2018). As a result they advocated to the New Zealand government to grant personhood to the river both as a means of recognizing Māori ways of knowing and to better protect the river themself. The Whanganui River was eventually granted personhood in March of 2017, becoming the first river in the world to be legally considered a person (Gordon, 2017). This occurred only a few years after Te Urewera, a forest in the North Island of New Zealand, was granted legal personhood in 2014 as a means of reflecting Māori knowledge and protecting the forest. Te Urewera was the first ecosystem in the world to be granted personhood (Gordon, 2017).

Alternative definitions of persons are also evident in entire governments. For example, Bolivia initiated the "Universal Declaration of the Rights of Mother Earth," a government document describing Mother Earth as "a living being with rights, including the right to live, exist, regenerate, and be protected and respected" (White, 2018). Moreover, in Ecuador, the government views nature, referred to as "Pachamama," as a living system with rights that must be upheld (White, 2018). In light of policies that promote personhood of places, many environmentalists in the United States have advocated for an "extension of personhood," to be granted for endangered natural spaces such as the Colorado River. Environmental groups have also worked alongside local governments to form legislature to better protect the rights of land, such as the work of the Tamaqua board and Community Environmental Legal Defense Fund in Pennsylvania to prevent toxic waste dumping

in the community (Gordon, 2017). However, advocacy in the United States to extend personhood and its subsequent rights to natural spaces have been largely unsuccessful as animistic beliefs and extensions of personhood are deemed "anthropomorphic."

In the book *Animism Respecting the Living World,* Graham Harvey discusses the historical dismissal of animistic beliefs. Animism, the belief that all living beings contain life and spirit, was first "debunked" in the 1800's by Edward Tylor, who is now regarded as the "father of anthropology" (Harvey, 2005). Tylor argued that animistic perceptions of beings are merely projections of what people want to see in their surroundings, referring to these perceptions as childish (Harvey, 2005). The connection between immaturity and animism is common throughout western science as a whole. Psychologist, Jean Piaget, stated that children are naturally animistic until they develop a "correct understanding" of the world. Anthropologist, Steward Guthrie, asserted that animism was incorrect but natural in children (Harvey, 2005).

Even as scientific studies are published, showing that the world is much more alive and animate than western science previously asserted, these studies have been criticized for being fanciful and anthropomorphizing. For example, forrester and ecologist, Dr. Suzanne Simard, conducted numerous studies demonstrating that trees communicate with one another underground. They do this by sending chemicals through their roots and into webs of fungi that then spread these chemical messages to other trees, which is known as the mycorrhizal network (Simard, 2022). She later found that trees use these networks to send nutrients to depleted trees, and that plants send volatile chemicals in the air when they are being attacked, which neighboring plants receive and then use to increase their own defense mechanisms in response (Simard, 2022). However, one of the main findings of Simard's work was her discovery of "Mother Trees," specifically the idea that trees not only are able to detect their own kin but preferentially send nutrients and defense mechanisms to these kin (2022). Despite her numerous peer reviewed publications, Simard's work was met with heavy criticism from the forestry industry. While Simard attributes much of her dismissal to misogyny, she began her career as one of the only female foresters in the male dominated industry, Simard also cites her rejection to promotion of plant sentience, with forestry policy makers comparing her research studies to fairytales (2022).

Animist beliefs are common within neurodiverse and other disabled spaces. As Martínez Benedí writes in "A Different Side of the Story: On Neurodiversity and Trees," many neurodiverse individuals have heightened sensory experiences and greater attention to detail, which makes them better equipped at identifying animacy in non-human beings (2020). This is exemplified by queer, non-speaking autistic scholar, David James Savarse, who writes "autism sucks, but I see things you don't see" (Martínez Benedí, 2020). Neurodivergent and other disabled people generally hold deeper connections to nature due as nature doesn't adhere to human-social norms, so disabled people feel fully accepted by nature (Martínez Benedí, 2020).

Many disabled individuals may feel deeper ties to nature as they are better able to empathize with the lack of agency that nature is given. Similar to ecofeminism, disabled people and the environment are both discriminated against by systems of power, who see them as inferior due to their inability to comply to non-disabled societal expectations.

Disabled people are more exposed to environmental catastrophes due to lack of social welfare and systemic poverty, which causes them to live in less environmentally protected areas. In "Eco-Ableism in the Environmental Justice Movement," Clare Pledl explains that disabled people were disproportionately affected by Hurricane Katrina. This was do to a variety of reasons: shelters didn't include wheelchair accessible entrances, many disabled people were less able to evacuate prior to the storm due to decreased mobility, some disabled people had a greater reliance on electricity for medical devices and thus power outages were more detrimental to them, and evacuation guidance was not provided for visual and hearing impaired people.

Eco-ableism causes the opinions of disabled environmental scholars to be largely silenced or patronized, as western scholars often view disabled people as uneducated and incapable. For example, animism is deemed "childish and naive," which are traits that are often pejoratively linked to disabled communities. Moreover, disabled connections to nature are seen as deviations from the typical non-disabled environmental experience. To combat this, disabled environmentalists like Saverse have argued for a "neurocosompolitan approach" to environmentalism (Martínez Benedí, 2020). This approach argues that neurological and physical differences shouldn't be deemed as a variation from a norm, but that all identities, disabled and nondisabled, are equal to one another (Martínez Benedí, 2020). Disabilities aren't abnormal because "normal" does not even exist. The neurocosmopolitan approach to environmentalism breaks down the hierarchy of ability by championing disabled-enviornmental connections rooted in deep sensory experiences, kinship, animacy, and irregard for societal norms. This returns agency back to disabled communities, as their knowledge and natural connections are no longer patronized as the childish stuff of fairy tales, but deep intrinsic ways of knowing.

Part IV: Queerness of the Mythic

I hide my masculinity in the dresser of my childhood bedroom. When I yearn to feel whole, I suck in all the air from my chest and squeeze myself into it. The white nylon fabric scratches my skin and the compression of it nearly makes me faint. It feels like I've been strung up by my feet and all the pressure went down to my head. After I put it on, I run my hands across the fabric and look down at myself. My chest is flattened and is now in line with my stomach. The binder feels like a transformation. A mythic conversion from female to male. All of being transgender feels mythical in a way. I was born within the confines of someone else. It was as if

I was given the memories of a little girl and was forced to live with her skin stretched taught over my soul. A frighteningly realistic costume that I didn't realize I was wearing.

Recently I spoke to my doctor about starting hormone replacement theory. When I told her about my gender dysphoria and how I wanted a body that reflected who I was, she gave me a blank stare. She told me to be careful because we don't know the long term effects of testosterone. She said she knew people who went on testosterone but then regretted their decision and were unable to "switch back." She made my medical transition seem like an unnecessary risk. I would be shooting myself up with experimental chemicals and radically altering my body. I'd rip through my existing flesh to become something unrecognizable. It felt strange that she was framing my transition as unnatural. What could be more unnatural than living inside a stranger?

Queer ecology is the term for queer environmental activism and is based on the idea that queerness and the environment are intrinsically connected ("Sustained Kitchen," 2021). Queer ecologies break down the dualism between "man" and "nature" by demonstrating how the two are fluid and similar, with both demonstrating romance, identity, and culture, both through a lens of queerness. Queer ecologists argue that LGBTQ+ identities are completely natural as they exist in the environment. In the first chapter of Q*ueer Ecologies Sex, Nature, Politics, Desire* entitled "Eluding capture: the Science, culture and pleasure of "Queer" animals," queer ecologist, Stacy Alaimo, provides numerous examples of queer identities in nature, stating that "homosexuality has been observed in most vertebrate groups, and also from insects, spiders, crustaceans, octopi and parasitic worms" (2010). Moreover, several species of birds such as albatrosses and swans have same-sex partners for life, with many of them adopting abandoned eggs to raise as their own ("Sustained Kitchen," 2021).

However, despite the documented existence of queerness in nature, western scientists frame these experiences as unnatural by referring to same sex relationships as "aggressive," "violent," or "abnormal." After observing two wild male rams mating, biologist Valerius Geist described the act as "aggrosexual behavior," arguing that the rams were displaying intimidation and aggression (Alaimo, 2010). According to Geist, these rams weren't involved in an intimate act at all and therefore could not be considered queer. Alaimo cites *Primate Sexuality*, in which Alan Dixon argues that same-sex acts among primates may simply be a means of communication, stating that "patterns normally associated with sex are sometimes incorporated into the nonsexual sphere of social communications" (2010). These instances of framing environmental queerness as unnatural and erasing the intimate nature from them is known as forcing natural queerness into a "Zoological Closet" (Alaimo, 2010). However, western science justifies this demeaning language of queer nature by arguing that they're simply avoiding anthropomorphizing animals. However, Stacy Alaimo argues that recognizing queerness in nature isn't

anthropocentric as science is historically heteronormative, stating that it's "highly unlikely given the pervasive heteronormativity not only in science, but in the wider culture" (2010).

Ecospirituality is defined as a group of religious practices and customs that center nature and our connections to it as sacred and spiritual. Ecospirituality incorporates numerous cultures and religious practices, such as Indigenous knowledges and the practice of animism. Critics of traditional ecospirituality have argued that connections to nature should be rational and secular, and have developed a new cosmology commonly referred to as "New Genesis" or "The Epic of Evolution" (Sideris, 2015). The Epic of Evolution is a secular cosmology that argues that spiritual-like pleasure should be derived from secular knowledge of nature. Instead of relying on indigenous or other cultural knowledges to understand the environment, people should develop a universal truth of the structure of nature. For example, biologist, Richard Dawkins, argues that instead of viewing a rainbow as mystical and symbolic natural phenomenon, rainbows should be dissected as scientific illusions and appreciated as a mechanistic process (Sideris, 2015).

Lisa Sideris argues in "Science as Sacred Myth? Eco Spirituality in the Anthropocene Age," that secular cosmology of the environment dismisses diverse cultural traditions and religions (2015). By arguing for a monolithic belief in the universe, or "consilience," The Epic of Evolution promotes the superiority of western science under the guise of accuracy. This sense of superiority is exemplified in Ursula Goodenough's statement that The Epic of Evolution "is the story, the one story, that has the potential to unite us, because it happens to be true" as well as philosopher, Loyal Rue, and Goodenough's statement that "one world calls for one story" (Sideris, 2015). Statements like this negate not only the value and legitimacy of cultural traditions but also the inherent biases and inaccuracies within western science.

Sideris argues that The Epic of Evolution is not simply deference to accuracy as its proponents claim but rather deference to the *institution* of science. Instead of expressing awe and wonder to the natural world, The Epic of Evolution is rooted in revering scientific discoveries and methods as totally accurate and unbiased. Secular cosmology paints western science as infallible, and spiritual beliefs as delusional, with Richard Dawkins criticizing the validity of ecospirituality by asking "why attach ourselves to this world of illusion?" (Sideris, 2015). This erases the inherent White, male biases in science, and argues that all our environmental problems can be solved with a purely secular way of thinking. Scholars have argued against total secularism, such as Lynn White who states that he "personally doubt that disastrous ecologic backlash can be avoided simply by applying to our: problems more science and more technology" (1967). Instead, White argues that since the bulk of environmental degradation is due to veneration of Christianity, we need an equally spiritual lens to solve environmental catastrophe (1967).

Ecospirituality often criticizes western science for erasing spiritual constructions of nature, which simultaneously erases indigenous and other non-white perspectives. Specifically, ecofeminist Sandra Harding stated that "western scientists refuse to recognize the reliability and value of Indigenous knowledge" due its spiritual nature, which causes western science to view Indigenous knowledges as "unreliable." Harding later states that in her own work, she's found that despite this erasure, indigenous knowledges are "often very reliable" (Flores, 2013). Conversely to secular constructions of nature, traditional conspirituality doesn't rely on universal truths. Instead spiritual connections to nature can vary based on culture and identity. Likewise, ecospiritual beliefs aren't universal, as many beliefs and knowledges are specific to a certain regional environment and time.

In *The World We Used to Live In: Remembering the Powers of the Medicine Men* Standing Rock Sioux writer and theologian, Vine Deloria Jr, criticizes western science for negating the value of spiritual knowledge. In his discussion of interspecies communication, Deloria discusses how different animals have communicated advice and warnings to hunters, describing the experiences of Black Elk (Oglala Sioux) and White Bull (Minneconjou Sioux), who both communicated with animals during blizzards (2016). Deloria explains that many psychologists believed that these communications were merely instances of a human's subconscious survival instincts providing information in the form of false communications (2016). Deloria argues that these communications couldn't be considered instances of the subconscious as they included empirical data about time and space, citing the example of Black Elk, in which a coyote correctly told him where to find Buffalo and two other people stranded out in the blizzard (2016). Deloria also criticized western demysticism as a whole, stating that "we should beware when a thinker describes something as 'merely.'" (2016).

Perspectives of nature are rooted in identity, culture, and ability. Historically, environmentalism has been viewed through a lens of masculinity, whiteness, and normality, which forced the rest of society to twist themselves into their image. Not only is this a disservice to marginalized communities, but it is also a disservice to nature. By viewing nature from a solely western perspective, nature is erased of their animism and agency. Nature is no longer woman, ethnic, disabled, or queer, but an object to be studied. Nature is robbed of their identity and their ability to be seen because if nature cannot be seen through a lens of equity, then it cannot be seen at all. Because marginalized communities see their own discrimination reflected in the discrimination of nature, they base their relationships to nature on an existing connection. While diverse perspectives of nature vary greatly from one another they are all connected in this idea of reciprocity. They learn from each other and work to heal one another, and the activism becomes mutual. That's what environmental activism should be: a means of communal healing for everyone on the planet.

References

Alaimo, S. (2010). In C. Mortimer-Sandilands & B. Erickson (Eds.), Queer Ecologies: Sex, nature, politics, desire (pp. 51–72). Indiana University Press.
Basso, K. H. (2001). Wisdom sits in places: Landscape and language among the western Apache. University of New Mexico Press.
Cronon, W. (1996). The trouble with wilderness: Or, getting back to the wrong nature. Environmental History, 1(1), 7–28. https://doi.org/10.2307/3985059
Crenshaw, K. (2019). The marginalization of Harriet's daughters: Perpetual crisis, misdirected blame, and the enduring urgency of intersectionality. Kalfou A Journal of Comparative and Relational Ethnic Studies, 6(1), 7–23. https://doi.org/10.15367/kf.v6i1.226
Deloria, V., Jr. (2016). The world we used to live in: Remembering the powers of the medicine men. Fulcrum Publishing.
Flores, N. M. (2013, July 19). Beyond the "secularism tic" - an interview with feminist philosopher Sandra Harding. Ms. Magazine. https://msmagazine.com/2013/07/19/beyond-the-secularism-tick-an-interview-with-feminist-philosopher-sandra-harding/
Gordon, G. (2017). Environmental personhood. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.2935007
Haraway, D. (1988). Situated knowledges: The science question in feminism and the privilege of partial perspective. Feminist Studies: FS, 14(3), 575. https://doi.org/10.2307/3178066
Harding, S. (1986). The Science Question in Feminism. Cornell University Press.
Harvey, G. (2005). Animism: Respecting the living world. Columbia University Press.
Kimmerer, R. W. (2020). Braiding sweetgrass: Indigenous wisdom, scientific knowledge and the teachings of plants. Milkweed Editions.
Martínez Benedí, P. (2020). A different side of the story: On neurodiversity and trees. Iperstoria Journal of American and English Studies . https://doi.org/10.13136/2281-4582/2020.I16.904
Momaday, N. S. (2020). Earth keeper: Reflections on the American land. HarperCollins.
Philip, L. (2024). Beaverland: How one weird rodent made America. Twelve.
Pledl, C. (2021). Eco-ableism in the environmental justice movement. Vermont Journal of Environmental Law, 23(1), 1–27. https://www.jstor.org/stable/27097092
Ranc, A. (n.d.). Françoise d'Eaubonne and the imperfect foundation of ecofeminist thought. Green European Journal. Retrieved August 5, 2024, from https://www.greeneuropeanjournal.eu/francoise-deaubonne-and-the-imperfect-foundation-of-ecofeminist-thought/
Ratner, P. (2019, August 25). Plants have sensibilities, but are they conscious? Big Think. https://bigthink.com/life/plants-have-awareness-intelligence-scientists/
Sideris, L. H. (2015). Science as sacred myth? Ecospirituality in the anthropocene age. Journal for the Study of Religion Nature and Culture, 9(2), 136–153. https://doi.org/10.1558/jsrnc.v9i2.27259
Simard, S. (2022). Finding the mother tree: Uncovering the wisdom and intelligence of the Forest. Penguin Books.
Sustained Kitchen. (2021, June 23). Queer ecology and intersectional environmentalism —. Sustained Kitchen. https://www.sustained.kitchen/latest/2021/6/17/queer-ecology-and-intersectional-environmentalism
Thomas, L. (2022). The intersectional environmentalist: How to dismantle systems of oppression to protect people + planet. Voracious.

White, H. (2018). Indigenous peoples, the international trend toward legal personhood for nature, and the United States. American Indian Law Review, 43(1), 129–165. https://www.jstor.org/stable/26632875
White, L., Jr. (1967). The historical roots of our ecologic crisis. Science (New York, N.Y.), 155(3767), 1203–1207. https://doi.org/10.1126/science.155.3767.1203

Global Economic Relations and the Cold War: Frank O'Hara's *Lunch Poems* and Williams Burroughs' *Junky*

Randi Wright

The demands of the Cold War and American expansionism created a consumerist culture capable of sustaining indefinite capitalist growth. Institutions like the United Nations (UN), International Monetary Fund (IMF), and World Trade Organization (WTO) managed this tremendous globalization; the United States, with its economic clout, leveraged these new institutions to dominate world affairs in the post-WWII era. During the Cold War, the United States needed a clear and compelling alternative to Soviet communism. Global capitalism, championed by the US, became a key instrument in this ideological battle. The 1959 "kitchen debate" between Vice President Richard Nixon and Soviet Premier Nikita Krushchev at the American Exhibition in Moscow underscored how consumerism and material wealth became symbols of American geopolitical strength. At the exhibition, the US showcased model cars, home appliances, and mass-manufactured commodities, projecting a narrative of material superiority. Nixon highlighted this by noting that three-fourths of American families owned their homes, alongside 56 million cars, 50 million TVs, and 143 million radios (Cohen 126). He asserted that "the United States comes closest to the ideal of prosperity for all in a classless society," linking American material abundance to individual freedom (Cohen 126). This narrative was not just rhetorical; it became a pillar of American capitalism, shaping global economic structures. The institutionalization of capitalism through the Bretton Woods Conference, which established the IMF and World Bank, laid the foundation for the Washington Consensus, a framework that largely favored American interests and reinforced the US' global economic dominance.

Global capitalism internationalized commerce and required large supply chains and factories to meet total aggregate demand. To scale production, capitalists manufactured popular icons and brands that could provide the consumer with cheap, affordable products. Simultaneously, artists and intellectuals worried about the popularization of "masscult," referring to the art, television, and media of a mass-produced, post-industrial society. Frank O'Hara, the leader of the "New York School" of poets, responded to this discourse by affirming the artistic value of commodities/commodification. Throughout his *Lunch Poems,* he challenges masscult discourse and relishes in a tableau of *things.* Specifically, O'Hara enjoys international commodities and the fruit of international trade. He embraces cosmopolitanism.

However, despite this, O'Hara is deeply skeptical of the international institutions shepherding the new global economy. He criticizes diplomats, political dignitaries, and the UN, describing them as arms of American neo-imperialism. Like French communists and local wine producers during the Cold War, he mediates a distinction between cosmopolitanism and Coca-colonization–referring to the

cultural and economic influence of Coca-Cola as a symbol of Americanization globally. Leftists in France organized popular support for a national Coca-Cola ban, stating the company's imports would export American-style capitalism abroad. They asked whether "we will be *coca-colonises* [Coca-colonized]?" (Ciafone 67) O'Hara co-signs this fear that his admiration for global trade will turn into a mechanism for American colonization and an erosion of individual economic sovereignty. O'Hara's enjoyment of internationalism provides an alternative vision from the American-centric world order, instead conjuring a future that prioritizes parity and equality amongst all nations.

William Burroughs, the Beat Generation author and filmmaker, rebelled against the authority of the nation-state. His work prioritized a libertarian vision rooted in a rejection of all forms of restraint, embracing libertine ideals and an unregulated, market-driven anarcho-capitalism. He writes thick descriptions of US police power and weaponization during the war on drugs, capturing the pitfalls of a large state apparatus. Burroughs instead prefers descriptions of Mexico and Latin America, cataloguing them as anarchic hubs of drugs, sex, and freedom. Although Burroughs, like O'Hara, understands multilateralism as a ploy for American expansionism, he rejects O'Hara's alternative and instead posits a normative preference for extreme libertarianism. However, Burroughs' novels betray an unacknowledged imperialistic reliance on the US dollar and geopolitical clout to enact his libertarian fantasies. While Frank O'Hara imagines an alternative world order that deprioritizes unipolarity and entrenches a system of global parity, Burroughs rejects all internationalism but actively exploits the third world through international tourism that serves to bolster global hierarchies.

Consumerism, International Exchange, and Textural Description

Frank O'Hara's *Lunch Poems* repeatedly describes commodities in positive and artistic terms. In "The Day Lady Died," O'Hara purchases a hamburger, malt, and a copy of "NEW WORLD WRITING," a magazine copy featuring Ghanan poets (O'Hara 27). The act of purchasing art itself is a rejection of masscult anxiety, highlighting the possibility for art to be sold *and* enjoyed. The NEW WORLD WRITING brings avant-garde literature to a wider, classless audience, transcending national boundaries with mass market paperback-anthologies (Neal 790). O'Hara's mention of Ghana serves to rehearse an appreciation for international exchange and commerce, showing the value of trade and its ability to bridge cultures. He continues to relish in global cultures and foreign commodities throughout the poem. He references French artists like Paul Verlaine and Pierre Bonnard without flinching; he watches *Le Balcon* and *Les Negres*–two French plays; he drinks Italian liquor, smokes French cigarettes, and reads Greek literature (O'Hara 27). The poem unapologetically celebrates cosmopolitanism and multiculturalism.

In "A Little Travel Diary," O'Hara describes his trip to Spain. He watches German tourists sharing chorizo sandwiches and a bottle of Vichy Catalan. O'Hara

incorporates Spanish in his poem with ease, using "*y"* instead of "and." In the poem, he interpolates unitalicized French into the stanzas, normalizing it within his writing. Throughout, O'Hara is awash with different cultures and easily blends different European customs to produce an legible multicultural scene (O'Hara 44-45). This immense satisfaction for globalization is further explored in "Image of the Buddha Preaching." It describes an Indian representative speaking to Germans. The dignitary says, "Prime Minister Nehru has asked me to greet the people of / Essen / and to tell you how powerfully affected we in India / have been by Germany's philosophy, traditions and mythology." This line serves to illustrate how an increasingly interconnected world benefits from exchange. Later, the Indian dignitary begins to mix German and Indian cultural monuments in rapid succession: "Kushana Ghandada, Gupta, Hindu and Jain, Secco, Ajanta, / Villa Hügel!" The ending, a reference to Essen, Germany's famous 19th century mansion, follows Indian cultural and religious sites to symbolize a blending of traditions. The two cultures are on the same level playing field and enjoy equal significance in O'Hara's poetry (O'Hara 24).

The poem ends with O'Hara describing the friendship between Swansea, Wales and Mannheim, Germany. He says that, just like Anglo-German trade, that the Swansea-Mannheim relationship will prosper because of international trade. Frank O'Hara is most explicit in this poem, affirming international trade and the rise of global cultures. It will lead to prosperity, rather than the erosion of national sovereignty, art, or identity. It will give rise to new identities and forms. However, the Rhine, a primary international shipping lane, is subsumed by war. The "BERLIN" ship sails through the Rhine for battle, although "better schools and model cars are wanting" to be exported. The Buddha, a symbol of peace, is preaching to the Germans that an end to hostilities will enhance global trade, prosperity, and friendship (O'Hara 24-25).

Rejecting US Institutionalism and Imagining an Alternative World Order

Despite this appreciation for cosmopolitanism, O'Hara rejects the Washington Consensus that has mobilized global connectivity. In "Steps," O'Hara writes, "all those liars have left the UN building / the Seagram Building's no longer rivalled in interest / not that we need liquor (we just like it)." O'Hara describes a betrayal by globalists and a superseding Americanism that has saturated the global landscape (O'Hara 53). The Seagram Building, an artifact of the "International Style" popular in the 1920s, was the headquarters of a Canadian distiller firm. The Seagram Building is known for being an "index to the rising prosperity of the nation and the strength of American capitalist democracy" (Flowers 889). The Seagram Building also encapsulated many atomic Cold War fears, with one magazine writing that it "boast[ed] of more superlatives than the H-bomb" (Flowers 889). Such atomic anxieties are present in the building's construction, with various plans featuring nuclear shelters and aesthetic displays of corporate citizenship. Further, as

referenced in Frank O'Hara's poem, it was well known for its alcohol. Advertisers called it the "big, bronze, booze building" (Flowers 889). It was a nexus between the Cold War, American expansionist capitalism, foreign trade, and commodities (liquor). The Canadian business assumed the fashion of American Cold War patriotism while profiting off the liquidity of the era of American dominance. While we don't "need" liquor, O'Hara does say that we "like it." We don't depend on foreign trade, but we value it–which, from O'Hara's perspective, provides reason enough to appreciate capitalism (O'Hara 53). Frank O'Hara mourns its loss and scorns the "liars" at the UN who forfeited the Seagram Building's vision of an "International Style" to be a wing of American propaganda.

Frank O'Hara develops this idea further in "How to Get There." He writes:

> While the October air, no snow, easy to breathe
> beneath the sky, lies, lies everywhere writhing and grasping
> clutching and tangling, it not easy to breathe
> lies building their tendrils into dim figures (O'Hara 42).

O'Hara then references "lying political dignitaries" with "police cordons" that protect them, ringing along with this terrible "jangle" of lies. Like "Steps," this poem rejects political institutions, global entities, and dignitaries as liars. The political dignitaries' "lies and the tendrils of fog [trail] softly around [New Yorkers] throats," depriving them of the promises of globalization and international cooperation (O'Hara 42-43). The United States' Cold War ambitions undermined the remarkable intercultural exchange that flourished after WWII, replacing it with a process of Coca-colonization that diluted the benefits of genuine cosmopolitanism. This distorted attitude has not only harmed developing nations, as illustrated in this scene, but also Americans themselves as the spread of Americanism deprives them of meaningful avenues for social connection globally.

Allison Neal, in "Frank O'Hara's Voice of America," describes another encounter with the UN that O'Hara has in his poetry. In "October," he writes, "Is there at all anywhere / in this lavender sky / beside the UN Building." The UN building's shadow, extending far past Manhattan, has obscured the world and recast globalism as a shorthand for American neo-imperialism. It has corrupted cosmopolitanism. O'Hara's vision of a post-nationalism order, dictated by art and merit rather than military dominance, has been corrupted; even more, it is eroded by soft cultural imperialism, rather than WWII violence, subverting the paintings, poetry, and sculptures that O'Hara interacted with daily at the Museum of Modern Art. Now that his poetry is beside the UN building, O'Hara "orients his poetry within a world of global media, positioning it as an utopian lingua franca competing with a variety of other spoken and mediated forms of international communication" (Neal 779). He wonders, "a fragment of the paradise / we see when signing treaties / or planning free radio stations?" International treaties or free oral media are transformed into wings of American soft power, as international agreements and

radio stations like Voice of America (VOA) or Free Radio Europe (FRE), funded by Congress, became American propaganda (Neal 779). His unequivocal appreciation for consumerism is untethered from American expansionism, often seen hand-in-hand, and reimagined as a route for expanding world equality. The poets in Ghana, in "The Day Lady Died," exist equally beside Frank O'Hara, French painters, and Greek literature, representatives of Western, first-world culture.

In his interview with Lucie-Smith, Frank O'Hara rehearses a dichotomy between American art that is "domesticating" and "emphathiz[ing] outside" when interacting internationally. He says that, "Now the absorption of Lowell in the *imitations* of Pasternak, of Rilke and so on is domesticating in a certain way. That is, it's domesticating those poets into really pretty much New York-like, not even American-like." O'Hara contrasts that with the work of Allen Ginsberg, Kenneth Koch, and presumably, himself. He replies, "Whereas the attraction that, say, Ginsberg feels for Pasternak and Mayakovsky, or the attraction that Kenneth Koch feels for Tzara, Breton and Eluard…[they see] that an American has to join the other life…an ability to emphasize outside." Robert Lowell, Allen Ginsberg, and Kenneth Koch interact differently, with Lowell dominating foreign art and domesticating it with an American mode of expansionism. Ginsberg and Koch, meanwhile, "join the other life" and engage not on their "own national and cultural terms" but on the other's. O'Hara is mediating a mode of engagement that can "exist internationally," without backsliding into nationalistic habits. In the interview, O'Hara states that this produces an authentic American style open to interact with, and not just imitate, foreign artists–not using an imperialist mindset, which only conveys a "certain American bias," but an authentic willingness to empathize. Instead of persuading or replicating other cultures, it mingles with international receptivity (Neal 784-786).

This unique, authentic American style does not extract from but embraces foreignness. O'Hara fashions an American dialect that is not propaganda, but genuine, unblemished representation. In O'Hara's normative vision–unlike the UN, FRE, and VOA–art and media are not weaponized but retooled to include and uplift. He advocates for an American style of art that can merge with other cultures, like the Spanish and Germans in "A Little Travel Diary," without colonizing it. In "Poem [Khrushchev is coming on the right day]," he describes an encounter between himself and a Puerto Rican. He says:

> Khrushchev is coming on the right day!
> the cool graced light
> is pushed off the enormous glass piers by hard wind
> and everything is tossing, hurrying on up
> this country
> has everything but *politesse,* a Puerto Rican cab driver says (O'Hara 29).

Politesse, French for formal etiquette, is used by a Puerto Rican in New York to describe American diplomacy toward a Soviet. There is no English word capable of articulating the French ethos of politeness, so O'Hara uses French as a crutch to supplement his point. Later in the poem, O'Hara writes, "And Khrushchev was probably being carped at / in Washington, no *politesse."* O'Hara is using the Puerto Rican's verbiage, claiming it his own, the cab driver's remark infiltrating the poem and assuming a fluency. Authentic language has a refined ability to skip over national borders and transcend divides, interjecting itself within another language with practiced fluidity. O'Hara moves to discussing Sweden, and how an individual can have a multiplicity of authentic experiences: like Vincent and his description of his mother's tourism, Han's father living in Sweden, and Grace Hartigan's painting of Sweden. These natural, uncorrupted experiences exist outside of American interests and exist for pure pleasure. There is no cultural diplomacy or soft power politics, but uninterrupted intermingling. Washington lacks the "*politesse,"* needed to interact with the Soviet dignitary, needing not only the cultural but linguistic fluency for international peace-building. By incorporating the cab driver's remark into his poetry, O'Hara presents an authentic mode of international interaction, free from the overt influence of US political interests (O'Hara 29).

Frank O'Hara celebrates the joys of international commerce and trade's ability to end wars and bridge socio-cultural divisions. O'Hara also manifests a self-serving appreciation of commodities that exist outside of any national mandate for a war economy or soft power diplomacy, instead positing a consumerism that de-centers America. It uplifts foreign Ghanan poets or Spanish cuisine. He *empathizes* with, rather than *domesticates,* foreign art, connecting with it with unabashed receptivity and not an American neo-imperialist impulse. The UN and other political dignitaries undermine O'Hara's globalist vision by weaponizing internationalism for Cold War dominance. The Cold War signifies a cultural struggle for primacy between two polar forces; O'Hara, meanwhile, destabilizes this struggle by suggesting a third way. American capitalism can provide avenues for international parity and not American neo-colonialism. The UN and political dignitaries' great lie is that they are pursuing O'Hara's dream. This lie has strangled everyday New Yorkers and wrestles their influence into consumers, using the mass production of art, radio, and magazine to entrench US cultural supremacy. O'Hara imagines that his poetry is another voice, among many, on the global stage, projecting a popular American sentiment for cooperation and appreciation against the backdrop of cultural warfare.

William Burroughs and Dismantling the Westphalian World Order

In the 1940s and 1950s, international tourism skyrocketed in popularity as the US dollar ballooned in purchasing power. The American middle-class could wield strong financial clout relative to other buyers. They invested these real wages into

tourism and foreign commodities. The *stability* of the US dollar depended on the United States' global power and capitalist domination of world affairs (Strand 2). For the US to beat the Soviet Union ensured that the *ruble* or other nation's currency, like the Chinese *yuan*, did not undermine the dollar's hegemony. Additionally, the US dollar's strength permitted the United States to heavily invest in its GDP growth by accumulating debt that depended on the dollar's reserve status. Keynesian economics and neoliberalism ushered a US-led world order that was institutionalized in organizations like the Bretton Woods Conference. William Burroughs, a prominent, Beatnik postmodern writer, resisted nationalism and Western neo-imperialism. Through his art, Burroughs renders US cultural products as grotesque and deformed. These horrid caricatures and deconstructed figures in Burroughs' work "represent the West's failed experiments at colonizing and controlling the world through word and image" (McDaniel 134). He imagines a different world order, founded on the dissolution of the nation-states, libertarian principles, and quasi-anarchist capitalism. However, Burroughs heavily invests in American chauvinism, Western tourism, and US financial dominance in his personal life and writing; he enacts libertarian fantasies in Latin America through the dollar's financial supremacy, *extracting* from these cultures rather than imagining an equitable alternative like O'Hara.

The West's Failed Project and American Militarism

Throughout Burroughs' novel *Junky*, Burroughs criticizes and illustrates the failures of the United States. His character Bill Lee muses, "Safe in Mexico, I watched the anti-junk campaign. I read about child addicts and Senators demanding the death penalty for dope peddlers" (Burroughs 140-141). He is alarmed by the increase in anti-junk, state-sponsored campaigns that have violated Americans' rights and humanity. He wonders if the "whole child-addict set-up is a propaganda routine to stir up anti-junk sentiment and pass some new laws" (Burroughs 141). Bill Lee pushes back against Reaganistic drug warfare and old-school conservativism. He injects leftwing coded theories into the mix, musing whether the government or CIA cooked up the spectacle as a psyop to increase political legitimacy. Lee begins to offer Mexico as an alternative to US-hegemony:

"Refugee hipsters trickled down into Mexico. "Six months for needle marks under the vag-addict law in California." "Eight years for a dropper in Washington." "Two to ten for selling in New York." A group of young hipsters dropped by my place every day to smoke weed (Burroughs 141)."

Mexico has become a safe haven for America's countercultural youth and drug culture. The United States' strict drug laws and punitive sentences have spurred people south, seeking to gain a libertarian refuge from the US police-state. Additionally, Burroughs uses the word "refugee" inspiring ideas of dictators,

collapsing states, and unbridled police powers, emblematic of the 20th century America that he describes. The United States has weaponized state power to contain society, controlling one's hobbies, views, sexuality, and body to pursue Cold War unipolarity, mobilizing popular culture and the state to advance US economic and social interests. This included prosecuting drug offenders to wipe out sections of society that threatened upper-class, traditional family structures.

Burroughs also discusses how states have used the drug war to "[penalize] a state of being," writing that Louisiana's law targeting drug addicts interferes with their basic humanity (Burroughs 141). Burroughs analogizes Louisiana's drug legislation to Nazi Germany, as anti-junk rhetoric permeates the public space and resembles anti-Semitism under Nazism (Burroughs 140). The US fermented an anti-junk zeitgeist that handed it a popular mandate to surge its policing powers and exercise a bullish state apparatus. He calls anti-junk feelings a "paranoid obsession," contingent on the state's weaponizing of the masses and the use of government-funded propaganda (Burroughs 140). He writes that drug convictions have "no proof, and consequently, no trial" (Burroughs 140). The state's control of society renders trials irrelevant, as the entire gig–the public hysteria, the police roundups, and the government-funded black market–worked to mass incarcerate a large segment of society and increase US expansion.

In Allen Ginsberg's appendix in *Junky*, he writes about how police-state fuelled paranoia and drug enforcement limits free speech. Saying "tea" or "junk," even to refer to drug legislation, might get you arrested on suspicion of being a druggie (Ginsberg 183). The state essentially criminalized any manifestation of counterculturalism, controlling the extent to which people could refute the state. The US also used the media to control popular discourse. When national TV programs debated drug use, the Narcotics Bureau and FCC intruded with denouncements of the debate entirely (Ginsberg 183-184). Burroughs' work and its relationship to drugs and freedom moves beyond bodily autonomy; Burroughs is making a connection to other rights, like freedom of speech, that are jeopardized by the war on drugs. The war demands a whole-of-country approach, commissioning neighbors, co-workers, friends, and other junkies to enlist in the battle for cultural purity.

Junky itself, Ginsberg writes, had to wade through a whirlwind of disclaimers and publishing bureaucracy due to its material. He argues that the publishers' reliance on the Narcotics Bureau for information–emphasized by disclaimers that *Junky* contradicted "recognized medical authority"–was a deliberate effort by the state to assert cultural dominance (Ginsberg 183-184). He highlights the New York County Medical Association's term "war on doctors," referring to the widespread dismissal of physicians who treated addicts, as a vye for national control (Ginsberg 184). Additionally, he exposes the Narcotics Bureau's covert distribution of narcotics to maintain its bureaucratic relevance, suggesting that law enforcement, government agencies, and public opinion worked in tandem to marginalize addicts.

It created a lucrative market driven by government salaries, pensions, and blackmail (Ginsberg 184). This damning critique portrays the federal government as complicit in a self-serving cycle of exploitation. Burroughs' broader condemnation of US institutions, rooted in systemic abuse and propaganda, reveals deep connections between these domestic policies and the Cold War drive for unipolarity–abuses that, in his view, are irreconcilable with libertarian freedom.

Even Burroughs' descriptions of the American underground are sordid, offering no space for romanization or sentimentality. Lee frequently flatlines as he withdraws from junk; he has impossible cravings; experiences weed-spun spells of insanity or coke-fueled hysterias; witnesses police crackdowns that turn junky against junky, weaponizing the judicial system to imprison large sections of urban populations. Unapologetically, Burroughs penalizes the US for its culture of containment and state control. This anti-government stance extended to Burroughs' views on the welfare state. In a letter, Burroughs called the welfare state a "Trojan Horse" for socialism or communism. The United States' "Socialistic police force," he writes, undermined "the Frontier heritage of minding ones [sic] own business" center to American identity (Strand 5). He rejects US neo-imperialism, but also rejects any expansion of the state apparatus and opts for an anarchistic vision of libertarian freedom.

In *Junky*, Bill Lee travels to Mexico to escape the United States and any semblance of the law. Burroughs' view of Mexico is that it is a lawless, unrestricted place without rules or taboos. In a letter, he praises the "general atmosphere of freedom from interference that prevails [in Mexico]" (Russell 15). He longs for a past America, without its modern constraints or political expansionism. He views modern Mexico as "where the U.S. was in 1880 or so," longing for self-reliance and the indulgent "American frontier" (Russell 15). In the last chapter of *Junky*, Bill Lee encounters a Mexican politician at a bar in Mexico City. The politician asks Lee if he knows anyone that would buy an ounce of heroin. Lee then negotiates with the politician, settling on $500. While shooting up in the Mexican politician's office, Lee states that "nobody paid us any mind" as "[a]nything can happen in the office of a Mexican politician" (Burroughs 148). This scene illustrates Burroughs' thought process and attachment to Mexico as a manifestation of his libertarian fantasies. The government is a mock institution that resembles the authenticity of the United States or the West, without the actual legitimacy to enact any laws or legislation. Burroughs "rejects the totalitarian system of modern capitalism and its ideological tool, the state," creating a rich textual description that rewards anarchism, unrestricted market capitalism, and countercultural agitation (Murphy 4).

Libertarian Fantasy and Imperialistic Attachments

Bill Lee, however, depends on American financial institutions to manifest Burroughs' libertarian vision. After college, Lee grew up in the Great Depression. Without access to American economic mobility, he travels to Europe. He writes that

"U.S. dollars could buy a good percentage of the inhabitants of Austria, male or female" (Burroughs 3). He practiced escapism as a direct result of the US dollar's purchasing power. Later, when Lee starts selling morphine, Jack–a drug dealer–describes an encounter he had with a client. The client owed Jack money, so Jack came to see him while bringing a roll of nickels with him. Jack says that, "No one can hang anything on you for carrying U.S. currency" (Burroughs 10). This exchange highlights how US currency also grants leniency within the United States, allowing criminals to remain undetected. American currency is the key to navigating the drug culture and staying outside of prison. Its influence privileges Lee and Jack against foreign dealers, providing them the means to enact violence. The metaphor epitomizes Burroughs' relationship to the dollar and its ability to solve challenges caused by the government.

When Lee finally moves to Mexico, he comments how much morphine he has access to. He also comments on its cheapness, stating that it costs $30 a month whereas American morphine is around $300 a month (Burroughs 118). American drugs are ten times more, showcasing how strong the dollar is and its relative purchasing power in Mexico. In his own letters, William Burroughs frequently acknowledged the US dollar's strength in Latin America. In places like Mexico, he wrote, a "single man can live high…for $100 a month." In Ecuador, he discussed how "2 ex-soldiers" now "live like kings" after buying a large banana *hacienda* for less than $2,000 (Strand 2). Throughout Latin America, Burroughs and Lee live out libertarian fantasy with the financial might of US geopolitical clout. Burroughs fails to acknowledge how his anarchistic principles are emptied by their overt reliance on US neo-imperialism. His objections to Cold War hysteria and US neo-imperialism feel hollow when juxtaposed with his enjoyment of American expansionism.

Bill Lee acknowledges the pain his addiction causes in Latin America. A drug addict tells him that he wants to travel to Mexico. Lee replies that, "the border is pretty hot" (Burroughs 75). Lee is implying that he understands the dangers caused by his reliance on drugs and its fueling of cartel violence. When the man replies, "you look like you use some stuff," Bill Lee replies: "Sure I use" (Burroughs 75). The nonchalant, flippant tone reinforces his disregard for the results of his libertarian excursions. Later, when discussing the US-Mexico border and the "Valley" between, Lee decides to stay in Mexico.

However, William Burroughs edited this paragraph and, in the original version, added:

Travel books never give me the information I want. I am in the process of deciding whether to go to a place or not. I want to know what I can buy there with how much money, and what is the political and legal landscape (Burroughs 190).

This excerpt demonstrates Burroughs' normative evaluation of states as a metric of their lax legal structures and lower bargaining power, rather than their cultural or historical significance. He recreates US neo-imperialism systems by extracting from other countries, his vision for a libertarian utopia diminished by his outward reliance on the US and a normative attachment to domination. At *Junky's* conclusion, Bill Lee says that there is a new drug: yage. This drug, unlike coke, junk, or weed, does not have the drawbacks and negative side effects. It exists in Latin America (Burroughs 150). The book's conclusion invites the reader to predict Lee's next moves, and how he will continue to chase drugs across the south. In his personal life, Burroughs also searched for yage with Allen Ginsberg. Their international tourism results in them finding the drug and ingesting it. Ginsberg's yage trip is full of transcendental and globalizing imagery, where humanity becomes one. He rejects materialism. However, Burroughs' yage trip imagines a "Composite City" where "all human potentials were spread out in a vast silent market." It sports "unthinkable trades" and tons of alcohol (Strand 5). Burroughs' own drug-induced fantasy highlights his normative appreciation of libertarian free-market capitalism and a freedom from regulations. His drug experience in Latin America rehearses an unacknowledged dependence on US neo-imperialism, providing him the legal and financial flexibility to engage in recreational drug use abroad.

Rethinking Cold War Paradigms: Cosmopolitanism, Neo-Imperialism, and Libertarianism

The United States desired a socio-economic and geopolitical defeat of the Soviet Union. This desire permeated the American government, dictating how it operated with other nations, multilateral systems, and global institutions. Through international organizations like the World Bank and IMF, the US institutionalized capitalism and created trading relationships that privileged American consumers. At the expense of other nations, the US' economy surged in GDP growth and bargaining power. US consumerism allowed it to win the thought-war against the Soviet Union, devising an alternative to communism that had abundant commodities and goods, higher living standards, and opportunities for cheaper consumption. A rise in US economic clout led to an increasingly powerful US dollar, allowing Americans to gentrify other countries and extract domestic resources. Through international tourism, which spiked during the Cold War, Americans could retool foreign economies to finance their desired lifestyle.

Both Frank O'Hara and William Burroughs critique the United States and its desire for dominance during the Cold War. O'Hara points to the US' appropriation of multilateral organizations and weaponization of globalism as a subversion of authentic cosmopolitanism, where parity, equity, and exchange are prioritized. He prizes international trade and the uplifting of third world countries through art and commodities. O'Hara desires an international system that is not defined by uni- or bi-polarity, but multipolarity amongst all nations. His writing *emphasizes* with other

cultures, rather than *domesticating* or colonizing. Burroughs, meanwhile, criticizes not only the United States but the nation-state all together. He indicts the US for overexercising its police power and criminalizing drug addicts' humanity, forcing people to migrate south for refuge. He points to the US' marshalling of the state as an extension of its Cold War mandate, regulating its economy and culture to achieve global supremacy. Burroughs describes Mexico as an alternative to the US. Throughout *Junky,* Mexico is described as a libertarian utopia without the prejudices of militant Reaganism. However, Burroughs *domesticates* other nations by leveraging his relative purchasing power to exploit foreign cultures. Unlike O'Hara, who privileges international trade and parity, Burroughs exercises US geopolitical power against Latin American countries to practice an anarchist fantasy. O'Hara and Burroughs, despite their common negative evaluations of US supremacy during the Cold War, diverge on their normative prescriptions to remedy the pitfalls of Cold War expansionism.

Works Cited

Burroughs, William. "Junky." New York, NY: Grove Press, 1953.

Ciafone, Amanda. "Mediating Coca-Colonization: NEGOTIATING NATIONAL DEVELOPMENT AND DIFFERENCE IN COCA-COLA'S POSTWAR INTERNATIONALIZATION." *Counter-Cola: A Multinational History of the Global Corporation*, 1st ed., University of California Press, 2019, pp. 61–104. *JSTOR*, https://doi.org/10.2307/j.ctvfxv986.6.

Cohen, Lizabeth. "A Consumers' Republic: The Politics of Mass Consumption in Postwar America." New York, NY: Vintage Books, 2004.

Flowers, Benjamin. "The Seagram Building and the Bomb: Architecture, Atomic Anxiety, and the Cold War in the United States." in Judith Bing and Catherine Veikos, Eds., Fresh Air: Proceedings of the 95th ACSA Annual Meeting (Washington, DC: Association of Collegiate Schools of Architecture): 889-897.

Ginsberg, Allen. "Appendix 4: *Junkie*–An Appreciation": excerpted from a letter to Ace Books, April 12, 1952, in *Junky* (New York, NY: Grove Press), 1953.

McDaniel, Dennis. "New World Ordure: Burroughs, Globalization and the Grotesque." *Retaking the Universe: William S. Burroughs in the Age of Globalization*, edited by Davis Schneiderman and Philip Walsh, Pluto Press, 2004, pp. 132–45. *JSTOR*, https://doi.org/10.2307/j.ctt183q4j5.14.

Murphy, Timothy. "Wising Up the Marks: The Amodern William Burroughs." Berkeley, CA: University of California, Berkeley Publishing, 1997.

Neal, Allison. "Frank O'Hara's Voice of America." ELH, vol 86, no 3, Fall 2019, pp. 779-803.

O'Hara, Frank. "Lunch Poems." The Pocket Poets Series, no 19. San Francisco, CA: City Lights Books, 1964.

Russell, Jamie. "Queer Burroughs." New York, NY: Palgrave, 2001.

Strand, Eric. "The Last Frontier: Burroughs's Early Work and International Tourism." *Twentieth Century Literature*, vol. 59, no. 1, 2013, pp. 1–36. *JSTOR*, http://www.jstor.org/stable/24247109.

Extraction and Purification of OSW-1 Compounds

Grace George

Introduction and Background

In 1992, a research group from Tokyo College of Pharmacy examined the molecular structure and biology of *Ornithogalum saundersiae,* a flower also known as the African Lily, native to the African Drakensberg Mountains.[1] OSW-1 is proven to be the largest compound extracted from the African Lily upon isolation, exhibiting potent anticancer characteristics against various cancer cell lines. When tested against the National Cancer Institute's standard of growth inhibition, OSW-1 displayed a reduction of tumors and oncogene cells that was 10-100 times more potent than other common cancer treatments such as Cisplatin and Taxol.[2] Given its remarkable qualities, the following question arises: why is OSW-1 not currently an available drug in the current market?

Dr. Anthony Burgett *et al.* discovered that oxysterol-binding protein (OSBP) and protein 4-related OSBP (ORP4) are the cellular targets of OSW-1. Studies were executed to understand the mechanism of OSW-1 to its target compounds. OSBP is crucial for RNA viral replication, an important step in cancer proliferation, and OSW-1 disrupts this process by targeting OSBP. Additionally, OSBP and ORP4 are proteins that transport cholesterol that are thought to also be necessary for cancer cell proliferation.[3] The anti-viral and anti-cancer characteristics of OSW-1, along with the targeting of OSBP and ORP4, have gained attention. However, there are challenges that limit OSW-1's therapeutic development. Multiple attempts have been conducted to synthesize OSW-1 from commercially available compounds, but poor yield and long processes deem this method to be unsatisfactory. For example, synthetic processes are typically accomplished in at least 27 steps, with yields of as little as 6.4%.[4] OSW-1's selectivity between OSBP and ORP4 is also unknown. A good drug should only target one specific protein and not any other to have desired effects. Lastly, the pharmacological properties of OSW-1 make it difficult for drug administration. Poor solubility traits limit OSW-1 as it cannot be dissolved in water at all. This is an important parameter to achieve desired results of drug within the body.

---

[1] Forrest, I. (2020). *Identification and Isolation of Bioactive Natural Product Compounds Targeting Oxysterol-Binding Proteins.* [Approved master's thesis, University of Oklahoma], 5.

[2] Forrest, I. (2020). *Identification and Isolation of Bioactive Natural Product Compounds Targeting Oxysterol-Binding Proteins.* [Approved master's thesis, University of Oklahoma], 6.

[3] Forrest, I. (2020). Identification and Isolation of Bioactive Natural Product Compounds Targeting Oxysterol-Binding Proteins. [Approved master's thesis, University of Oklahoma], 9.

[4] Forrest, I. (2020). *Identification and Isolation of Bioactive Natural Product Compounds Targeting Oxysterol-Binding Proteins.* [Approved master's thesis, University of Oklahoma], 22.

To further explore how OSW-1 and OSW-1 related compounds interact with its cellular targets as well as its structural characteristics, the Burgett lab set a goal of creating a compound library, to observe the groups of OSW-1 that are important for protein binding and activity against cancer. A model of the drug, which is called the OSW-1 SAR (structure-activity relationship) Hypothetical Model, reveals the important components of OSW-1 compounds that have high-affinity binding and activity characteristics. To create the library, three classes of chemical groups are studied: Class I, II, and III. Class I possesses substitution groups in the C3 hydroxyl group and will be studied through isolation methods. Class II has de-esterified groups of acetyl and benzoate, which will undergo synthesis. Lastly, Class III has benzoate moiety branches that will also undergo the isolation process (Figure 1). These classes will contribute to the development of an OSW-1-related compound library for structure-activity relationship studies.

Methods

Extraction

The first step in extracting OSW-1 begins with the bulb processing and microwave treatment. First, we cut the African Lily Bulbs from their roots and stalks. The stalks were disposed of, while the roots were collected and frozen. The bulbs were then washed and cut into approximately 1-centimeter-sized cubes. Then 1000 grams of the bulb mass were collected into five separate cheesecloth bags and pots. The bags were then placed into five separate pots and reagent alcohol was added to cover the bags (Table 1).

During the microwave extraction, parameters were set to ensure comparable results within each pot. The microwave power was set to level 3 for all pots. The microwave extraction was carried out in 4-minute sessions with 30-second intervals to agitate and air out bulbs inside the bags. Each pot received 64 microwave treatments and after 4 treatments the solvent was changed and bottled, excluding the last 4 treatments in each pot. The pots were then sealed with parafilm each night. Periodically the pot's solvent is collected into bottles, new reagent alcohol is added to pots, and microwave extraction continues.

Partitioning

The separation of the bioactive compounds was initiated with partitioning into hexane, ethyl acetate, and butanol. After microwaving, the extract was submerged in the reagent alcohol it was microwaved in. The mixture was then concentrated in the Genevac Elite EZ-4 centrifuge evaporator to create an aqueous phase. 100 mL of Hexane was added to the solution in the mixing flask. The flask was agitated by hand before being magnetically stirred for 30 minutes. The flask contents were then transferred to a separatory funnel and gently shaken. If the solvent mixture does not

separate into two distinct layers, then brine (NaCl) is added. The cloudy bottom layer of water is drained into a bottle labeled “Aqueous Phase.” The clear top layer of Hexane is drained into a bottle labeled “Hexane Phase.” The aqueous phase was readded to the funnel with an additional 100 mL of Hexane. Another 100 mL of Hexane was added, and the process was repeated twice for a total of three times. The procedure was then repeated using Ethyl Acetate (EtOAc) in place of Hexane for a total of three times. Following the EtOAc partition, 53 mL of new Butanol was added to the solution in a mixing flask and magnetically stirred for 10 minutes. The aqueous phase was added to a separatory funnel and shaken until the distinct layer formed. The cloudy layer of water was drained into a bottle labelled “Aqueous Phase.” The clear top layer of Butanol was drained into a bottle labelled “Butanol Phase.” 53 mL of new Butanol was stirred magnetically overnight. Another 53 mL of Butanol was added, and the process was repeated twice for a total of three times. The solution was concentrated in the Genevac and only the EtOAc phase was moved forward for further extraction, while the Hexane and Butanol Phases were stored in the freezer. In Round 1, 20 grams of extract were collected. The extract was described as a viscous, orange, syrupy, resin-like material. In Rounds 2 & 3, 59.6 grams of extract were collected. In Round 4, 1.22 grams was collected, and further purification of Round 4 was halted. Prior to further purification, 300.2 grams of total extract were collected. Table 5 displays the results of the partitioning process.

Sephadex Column

The preparation of the Sephadex column involved soaking 69 grams of LH-20 in a 1:1 mixture of water and Methanol. The Sephadex swelled 4.0 mL upon soaking and was left covered overnight. A 1.5” by 18” glass column with a frit was used for the Sephadex column. When loading the extract, only 1-5% of the column volume (0.690-3.50 mg) was added to the column. The 20 grams of Ethyl Acetate partition collected in Round 1 were divided into 2 fractions and ran twice in the Sephadex column. Sonication was used to dissolve the extract in 5% MeOH, 95% H_2O. 250 µL were first added and sonicated for approximately 10 minutes, then 4750 µL of Dichloromethane (DCM) were added and sonicated for another 10 minutes. The sample was then loaded on column. The first column was performed, and results were collected into labeled “Test tubes” a-e (Table 3). The column was then equilibrated with 190 mL of 5% MeOH and ran again exactly. This process was then repeated for the second column (Table 4). Thin Layer Chromatography was done in 10% MeOH, 90% DCM to determine which test tubes to combine. OSW-1's R_f was approximately equal to 0.5, this worked for Rows 1-END. Rows 15-END were close to the baseline.

Flash Chromatography

The separation continued using the Biotage system with a silica gel column. The Sfar Silica D Duo (60 µm) was used with a methanol DCM gradient (5-15%).

TLC results were used to set up this separational process using the Biotage method wizard. Twenty-seven test tubes were collected using the "collect all" option. By utilizing this option, no product goes to waste. After the test tubes are collected from the silica gel column, these fractions are put into a C18-Silica Reverse phase cartridge from the Biotage. They were used with a water: methanol gradient (50-80% water for ten column volumes, followed by a 80-100% water for three column volumes). This column was repeated 11 times to allow the extract to run from the normal phase silica column. Around twenty-three test tubes were collected for each of these 11 columns.

High Pressure Liquid Chromatography

Liquid Chromatography and Mass Spectra traces were then run on each of the test tubes to combine the fractions from all columns into one. Using the Shimadzu HPLC system, the Burgett lab moved forward to the final purification stage. The combined fractions from the C18 reverse phase were dissolved in methanol and placed onto the C8-silica reverse phase column with acetonitrile and water being the mobile phase. The scale-up tool on the Phenomenx website was the program for appropriately scaling up the materials in this method. Three gradient slopes were used: 50-55% (4CV's), 55-60% (4CV's), and 60-65% (4CV's), followed by one CV of 100% acetonitrile and 2 CVs of 50% acetonitrile. The last two CVs equilibrated the column for the next run. The large C8 prep column was used, the diameter being 21.2 mm and the length being 250 mm. 1 CV is 51 mL. The flow rate was 20 mL/m with a resulting time of 2.29 min/CV.

Nuclear Magnetic Resonance (NMR) Spectrum

QNMR provides the Burgett lab with the concentration of the sample through the aid of a calibration curve. By running NMRs on the compounds extracted, the lab can ensure that the extract is indeed OSW-1. The lab compared the peaks of the NMR results to the signals of certain functional groups such as esters, carboxyl groups, and aromatic rings to confirm that the signals of the extract matched the signals of OSW-1 (Figure 4). The lab also conducted NMRs over the sugar peaks of the collected sample to compare it to the two sugar groups of OSW-1 (Figure 5). Because the Burgett lab took an orthogonal approach in the purification of OSW-1, it is coherent to conduct NMRs at each purification step to ensure the sample collected is the desired compound, OSW-1.

Mass Spectrum

Figure 2 displays the liquid chromatography trace of the NMR sample 456-SLN of OSW-1. This mass spectrum enables us to detect the molecular weight of OSW-1. After the sample goes through the UV-VIS flow cell, it is then ionized and carried into the Mass Spectrometer. The spectra reveal the masses in either a positive or negative mode. The molecular weight of OSW-1 is 872.15 g/mol. Because of the

ionization, the compounds will form an adduct with a counter ion and add the ion to the weight. The 917 is OSW-1 and formic acid (+45). The 895 peak is OSW-1 and sodium (+23). These counter ions are naturally present all around us and can be explained. The 890 peak is the addition of an ammonium ion (+14). These results are displayed in Figure 3.

Results

The initial bulb material was weighed to be around 5000 grams. After microwaving and maceration, the crude extract collected weighed around 300.2 grams before any purification took place. Table 2 displays volume of solution that was collected and refilled from microwaving. After the Sephadex Column, the fractions were collected and combined by TLC analysis in 10% MeOH and 90% DCM. The plates at the end of the collection that did not show any spots which moved up the plate with the solvent, showed that the fractions were too polar to move up these plates with only 10% MeOH (Figure 7). The trace of the mass spectrum shows that the OSW-1 sample is 99.7% pure at a wavelength of 254nm. This satisfies the lab's goal of having the sample purity greater than 95% (Figure 2). Currently, 112.87 mg of isolated and purified OSW-1 has been collected. However, the remaining fractions of butanol and hexane are in progress.

Discussion

Extraction

To properly isolate OSW-1 from the other compounds present in the African Lily bulbs, it is necessary to conduct several isolation procedures. To obtain extracted OSW-1 from the plant material, a microwave process combined with maceration was executed. Microwave extraction was first noted by scientist Abu-Samra for metal analysis treatments in 1975, in which microwaves excited organic samples to extract organic compounds.[5] Several studies have shown that microwave extraction is not only time-efficient but also reduces solvent loss. "Microwave-assisted extraction" allows for cell walls to be weakened at faster rates without significantly heating the sample.[6] Heating a sample changes its chemical makeup entirely, something the Burgett lab wanted to avoid doing. By choosing solvents that have a lower dielectric constant while also being able to solubilize OSW-1, the extraction can take place under minimal heat. The lower the temperature of the bulbs, the better the stability of the overall extracted compounds. Each pot contained about

[5] Orsat, V., & Routray, W. (2012). *Microwave-Assisted Extraction of Flavonoids.* In *Elsevier eBooks* (pg. 414).

[6] Nguyen VT, Le MD, Nguyen TTT, et al. Microwave-Assisted Extraction for Optimizing Saponin Yield and Antioxidant Capacity from Cacao Pod Husk (*Theobroma cacao* L.). *J Food Process Preserv*. 2021, 2. https://doi.org/10.1111/jfpp.15134.

one kilogram of bulb slices, which were then submerged in a solvent. To avoid the risk of cell destruction or degradation of heat-sensitive compounds, each pot was gently irritated with a spatula every thirty seconds for four minutes on low power. After successfully extracting the multitude of compounds from the bulbs, the purification process was ready to be executed.

Separation and Purification

After extraction, the mixture was concentrated by the Genevac concentrator. The pure bioactive compounds must be separated and purified by purification methods such as chromatography. Chromatography has two main phases: mobile phase and stationary phase. For the Sephadex Column, the mobile phase was a gradient of methanol in DCM (5-15% methanol). The stationary phase is typically a porous layer, and the mobile phase is the fluid that drains through this layer.[7] Different types of chromatography such as Thin Layer Chromatography (TLC), Gravity Column Chromatography (GCC), High Pressure Liquid Chromatography (HPLC), and Flash Chromatography became the main methods of purification. TLC is a technique used to separate compounds of a mixture with the purpose of observing the process of a reaction. TLC plates are typically composed of glass or plastic, and, with a pencil, a line is drawn approximately one centimeter from the bottom. Several spots are applied onto the plate with a capillary, then it is placed in a solvent. After removing the plate from the solvent, the plate is dried and placed under a UV light or stained with a chemical stain. Each spot has a retention factor that can be used to identify the identity of each compound.[8] GCC is a chromatographic method that consists of partitions using separatory funnels and columns. The stationary phase separates the compound from the liquid phase due to polarity differences. Though there are many types of stationary phases, we chose to use Silica and Sephadex to separate the components. Under gravity, the solvent passed through the column, purifying the mixture as it becomes collected and eluted.[9]

Flash Chromatography is a chemical separation method that utilizes purification technology. Compounds tend to separate due to their polarity differences and their chemical makeup. The Biotage system is used to isolate and collect purer compounds from the crude mixture, utilizing pressurized gas to move solvents through a column with a medium pressure.[10]This method made

7 Wellings, D. A. (2005). The history and development of preparative HPLC. In *Elsevier eBooks.* https://doi.org/10.1016/b978-185617466-4/50003-7

8 Libretexts. (2022b, August 23). *Thin Layer Chromatography.* Chemistry LibreTexts. https://chem.libretexts.org/Ancillary_Materials/Demos_Techniques_and_Experiments/General_Lab_Techniques/Thin_Layer_Chromatography.

9 Regenstein, J. M., & Regenstein, C. E. (1984). Column Chromatography. In *Elsevier eBooks.* https://doi.org/10.1016/b978-0-12-585820-5.50020-8

10 Bickler, B. (2023b, January 26). "What is Flash Chromatography and Why Should I Do It?" *Biotage.* https://www.biotage.com/blog/what-is-flash-chromatography-and-why-should-i-do-it

chromatography faster as the gas reduced the retention time of the column itself. The normal phase that was conducted through the Biotage system with the Silica gel column, in which the most non-polar compound (test tubes 2-3) came out first. The second Biotage column was the reverse phase with the C-18-Silica Gel column, in which the most polar compounds (test tubes 17-18) came out first (Figure 6). HPLC is also a technique that requires a liquid mobile phase to interact with a stationary phase. A chromatography data system detector is then able to translate different signals, so the researcher can study the chromatogram and collect the different components.[11]

Continued research is required as the butanol and hexane fractions are yet to be purified, continued testing is undergoing, and the OSW-1-related compound library continues to be added to.

Reflection

Through this mentorship I was able to experience hands on learning of new techniques and apply what I was learning in class through real life applications. I was able to gain proficiency in analyzing data such as molecular structures, graphs, charts, and figures. This new experience also came with hardships, which required me to think critically and adapt to overcome unexpected results. Working alongside experienced researchers fostered an environment where collective problem-solving was encouraged and challenges were overcome as a team. I improved my ability to communicate concepts clearly through presentations and discussions, such as this paper. This experience nurtured my interest in pursuing a career in pharmaceutical research or chemistry and has given me a new perspective.

Acknowledgements

I would like to thank Dr. Anthony Burgett, Dr. Susan Nimmo, Jorge L. Berrios-Riveria (Graduate Research Assistant), Daniel Alguindigue (Graduate Research Assistant), and the remaining Burgett research group for their guidance and support in this impactful project. I would also like to thank Dr. Roberson and OSSM for providing with this invaluable opportunity. This experience has been incredibly rewarding and greatly enriched my educational journey.

References

Plant materials were purchased from Brent and Becky's Bulbs and nurtured in the OU greenhouse. The research is funded through grants from the National Institute of Health (NIH) and the Presbyterian Health Foundation (PHF).

Bickler, B. (2023b, January 26). "What is Flash Chromatography and Why Should I Do It?" *Biotage*. https://www.biotage.com/blog/what-is-flash-chromatography-and-why-should-i-do-it.

11 *HPLC Basics | Thermo Fisher Scientific - IE. (n.d.).* https://www.thermofisher.com/us/en/home/industrial/chromatography/chromatography-learning-center/liquid-chromatography-information/hplc-basics.html#:~:text=High%2Dperformance%20liquid%20chromatography%20(HPLC,packed%20with%20a%20stationary%20phase.

Burgett, A. W., Poulsen, T. B., Wangkanont, K., Anderson, D. R., Kikuchi, C., Shimada, K., ... & Shair, M. D. (2011). Natural Products Reveal Cancer Cell Dependence on Oxysterol-Binding Proteins. *Nature Chemical Biology*, *7*(9), 639-647.
Forrest, I. (2020). *Identification and Isolation of Bioactive Natural Product Compounds Targeting Oxysterol-Binding Proteins.* [Approved master's thesis, University of Oklahoma].
HPLC Basics | Thermo Fisher Scientific - IE. (n.d.).
https://www.thermofisher.com/us/en/home/industrial/chromatography/chromatography-learning-center/liquid-chromatography-information/hplc-basics.html#:~:text=High%2Dperformance%20liquid%20chromatography%20(HPLC,packed%20with%20a%20stationary%20phase.
Libretexts. (2022b, August 23). *Thin Layer Chromatography.* Chemistry LibreTexts. https://chem.libretexts.org/Ancillary_Materials/Demos_Techniques_and_Experiments/General_Lab_Techniques/Thin_Layer_Chromatography.
Nguyen VT, Le MD, Nguyen TTT, et al. Microwave-Assisted Extraction for Optimizing Saponin Yield and Antioxidant Capacity from Cacao Pod Husk (*Theobroma cacao L.*). *J Food Process Preserv*. 2021, 2. https://doi.org/10.1111/jfpp.15134.
Regenstein, J. M., & Regenstein, C. E. (1984). Column Chromatography. In *Elsevier eBooks.* https://doi.org/10.1016/b978-0-12-585820-5.50020-8
Orsat, V., & Routray, W. (2012). *Microwave-Assisted Extraction of Flavonoids.* In *Elsevier eBooks.*
Wellings, D. A. (2005). The History and Development of Preparative HPLC. In *Elsevier eBooks.* https://doi.org/10.1016/b978-185617466-4/50003-7.

Betting on Vibes: An Ethnography of the Impact of External Stimuli on Casino Patrons

Samantha Seratte

Introduction

Since their conception, the main goal of casinos has been to turn a profit, and to do so they have gone all in on maximizing the influence of the environment they create. Casinos do everything in their power from lighting, sound, layout, and theming in order to make their patrons feel more comfortable with spending large quantities of money over recurring visits. For instance, when people think of Las Vegas they tend to think of the dinging of machines, flashing lights, extravagant themes, and large rooms of gaming machines and card tables full of people winning big and having a great time. The immersion that casinos provide keeps their patrons engaged with their games, but this immersion has negative side effects including escapism and compulsive gambling. Casinos are aware of such effects and thus now have protocols in place to help their guests who might be suffering from compulsive gambling, while still seeking to garner a profit off of people who visit their establishment.

This concept of casinos using external stimuli to influence their guests is based on ethnographic[12] research conducted at four casinos including Riverwind Casino in Norman, OK, Cherokee Casino: Will Rogers Downs in Claremore, OK, Osage Casino in Skiatook, OK, and Cherokee Casino: Ramona in Ramona, OK. I administered interviews with the Operations Manager at Ramona, Aaron Tull and the Operations Manager at Claremore, Evan Latham. I also interviewed a long time casino patron and previous worker at Osage Casino in Skiatook named Bailey Smith. All interviewees named are pseudonyms to protect their privacy.

Furthermore, I used outside sources to support my own research such as articles from cultural anthropologist, Natasha Dow Schüll, and Bill Friedman, the previous president and general manager of a casino chain before becoming a casino consultant for thirty-seven years. These two authors were particularly informative for my research as Friedman supported the factors I found to be intentionally controlled to affect player behavior and Schüll discussed the effect of said factors on the patrons, discussing the "zone state" created by the casino immersion

.

Lighting

Lighting is one of the crucial environmental factors that casinos manage in order to attract visitors and entice them to stay. In the casinos that I visited, they all lacked overhead lighting, windows, and clocks. Also, the primary light source for the gaming floor was the flashing colorful lights coming from the various Electronic Gaming Machines (EGMs). The lack of windows and clocks keeps guests from

[12] According to The University of Virginia, ethnography is a qualitative method for collecting data through observations and interviews.

noticing how long they have spent there. If guests are reminded of how long they have spent inside of the casino and the world outside, then they are more likely to lose the immersion factor and not be inclined to stay.[13] This assessment is supported by the interview that I conducted with Evan Latham. He emphasized that lighting played an integral role in creating the desired environment and that the lack of windows was an intentional choice in order to control the attention of their patrons.[14] Casino goers wish to "escape" and "forget things"[15]; to escape reality if only for a few hours.

Also, without a lot of overhead lighting, the main light sources, and thus the things that capture people's eyes, are the gaming machines. When Bailey Smith was asked what the first thing was that she noticed when she walked into a casino, she said that it was the "amount of machines".[16] The bright, flashing, and commonly neon lights in a darkly lit room stand out and draw people's attention. In my own experience of sitting in front of one of these machines, the brightness made it very easy to get tunnel vision and completely tune out what was happening in the periphery. Casinos seek to eliminate the passage of time to encourage guests to stay and game for longer amounts of time because the longer guests stay, the more money they spend. Schüll says that technologies, including EGMs, are "carefully designed to promote extended gambling"[17] and notes that the repetitive nature of these machines gives people an escape. Silvestro notes casinos are seen as "nice places to get away from the regular world without any stress and have fun."[18]Aaron Tull expressed a similar sentiment saying that their goal is to be an "entertainment destination".[19] lighting just so happens to be one of the ways casinos create the kind of environment that encourages a longer stay at their establishment

.

Sound

As previously established, everything within a casino is carefully curated for their patrons and sound is no different. Everything from music genre to volume to the characteristic dinging of the slot machines is chosen with the expressed purpose of keeping people playing in their establishment. Every time you win any amount of money, even sums as small as twenty cents, the machines will still produce the jackpot ding creating a false sense of winning and positive reinforcement to continue playing.[20] I experienced this phenomenon first-hand when I was conducting my research. I found the reinforcement extremely compelling to continue playing

[13] Alex Silvestro, et al, "Casinos" (2011): 2, Accessed November 1st, 2024. https://doi.org/doi:10.7282/T3D7998Z.
[14] Evan Latham, interview with author, October, 20th, 2024.
[15] Bailey Smith, interview with author, October 19th, 2024.
[16] Bailey Smith, interview with author, October 19th, 2024.
[17] Natasha Dow Schüll, "Machines, Medication, Modulation: Circuits of Dependency and Self-Care in Las Vegas," (2006): 2, Accessed on October 31st, 2024. https://doi.org/doi:10.1007/s11013-006-9018-y.
[18] Alex Silvestro, et al, "Casinos" (2011): 3, Accessed November 2nd, 2024. https://doi.org/doi:10.7282/T3D7998Z.
[19] Aaron Tull, interview with author, October 19th, 2024.
[20] Mike J. Dixon, et al, "The Impact of Sound in Modern Multiline Video Slot Machine Play," *J Gambl Stud* 30, (2014): 913. Accessed November 2nd, 2024. https://doi.org/doi: 10.1007/s10899-013-9391-8.

despite the knowledge that I was still losing money overall; explained by the measurable increase in arousal due to the sound of the slot machines.[21] Sound works in tandem with the lighting of the machines to reinforce a player's focus; it almost works as though someone is calling your name and you can't help but look toward the direction of the noise. Even if your eyes leave the machine for a moment and your mind begins to wander from the machine, the loud ring brings your attention right back and re-engages you.

The influence of sound on the immersion instituted by casinos is not limited to the ringing of the gaming machines however; it also extends to the music playing there. For instance, the music being played at all of the casinos that I went to was a mix of country music and classic rock because they cater to an older demographic. At Will Rogers Downs, they primarily play country music because that is the genre their primary demographic (older, rural, and blue-collar people) listens to.[22] The thought process behind this is simple: people do not want to be in a place that is constantly playing music they do not like. For example, if a casino is playing pop music to a room full of cowboys and truckers who only listen to country music, they are probably less likely to want to stay and will move on to another venue that is playing the music they like. Latham also notes the mood of the music as an important factor, stating, "[Will Rogers Downs] plays majority country, but I'll throw in some classic rock in there because you want the upbeat music."[23] It is integral to keep the overall mood of the casino engaging and exciting, and music contributes to that.

The volume of the music is also something to consider. If the music is too loud then it will overpower the sound of the machines, counteracting the previously discussed effects of the machine dings. Another problem that occurs is when the music is too loud, combined with the constant ringing of the machines, the noise level begins to become overwhelming and overstimulating to an uncomfortable degree. The ideal function of music within a casino, outside of the casino hosting live music events, is to serve as pleasant background noise that does not distract from the games but subtly encourages the excitement of gaming.

Layout

A casino's layout is another important aspect to consider in the immersion and engagement of casino patrons. To draw from my personal experience, I found the gaming floor to be rather maze-like and difficult to navigate at all of the locations including the smaller properties. The machines are laid out in rows but not with consistent paths where you can walk in a straight line from one end of the casino to the other. The maze-like quality is heightened by how tall the EGMs are, to the point where you can not see over them much like a corn maze. Friedman notes thirteen key principles in the interior design of casinos and Principles three and four lend

[21] Dixon, "The Impact of Sound," 925.
[22] Evan Latham, interview with author, October 20th, 2024.
[23] Evan Latham, interview with author, October 20th, 2024.

themselves to the maze of machines.[24] Principle three highlights that having short lines of sight is ideal in casinos because it provides a more intimate feeling to guests, while Principle four credits the maze layout with encouraging exploration and excitement for guests as well as creating small intimate spaces throughout the gaming floor.[25] The presence of the large and bright multitude of EGMs is also a key principle that Friedman points out in Principle Nine; he states that gaming equipment should "be the dominant feature in a casino" and that decor should "highlight and enhance the equipment layout" so that it does not distract from the EGMs and upset the "gaming ambience."[26] During my casino visits, I noticed that the dominant feature of them all was the machines, which validates the point made by Friedman.

While Friedman's principles were quite helpful, I did differ in opinion on the topic of ceilings. In all of the casinos that I visited, they all had high ceilings but in Friedman's principles, he views this as a negative point against any casino. In fact, he says that "this creates enormous, uninterrupted, barren space" and counteracts the ideal intimate environment.[27] This brings up the question of why all the casinos I visited did not adhere to Friedman's ruling. From my perspective, this is due to the larger-than-life and "Vegas-like"[28] feel that casinos are going for. As Tull said, they want to be perceived as an entertainment hotspot and high ceilings make a space feel a lot bigger and almost more luxurious like the extravagant casinos in Las Vegas that are portrayed in popular media. Guests want to feel like they are on a luxury "getaway"[29] and the high ceilings create that feeling. I would say that the high ceiling relates to Friedman's twelfth principle of "visitor perception vs. reality."[30] As previously stated, the ceilings create the perception of the space being larger than life even when the casino is quite small, like at Ramona and Will Rogers Downs, in comparison to large resorts.

All of these aspects of the layout contribute to immersing their patrons and facilitating "the zone state compulsive gamblers describe, enabling them to forge an insulated, autonomous space of play."[31] This "zone state"[32] is referred to as relieving and an "escape"[33] from reality which emphasizes the addictive and compulsive nature of gaming. This addictive quality has been documented through the

[24] Bill Friedman, "Casino Design and Its Impact on Player Behavior," in Stripping Las Vegas: A Contextual Review of Casino Resort Architecture," ed Karin Jaschke, Silke Ötsch (2003): 76-77, Accessed on November 4th, 2024. https://westminterresearch.westminster.ac.uk/item/93667/stripping-las-vegas-a-contextual-review-of-casino-resort-architecture.
[25] Friedman, "Casino Design and Its Impact on Player Behavior," 76-77.
[26] Friedman, "Casino Design and Its Impact on Player Behavior," 79.
[27] Friedman, "Casino Design and Its Impact on Player Behavior," 78-79.
[28] Aaron Tull, interview with author, October 19th, 2024.
[29] Aaron Tull, interview with author, October 19th, 2024.
[30] Friedman, "Casino Design and Its Impact on Player Behavior," 80.
[31] Natasha Dow Schüll, "Machines, Medication, Modulation: Circuits of Dependency and Self-Care in Las Vegas," (2006): 11, Accessed on October 31st, 2024. https://doi.org/doi:10.1007/s11013-006-9018-y.
[32] Schüll, "Machines, Medication, Modulation," 11.
[33] Bailey Smith, interview with author, October 19th, 2024.

heightened release of dopamine and serotonin while gaming which leads to higher levels of excitement and gambling severity.[34]

Conclusion

In closing, casinos encourage gaming by utilizing multiple techniques and strategies to immerse guests in the space. The intended result of this immersion is to encourage patrons to stay longer and, therefore, spend more money. However, as much as casinos encourage gaming to turn a profit, they also take precautions and offer resources to combat compulsive gambling. As highlighted in my interview with Mr. Tull, there are quite a few resources for those struggling including state-run programs where you may ban yourself from every casino in the state of Oklahoma.[35] On the corporate side of things, it seems establishments like Cherokee Nation Casinos keep an eye on how regulars spend their money and if there seems to be a problem on that front (excessive spending, change in spending habits, or lots of outstanding debt), steps will be taken and recommended with that guest.[36] In addition, just as Schüll states, a lot of the treatments regarding compulsive gambling focus on gamblers "managing themselves" and "governing" their own lives which does seem to also be the stance taken by casinos themselves.[37] Mr. Tull also says something of a similar sentiment with phrases such as guests needing to "self-identify" and that casinos can only "guide them" to appropriate resources.[38]

[34] Luke Clark, et al, "Pathological Choice: The Neuroscience of Gambling and Gambling Addiction," Journal of Neuroscience 33, no. 45 (2013): 17619-17620, Accessed on January 27th, 2025. https://doi.org/10.1523/jneurosci.3231-13.2013.
[35] Aaron Tull, interview with author, October 19th, 2024
[36] Aaron Tull, interview with author, October 19th, 2024
[37] Schüll, "Machines, Medication, Modulation," 8.
[38] Aaron Tull, interview with author, October 19th, 2024

References

Clark, Luke, B. Averbeck, D. Payer, G. Sescousse, C. A. Winstanley, and G. Xue. "Pathological Choice: The Neuroscience of Gambling and Gambling Addiction." *Journal of Neuroscience* 33 (45): 17617–23 (2013). Accessed on January 27th, 2025. https://doi.org/10.1523/jneurosci.3231-13.2013.

Dixon, Mike J, Kevin A Harrigan, Diane L Santesso, Candice Graydon, Jonathan A Fugelsang, Karen Collins. "The Impact of Sound in Modern Multiline Video Slot Machine Play." *J Gambl Stud* 30, 913–929 (2014). Accessed November 2nd, 2024. https://doi.org/doi:10.1007/s10899-013-9391-8.

Friedman, Bill. "Casino Design and its Impact on Player Behavior." In *Stripping Las Vegas: a Contextual Review of Casino Resort Architecture*, edited by Karin Jaschke, Silke Ötsch. 69-86. (2003). Accessed on November 4th, 2024. https://westminsterresearch.westminster.ac.uk/item/93667/stripping-las-vegas-a-contextual-review-of-casino-resort-architecture.

Schüll, Natasha Dow. "Machines, Medication, Modulation: Circuits of Dependency and Self-Care in Las Vegas." (2006). Accessed on October 31st, 2024. https://doi.org/doi:10.1007/s11013-006-9018-y.

Silvestro, Alex, Pat Lubin, Tom Gallagher, Mike Cucinotta, and Julie M. Fagan. "Casinos." (2011). Accessed November 1st, 2024. https://doi.org/doi:10.7282/T3D7998Z.

Spring Fire, *The Price of Salt*, and Cold War Queerness: An Analysis of Lesbian Literary Culture in the 1950s

Kenedy Gaddie

Introduction

In the era of the Cold War, both the government and the general populace of the United States was becoming increasingly concerned about national security. This prompted a society-wide reinforcement of Americans being encouraged to live what was seen as the proper and moral American life both publicly and privately. This included a reinforcement of the heteronormative family structure, as "the myths of certainty—the naturalness and rightness of heterosexual coupledom, for example—become the necessary counterpoint to the uncertainty of war" (Hesford 216). This push for heteronormativity prompted a wave of intolerance—such as the mass firings of suspected homosexuals from the government—for those seen as queer or otherwise sexually deviant, a phenomenon that came to be known as the Lavender Scare. Homosexuals were seen, at best, as morally degenerate or mentally disturbed, and at worst as a threat to national security, with Senate subcommittee investigations into the subject of homosexuals employed in the government deeming them vulnerable to blackmail, that being homosexual "weakens the moral fiber of an individual to a degree that he is not suitable for a position of responsibility" (S. Res. 280, 4), and that "if a blackmailer can extort money from a homosexual under the threat of disclosure, espionage agents can use the same type of pressure to extort confidential information" (5). In an effort to be seen as moral, loyal American citizens, people were encouraged to perform to the sanctity of heteronormative life and suppress any behaviors that could be construed as queer.

Yet at the same time, this period saw a growth in queer culture—particularly for lesbians, and particularly in the literary sphere. The 1950s included the start of lesbian pulp fiction—novels where the main characters were two women in a romantic and/or sexual relationship. Influenced by societal views, the portrayal and treatment of these characters could vary greatly. More than being one of the few sources of explicit lesbian representation, these pulp paperbacks held mass-market appeal and enjoyed widespread distribution, with millions in sales (Keller 385). These novels also played a crucial role in identity formation for young lesbians, as "The 1950s were a time when most lesbians could not access any stories about themselves, much less positive ones, since lesbianism was mostly invisible in popular culture." (Keller 386). I will be analyzing two lesbian pulp novels both published in 1952—*Spring Fire* by Vin Packer and *The Price of Salt* by Patricia Highsmith—and their differing presentations of lesbianism and endings, as well as their respective places within the lesbian literary culture of the 1950s. Where *Spring Fire*'s portrayal of a lesbian relationship is not quite negative, it is beset by several factors that keep it from a true romance, and the novel ultimately succumbs to the prevailing Cold War dialogue that there is no place for queerness in the United States

by giving its protagonists a tragic ending. *The Price of Salt*, by contrast, is one of the few pieces of media from that era that not only positively depicts the relationship between its two female main characters and challenges the narrative that homosexuality and queerness must be rooted out for the good of America with the assertation that queer love will flourish regardless, but also provides needed diversity in the genre of lesbian pulp novels and enriches the lesbian literary scene of the 1950s.

***Spring Fire*'s Presentation**

Spring Fire follows Mitch and Leda, two roommates in the Tri Epsilon sorority, with Leda being an upperclassman while Mitch is a new pledge. The two quickly develop feelings for each other, but their budding relationship is fraught with several obstacles, with Leda at one point lamenting that "here she sits wishing all to hell that she could reach over and kiss you. But she can't because it's not right. Not here in the broad daylight. Not in the open. It's right in the night. Then it's right." (Packer 143), reflecting how queer relationships weren't openly accepted and mostly survived underground. Tri Epsilon is simultaneously the facilitator of Mitch and Leda's relationship and the reason they can't be open about it, as the sorority enforces heteronormativity by setting up dates for its pledges and willing to expel any queer girls to maintain their reputation, as is what eventually happens to Mitch when she and Leda are caught being intimate together.

Mitch also wrestles with internalized homophobia throughout the novel, as all the sources of information she has about lesbianism paint it as something "abnormal" and a disease. These feelings are unintentionally compounded by Leda, who makes several disparaging comments about queerness and lesbians specifically, saying that she's "got bisexual tendencies, but by God, I'm no damn Lesbian" (169), "couldn't love you [Mitch] if you were a Lesbian" (170), and that "if Jan [her mother] ever knew, I'd take a razor and slash my wrists. I couldn't live with people knowing, and pointing and saying 'queer' at me" (231). The message Mitch overwhelmingly receives is that being openly queer, and even being queer at all, is an unbearably miserable experience at best, which is a fear that she never truly gets the chance to overcome even internally throughout the novel. Even when she comes to terms that she loves Leda and Leda loves her back, her feelings are still filtered through a veneer of shame and lamenting: "'I love Leda,' she said softly to the darkness, 'even though we're both that way. I wish she wasn't that way.'" (Packer 251).

The unhappiness of its two protagonists is sealed with its ending, which Packer later stated she was pressured to change by her editor because the book would be distributed via mail and postal services would refuse to carry it if it included any depictions of homosexuality as an attractive lifestyle. Mitch and Leda's relationship is discovered by the other girls of the sorority, where Leda ends up casting blame on Mitch for their relationship. Mitch ends up expelled from the sorority while Leda, after a car accident and a mental breakdown, is committed to a mental hospital due

to the perceived disease of her love for Mitch. The last line of the novel comes from Mitch, after a final meeting with Leda, when she's at a festival with another ex-sorority pledge Robin, Robin's date, and Mitch's own male friend Lucifer. Mitch reflects that even after everything that happened with Leda, "She didn't hate her. She didn't hate her at all, and she knew then that she had never really loved her." (Packer 323). This was likely to keep Mitch, the primary point-of-view character, sympathetic to the censorship and biases of Cold War media, at the cost of framing her as not a real lesbian but rather a misguided and inexperienced girl who had realized the "error" of her thinking after being separated from her first exposure to queer relationships. It is all of these elements that keep *Spring Fire* from being a true lesbian romance, as opposed to a story with lesbian characters, especially when comparing the things this book is not allowed to heterosexual romances that have no such restrictions, and even other novels that follow lesbian relationship, as seen in *The Price of Salt*.

Spring Fire, *The Price of Salt*, and Lesbian Culture in the '50s

When analyzing *Spring Fire*—and *The Price of Salt*—it is important to take into account not just the powers that could edit its story, but also the lesbian literary culture of the 50s and 60s. During that time, lesbian pulp novels were seeing a sudden surge in production and proliferation, but it was a double-edged sword. The quality of their queer representation could vary wildly, with some being outright homophobic and some made for pornographic appeal to heterosexual men rather than any intent to capture the queer experience. In either case, the voyeuristic element was often made plain, with covers including women only partially dressed or in sensual poses or sensationalist taglines.

Yet at the same time, it must be acknowledged that these novels were a mainstream source of queer representation, with one account from a reader that she "needed them the way she needed food and shelter for survival" (Keller 385). Novels like *Spring Fire* may have been the only consolation that feelings of desire, conflict, and inner turmoil were felt not just by one but by many, even at the time that its narrative was made to validate those feelings of insecurity and shame as the "correct" ones. *Spring Fire*, no matter how problematic it might appear to modern sensibilities and how it might have furthered homophobic Cold War beliefs, was extremely popular at the time of its publication, and it had sold more than 1.5 million copies by 2004 (Keller 389). Further muddying the waters is when Packer stated in 1989 that, at the time of writing, she had no plan of writing to a lesbian market because, being at the beginning of the lesbian pulp trend, she wasn't aware of such a market and instead says the novel was mostly a way to tell her own experiences as a lesbian (390).

Discussing *Spring Fire*, *The Price of Salt*, and the entire subgenre of lesbian pulp novels invites discussion on the importance of representation of marginalized groups, whether potentially harmful representation or no representation at all is more

damaging, and how much responsibility should be taken from an author's shoulders when considering the pressures of censorship versus the value of countering oppressive narratives. *Spring Fire* was hardly the progenitor of the idea that queerness was something to be rooted out and silenced, Leda and Mitch do engender a good deal of sympathy and nuance from the reader even before their tragic end, and there is value to exploring stories of tragedy or insecurity in queer stories, since such elements are hardly barred from heterosexual stories. Yet there is an argument to be made that its portrayal, combined with its success and its status as being one of the first lesbian pulp novels, helped solidify the prevailing trend that fictional queer couples could not have happy endings, which communicates the idea, overtly or unintentionally, that queer couples in the real world couldn't either.

There is also *The Price of Salt* to consider as a counterpoint, as Highsmith's novel also follows a lesbian couple, albeit in a different setting and circumstance, and explores the social pressures that keeps them from simply being together, yet doesn't explore feelings of internalized homophobia, has an overall healthier romance, and gives its lesbian protagonists an ending that is, while not without complications, one that includes both of them alive, well, and together, in direct defiance of what the moral code of the time would dictate. If defiance of oppressive norms is possible, then isn't it better to defy them in spite of resistance, for the purpose of countering the narrative? This analysis is not meant to condemn *Spring Fire* for its participation in the Cold War dialogue discouraging homosexuality, even as it draws attention to the areas in *The Price of Salt* that greatly diverge from it. Instead, let the condemnation lie in the forced oversaturation of the lesbian literary market with many more stories like *Spring Fire* and not so many like *The Price of Salt*, as we take a look at the importance of a counter-narrative.

***The Price of Salt*'s Presentation**

The main characters of *The Price of Salt* are Therese and Carol. Therese is young, somewhat romantic young woman who is also trying to break onto the scene of set design. Carol is an older socialite woman who's recently gotten divorced from her husband, Harge, and the two of them are trying to work out custody of their young daughter, Rindy. Carol and Therese meet by chance at the department store Therese works at, quickly hit it off, and start seeing each other more both in public and at Carol's home. Throughout the novel, their relationship is depicted as a genuine romance and not the result of some perversion or moral failing, nor as some insignificant and superficial dalliance. Early in the novel, Therese is discussing same-sex couples with Richard, who she had been dating. Richard dismisses them on the whole, but Therese privately reflects that "the way she felt about Carol passed all the tests for love and fitted all the descriptions" (Highsmith 82). Where Mitch wrestles with internalized homophobia due to the idea that lesbianism is some perverse disease, the only real insecurity Therese grapples with is whether a relationship with Carol would be even be possible given the society they live in and

whether Carol truly reciprocates her feelings, a plot element that is notably not solely confined to the realm of queer love stories but can be found in the genre of romance as a whole, challenging the notion that queer love is different from heterosexual love aside from the societal restrictions put on it.

Later in the novel, Carol and Therese embark on a road trip together to get away from the city and spend more time together. On the trip, they finally find the freedom to openly confess their love and consummate their relationship, breaking down the last of emotional and physical barriers between them. However, their romantic getaway is interrupted when they discover that Harge has sent a private detective after them to gather incriminating evidence against Carol. In contrast to mainstream belief that homosexuals needed to be outed for the good of the country, the detective—and, subsequently, Harge's invasion of their privacy—is characterized by a distinct malice and spitefulness:

> It was malice she [Therese] had seen in his [the detective's] smile, even as he said he was on no side, and she could feel in him a desire that was actually personal to separate them, because he knew they were together. She had seen just now what she had only sensed before, that the whole world was ready to be their enemy, and suddenly what she and Carol had together seemed no longer love or anything happy but a monster between them, with each of them caught in a fist. (Highsmith 199)

Therese and Carol's relationship is able to be completely healthy, equal, and loving when they are left alone and free to love each other. Its only when the external, homophobic society begins exerting its power that that happiness is interrupted. Furthermore, Harge didn't send the private detective out of a misguided belief that it was the right thing to do, but for his own selfish motives. "The spike, as well as the dictaphone Carol finds hidden under the bedside table of the hotel room are, as Carol remarks, 'a portrait of Harge', but it is a portrait that, in suggesting impotence, makes the artificiality, manufacturedness, and precariousness of Harge's claim to power explicit," Hesford says in her essay. The selfish and egotistical motives of Harge are made even more clear when it's remembered he was looking for incriminating evidence to use against Carol in the custody battle, even when it was stated earlier in the novel he already had majority custody of Rindy.

It's not the last time Highsmith makes the petty and hateful nature of homophobia the forefront, either, as later in the novel Richard sends Therese a letter formally ending their relationship. Even though Richard fulfills his stated objective—making it clear that whatever relationship or possibility of one he and Therese once had is now over—within the first few lines of the letter, he continues to go on for several more paragraphs of vicious verbal abuse toward Therese. He insults both her and her relationship with Carol by telling her that he thinks she is disgusting and naïve for thinking of her and Carol's relationship as a legitimate one and insisting he wants nothing more to do with her, and still insists that "[he] is talking sense and very likely [she is] not understanding a word of it" (Highsmith

215). When Carol and Therese meet again in New York, Carol tells her how the perception of queer people as morally inferior and her specifically as an irresponsible mother for being a queer woman has led to her losing almost any opportunity to see her daughter or be a meaningful part of her life. Despite their hardships, the novel ends with another meeting between Therese and Carol, where it is heavily implied Therese will take Carol up on a previous offer of moving in together and the two will continue their relationship.

The Price of Salt's Refutation

At the same time that *The Price of Salt* depicts the Cold War as having created an oppressive society where there is hardship in being queer and homophobia can destroy the lives that queer people lead, it validates queer identity and how queerness outlasts any attempts to eradicate it. After Therese has returned to the New York but before her and Carol's final meeting at the very end of the novel, she feels that any possibility of a relationship with Carol is impossible and wonders what she should do next. Another point of contrast to *Spring Fire* is when, faced with this same question after her final meeting with Leda in the hospital, Mitch goes on an all-but-explicitly-stated double date with a male character and tells herself she never really loved Leda at all. In *The Price of Salt*, instead of this being the beat where Therese goes and finds herself a "correct", "moral" heterosexual relationship after telling herself that her relationship with Carol was nothing but a childish fling, Therese instead reaffirms her own queerness to herself:

> her consciousness had stopped in a tangle where a dozen threads crossed and knotted. One was Dannie. One was Carol. One was Genevieve Cranell. One went on and on out of it, but her mind was caught at the intersection. She bent to take a light for her cigarette, and felt herself fall a little deeper into the network, and she clutched at Dannie. But the strong black thread did not lead anywhere. She knew as if some prognostic voice were speaking now that she would not go further with Dannie. (Highsmith 247)

Just before she meets Carol at the end of the book, Therese briefly flirts with an actress named Genevieve Cranell at a party and thinks that, if she hadn't known Carol, she might have been tempted to enter a relationship with Genevieve. Therese's queerness is not in question, and Therese herself is at peace with being lesbian, with all her melancholy stemming from the fact that she feels she lost Carol, the woman she forged a deeper connection with. Eventually, the novel closes with Therese seeking Carol out at a restaurant and it is heavily implied that the two are going to rekindle their relationship and that Therese will move in Carol, as Carol asked her earlier.

The narrative of the Cold War discourse surrounding queer people is that queer people cannot—or cannot be allowed to—be happy, accepted, or successful in society. *The Price of Salt* counters that narrative with the idea that the reason queerness cannot thrive in heteronormative culture of the U.S. is because it has been

deliberately set up that way, not because queer people are inherently flawed or dangerous. The picture that *The Price of Salt* paints is that "the seemingly unproductive and illogical desire of queers and homosexuals, along with the potentially explosive and uncontrollable mixing of people in cities that symbolize, for Highsmith, an outside to the systemization and alienation Cold War heteronormative domesticity" (Hesford 218). In *Spring Fire*, a good deal of the anguish the characters suffer comes from internalized homophobia, while in *The Price of Salt* the hardship is externally imposed by a society that cannot bring itself to make space for people who are different, even when they're harmless. This essentially removes the temptation to blame Carol and Therese's misfortunes on their being queer, because the novel had explicitly shown that queerness in isolation is not a danger or a failing.

In Highsmith's narrative, if queer people suffer for being queer, it is not because they invited it or because queerness inevitably leads to tragedy and ruin, but because the image being pushed onto them as dangerous or otherwise lacking has created a society where queerness cannot be allowed without being punished or dismissed. It's never known if Carol would have been able to continue seeing Rindy if Harge hadn't leveraged her queerness against her. Richard outright refuses to even give queer people the respect of acknowledging that they enter queer relationships for any reason other than love or desire, remarking to Therese that "those things don't just happen. There's always some reason for it in the background." (Highsmith 81). The constructed nature of homophobia and how it is not some kind of righteous judgement but a tool to alienate others that fall outside the paradigm of idealized Cold War lifestyles gets further examined when Therese muses about how Richard "mingl[ed] war and big business and Congressional witch-hunts and finally certain people he knew into one grand enemy, whose only collective label was hate." (Highsmith 112).

But the most significant and most fundamental things *The Price of Salt* has to say about queerness is not when its protagonists are struggling under the weight of an oppressive society, but when they defy it even it spite of the pain it gives them and decide to make the best of the cards they've been dealt, regardless of what society thinks of them for it. Harge and the homophobic societal pressures he represents might be able to punish Carol for deviating outside the accepted heterosexual norm, but it cannot erase what Carol and Therese feel for each other or truly prevent them from pursuing each other even in spite of the consequences because they are committed to what they truly want. *The Price of Salt* is a queer love story that gives its queer characters narrative respect, even if they don't have any from other characters within the story. Thus, the ultimate message of *The Price of Salt* and its response to the Cold War discourse surrounding homosexuals and their place in society is an optimistic one: while U.S. society and government can control the public perception of queerness and can make it very difficult to live as queer person, it will never be able to fully eradicate queer people's existence or feelings of

queer love, nor can it prevent queer people from creating their own pockets of happiness. More than that, *The Price of Salt* shows that queerness is resilient: queer love can and will survive, and queer people can and will be happy.

It is not an uncomplicated or unambiguous happy ending: Carol and Therese loving each other won't change the fact that Carol has lost custody of her daughter, and it doesn't even guarantee that Carol and Therese's relationship will last forever, but it is an ending that seeks to provide an alternative to the popular narrative of the time, and especially the narrative in other novels, such as *Spring Fire*, where the moral standards of society demand that queer characters must be punished in some way for being queer, often by death or in some other way that ensures they will be thoroughly unhappy and miserable with themselves. In *Spring Fire*, one of the romantic leads ends up in a mental asylum while the other completely disregards her feelings as not real love. In *The Price of Salt*, the queer romantic leads end the story alive and together, and while it may not be happily ever after, it is, at least for the moment, happy.

Bibliography

Hesford, Victoria. "Patriotic Perversions: Patricia Highsmith's Queer Vision of Cold War America in 'The Price of Salt', 'The Blunderer', and 'Deep Water'." *Women's Studies Quarterly*, vol. 3., no. ¾, 2005, pp. 215-233. *JSTOR*, http://www.jstor.org/stable/4000442. Accessed 25 September 2017.

Highsmith, Patricia. *The Price of Salt*. 1952. Dover Publications, 2023.

Keller, Yvonne. "'Was It Right to Love Her Brother's Wife So Passionately?': Lesbian Pulp Novels and U.S. Lesbian Identity, 1950-1965." *American Quarterly*, vol. 57, no. 2, June, 2005, pp. 385-400. *JSTOR*, http://www.jstor.org/stable/40068271. Accessed 10 July 2011.

Packer, Vin. *Spring Fire*. 1952. E-book, SRS Internet Publishing.

S. Res. 280 – 81st Congress (1949 – 1951): Employment of Homosexuals and Other Sex Perverts in Government. (1950, December 15). https://mattachinesocietywashingtondc.org/wp-content/uploads/2015/03/document141.pdf

Spatial Models of the Supreme Court: The Importance of the Third Dimension to Explain Voting Patterns in the Modern Court

Madison Caputo

1. Introduction

The modern-era Supreme Court, different from many past courts due to conservative success in packing the court to be comprised of six conservative justices and three liberal justices, has overturned *Roe v. Wade* (*Dobbs v. Jackson Women's Health Organization*), established a precedent of presidential immunity (*Trump v. United States*), ruled that taking political bribes after court decisions is constitutional (*Snyder v. United States*), and generally abolished race-based affirmative action in higher education (*Students for Fair Admissions v. President and Fellows of Harvard College*). These decisions have upended general ideas regarding how the Supreme Court works, and many believe that the code of ethics governing the Supreme Court has been widely disregarded (Berman 2023; Shelden 2024). This has led to calls for greater formal restrictions and rules upon the Supreme Court, such as term limits, to preserve ethical standards (Bannon and Cordoba 2023; Wood 2024). To better understand these Supreme Court decisions, it is important to consider internal influences not aligned with traditional influences regarding decision-making. This can most easily be extrapolated spatially into a third dimension, which I will argue involves the influence of personal, financial, and political gain.

The third dimension is important in understanding the modern Court's decisions due to the ability of the dimension to capture complex dynamics of decision-making that the typical, historical understanding fails to conceptualize. The Supreme Court, while continuing to operate in its historical purpose, is entering an era of extremely conservative decisions. This has implications for future cases, precedents, and the way of life for many Americans. For instance, the focus the modern Supreme Court has placed on returning many key moral arguments back to the states will fundamentally alter the way of life for many United States citizens. Using the third dimension to spatially explain how Supreme Court Justices arrive at their decisions enables a more thorough and complete analysis of the decision-making processes, allowing further research to be done on Supreme Court reforms.

Previous analysis of Supreme Court Justice decision-making has relied upon two-dimensional models of choice to explain voting behaviors. The rational choice model and the attitudinal model, prominent models for explaining judicial decision-making, primarily use a two-dimensional model as the basis for the theory. In the rational choice model, the first dimension is prominent legal theory, typically taught in law school, and the second dimension is personal political ideology. In addition, regarding voting behavior, voters—such as legislators in a legislature or Supreme

Court Justices—will utilize rational behavior within their institutional context in order to more effectively achieve a preferred end goal (Epstein and Knight 1998). However, this model neglects the importance of relegating this rational behavior into its own separate third dimension. This third dimension is thus defined, for the purposes of this paper, as an additional factor beyond that of legal theory and political ideology—such as financial, social, or personal gain—that influences justices' voting behavior. When examining Supreme Court cases, from both the modern Court and past Courts, this third dimension presents itself as an important consideration for analyzing judicial decision-making.

This paper will attempt to spatially graph the importance and influence of the third dimension on the Supreme Court. To best achieve this, a new model built upon the Hotelling-Downs spatial model that introduces a negative range on the z-axis will be presented. This model will be described spatially using both an individual voter and multiple voters within an institutional context to detail the validity of the model as it pertains to the Supreme Court. Furthermore, the model introduced in this paper will utilize currently accepted characteristics of the Hotelling-Downs model of voting behavior, such as curves of indifferences and ideal points, in order to more effectively convey information.

As it relates to the modern Court, the three-dimensional model presents itself as an important and efficient method for explaining the decision-making of Supreme Court justices. Specifically, *Trump v. United States* and *Snyder v. United States*—both of which were decided in the 2024 Supreme Court session and had intriguing, surprising majority opinions (Wolf 2024)—can be best described spatially using a three-dimensional model, where the third dimension is defined as prestige and financial gain, respectively. These two case studies will provide insight into how the third dimension can be spatially detailed and the variances in how the third dimension can be quantified. Furthermore, these case studies will provide evidence for how impactful the third dimension is when compared to the first and second dimension.

2. Two-Dimensional Models

Most in-depth analysis focused on Supreme Court decision-making relies on a two-dimensional model, where the x-axis is based upon legal theory and the y-axis ideology, adapted from the Hotelling-Downs spatial model. A two-dimensional model is able to describe justices' decision-making that adheres to these principles, and it is used to describe many models of Supreme Court decision-making, such as the attitudinal model and the rational choice model. These spatial models all rely on the same basic assumption that Supreme Court justices operate as policy makers—a rather uncontested assumption in political science theory (Epstein and Knight 1998; Epstein and Knight 2013; Segal and Spaeth 2002)—and that Supreme Court Justices make decisions that maximize their preferences. In addition, they also rely on the

assumption that the most benefit a Justice can receive is through achieving their policy preferences through the second dimension. Because Justices are motivated by factors beyond their traditional commitments to legal theory and personal political ideology, this two-dimensional viewpoint fundamentally constricts the methods in which Supreme Court Justice decision-making can be analyzed and conceptualized.

The Hotelling-Downs spatial model of voting behavior is built upon a few commonalities that allow researchers and readers to effectively and quickly understand additional refinements as they are introduced. These commonalities are ideal points and curves of indifferences. As seen in Figure 1, spatial models utilize an ideal point to represent the most ideal policy outcome for a specific voter. This is within the institutional context of the plurality voting system. For example, in congressional spatial models, an ideal point represents a congressional member that has the ability to vote. The outer curve of the circle is referred to as the curve of indifference. This curve of indifference represents the farthest point from the ideal point, where anything that lies inside the curve of indifference is within the range of potential policy outcomes, in which the voter will be content with the outcome (Shepsle 1997; Black 1958; Downs 1957; Hotelling 1929; Hinich and Munger 1998; Adams 2019; Bourgeois-Gironde and Ferreira 2020; Tanner 1994). These commonalities are important to understand in the context of adding a third dimension, as a three-dimensional model will utilize and expand upon these commonalities.

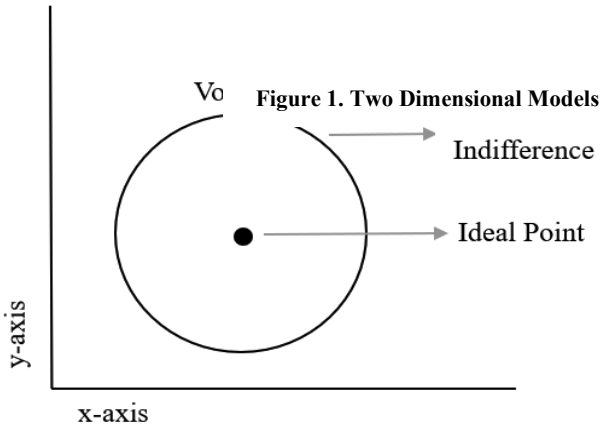


Figure 1. Two Dimensional Models

2.1. The First Dimension

The first dimension of the Supreme Court is much easier to determine than the first dimension of Congress. The prominent view is that justices are seekers of legal policy through legal interpretation of the Constitution (Segal and Spaeth 2002; Epstein and Knight 1998). This perspective holds that Justices deliver opinions based on their personal interpretation of the law, which is commonly taught to aspiring justices during law school. Thus, it is easy to determine that legal interpretation and theory is the first dimension of Supreme Court spatial models.

However, the methodology involving legal interpretation can vary quite heavily, typically along partisan lines.

There exist two theories in the United States for interpreting the Constitution, constitutional originalism and the living constitution. Constitutional originalism, commonly referred to simply as originalism, is typically associated with conservative justices. The main principle of constitutional originalism is that the Constitution invokes specific, non-evolving values that must remain rigid throughout its interpretation and implementation. This method of constitutional interpretation is designed to deeply embed constitutional rights within society to the point where they cannot be disregarded (Varol 2011). The originalist movement in the United States began as a conservative response to the sweeping liberal decisions of the Warren Court, and founders of the theory held that the only legitimate way of interpreting the Constitution was through understanding the original intent held by the framers of the Constitution (Post and Siegal 2006). The living constitution model, however, posits that the framers of the Constitution intentionally utilized general language in order to allow future generations to more effectively project the values of the Constitution onto new ideas and activities (Rehnquist 1976). The model first gained notoriety when Justice Holmes, in *Missouri v. Holland*, wrote that the Constitution must be realized to be, "a being of development of which could not have been foreseen completely by the most gifted of its begetters" (*Missouri v. Holland*). These two methods for constitutional interpretation can be predominantly prescribed to conservative and liberal justices, with conservative justices favoring originalism and liberal justices favoring the living constitution.

Thus, for the purposes of a spatial analysis regarding the Supreme Court, it is beneficial to consider the first dimension, noted as the x-axis, in terms of a sliding scale varying from complete adherence to originalism to complete adherence to the living constitution. The x-axis thus conveys a spatial representation of the values embodied by these two models of constitutional interpretation, as seen in Figure 2.

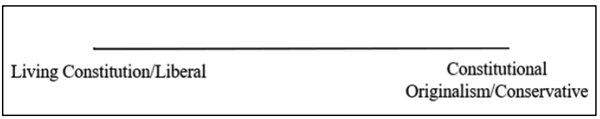


Figure 2. The X-Axis Visualized

2.2. The Second Dimension

The second dimension is typically regarded, in spatial models of Congress and the Supreme Court, as a value-determination into conservative versus liberal ideology. The most basic explanation for how the second dimension is calculated is by determining the political ideology of the Justice in question. While relating to the first dimension, as the first dimension implicitly implies a value-determination for

conservative and liberal Justices, the reasoning behind the second dimension can be extrapolated into further constructions of political ideology that relate to more than simple methods of constitutional interpretation. The second dimension goes further, assigning a value to the idea of a conservative Justice and a liberal Justice, where conservative Justices are more likely to favor certain policies or decisions while liberal Justices are more likely to favor others regardless of their preferred constitutional interpretation method. Essentially, a party divide exists within the Supreme Court that influences the decisions that Justices are making. This assumes that Justices are not impartial in their decisions.

For example, in *Bush v. Gore,* prominent conservative Justices adopted an anti-states' rights, anti-federalism stance. This went against what was expected, as, typically, conservative Justices are known for writing opinions and dissents that assert states' rights above all else. In the case of *Bush v. Gore*, conservative Justices adopted the best policy to enable the Republican presidential candidate, Bush, to win the presidential election. Although the conservative Justices created an opinion that was contradictory to typical conservative policy, the decision was almost completely split among partisan lines, with every conservative Justice voting for the opinion that enabled Bush to win. Justice Paul Stevens, in his dissent, wrote of the decision, "Although we may never know with complete certainty the winner of this year's presidential election, the identity of the loser is perfectly clear. It is the Nation's confidence in the judge as an impartial guardian of the rule of law." In this instance, it is clear to see that the second, ideological dimension mattered the most with regard to Justice voting and decision-making.

This Supreme Court party divide has been studied extensively throughout political science, and there have been many attempts to assign a value to individual Justice's relating to their political ideology based primarily on their opinions, concurrences, and dissents. Utilizing these variables, Justices can be placed along a unidimensional ideological scale. This scale can be utilized to determine, with relative accuracy, how Justices will vote on future cases. For instance, the unidimensional ideological scale has been used to determine how

Justices will vote with regard to individual rights, with conservative Justices typically voting against policies such as abortion rights and affirmative action and liberal Justices typically voting in favor of policies (Feldman 2024). Thus, this singular, ideological dimension can be utilized on the three-dimensional model as the second influential dimension. Furthermore, studies have been conducted on the current ideological makeup of the Supreme Court. Currently, the Supreme Court is much more conservative than in the past. The current Court has shifted from a moderate stance to a conservative stance, with a large shift occurring in 2021 (Jessee, Malhotra, and Sen 2022). This large shift can be attributed to the shift in the median voter with the confirmation of Justice Amy Coney Barret to the Supreme Court.

Within the context of plurality voting, the median voter theorem presents itself as a valuable tool for evaluating the decision-making process as it relates to the ideological split among Justices. The validity of the median voter theorem can be seen in the ideological differences of decisions that are present with each shift in the makeup of the Supreme Court.

The median (or middle) voter theorem is based heavily upon economic theory that has been extended onto political systems. Within the median voter theorem, the median voter is the most influential vote caster due to the nature of plurality voting systems. Within a plurality voting system, the candidate or preference with the most votes wins. When all the voters are lined up on a unidimensional, ideological line, the ideological median (or middle) voter, by nature, is going to cast the deciding vote. The reason is that no alternative can attract a majority of votes to defeat it, as this would require attracting the vote of the median voter who will not deviate from that position. Thus, the median voter holds the most power in determining the winning preference in plurality voting systems (Black 1958; Downs 1957). Within the Supreme Court, who the median voter is has the capacity to change drastically due to the nature of appointments. Due to this, the ideological median of each Court can be extremely different even though only one Justice may have changed. This has drastic implications for the opinions that are produced by each Supreme Court.

As it relates to the current Court, there have been many recent appointments that have changed the median voter, causing the statistically significant conservative shift. Notably, three conservative Justices were nominated from 2017 to 2020—Neil Gorsuch, Brett Kavanaugh, and Amy Coney Barret, respectively (United States Senate 2022). Due to these nominations, the Court's ideological mean shifted to the right. Before Justice Amy Coney Barret's appointment to the Supreme Court, the ideological mean was Chief Justice John Roberts. Roberts, while leaning conservative, is regarded as a moderate on the current Court (Brennan-Marquez 2014; Rhyne 2023). However, after Justice Amy Coney Barret was appointed, Kavanaugh, regarded as more conservative than Roberts, became the new ideological median voter (Golde 2021). This is the primary driving force in the conservative shift seen in Figure 4, as a shift to a more conservative median voter would result in more conservative results.

Thus, with the clear distinction between Justices that ideological lines create, such as in the case of *Bush v. Gore*, and with the centrality of the median voter defined, the importance of defining the second ideological dimension beyond the first dimension becomes clear. Firstly, many opinions from the Supreme Court have been clearly decided based upon ideological lines, such as the *Bush v. Gore* case. Additionally, within the context of plurality voting systems, the median voter is the most important voter for defining the ideology of opinions produced by the Supreme Court during certain terms. These clear, definable, and easily measurable variables

make defining the second dimension straightforward, enabling the third dimension to be determined easily.

3. Introducing The Third Dimension

Within political science research, most examination of the "Third Dimension," as it relates to voting decisions, has regarded Congress. This viewpoint neglects the large influence that the Supreme Court has on laws that relate to the average citizen in the United States. Current literature makes the assumption that Supreme Court opinions are primarily based upon the previously discussed first and second dimensions of decision-making, where law, precedent, policy preferences, and personal values matter (Segal and Spaeth 1993; Epstein and Koblyka 1992; Perry 1991). However, the introduction of a third dimension can aid in accurately explaining how Supreme Court decision-making occurs.

The third dimension can be ascertained into values of selfishness compared to selflessness with regard to financial and political, or power, gain, where a Justice who is selfless would be influenced very little by the third dimension and a Justice who is selfish would be influenced heavily by the third dimension. This dimension of influence differs from the first and second dimension primarily because there is no legal or political justification for it. For instance, a Justice who desires notoriety might make voting decisions based upon this desire, where no legal theory can justify this desire. Similarly, a Justice who desires money might make voting decisions based upon potential money or gifts from donors or other revenue avenues.

For example, Justice Samuel Alito has been involved in many different ethical concerns regarding financial benefit from his position as a Supreme Court Justice. Most notably, Alito, in 2008, was involved in an expensive, luxurious fishing vacation sponsored by billionaire Paul Singer. Singer flew Alito to Alaska on a private jet, with flight costs alone exceeding $200,000. When Singer came before the Supreme Court in a battle between his hedge fund and Argentina, Alito voted with the majority in favor of Singer, giving Singer $2.4 billion (Elliot, Kaplan, and Mierjeski 2023b). Similarly, Justice Clarence Thomas has received fully funded trips filled with lavish resorts and large, fully staffed yachts, one of which would have cost Thomas over $500,000. Republican billionaire Harlan Crow funded the trip in its entirety. At many of these trips, influential conservative activists, such as Leonard Leo, and corporate executives, such as from Verizon, have been in attendance (Kaplan, Elliot, and Mierjeski 2023b). These instances of Justices placing their own interests above their position, especially in the case of Alito where he ruled in favor of the person who gave him financial gifts, show that there is at least some level of selfishness with regard to personal gain that is involved in the Justice decision-making process.

Thus, it becomes necessary to define a third dimension to Supreme Court Justice decision-making—personal gain. This is because the dimension of personal

gain in Supreme Court cases has historically been influential, such as in the previously discussed cases of Justice Alito and Justice Thomas. As such, the dimensions of Justice decision-making can be determined to be constitutional interpretation or legal theory, political ideology, and personal gain.

4. Graphing Judicial Decisions Three-Dimensionally

The third dimension must be extrapolated onto a spatial model in the negative, shown three-dimensionally in Figure 5, where 0 is located on the plane of the traditional two-dimensional model and -1 is located below the plane. This three-dimensional model is adapted and modified from Kenneth Shepsle's model of three-dimensional spatial models of congressional voting patterns (Shepsle 1997). The highest "circle" represents the current accepted portrayal of two-dimensional voting behavior, where the x-axis is the first dimension and the y-axis the second dimension (Adams 2019; Tanner 1994; Sheplse 1997). These two axes, and where Justices lie on them, create the highest circle. The third dimension, shown by the z-axis, represents personal gain in the form of political pedigree, power, or financial gain. As a Justice is more affected by this third dimension, the Justice is placed lower on the z-axis, where 0 equals no effect by the third dimension and -1 is complete affect by the third dimension. A simple method for regarding the z-axis in this model is that 0 equals absolute selflessness and -1 equals complete selfishness.

This negative third dimension can further be represented in the two-dimensional plane for ease of understanding in the institutional context of Supreme

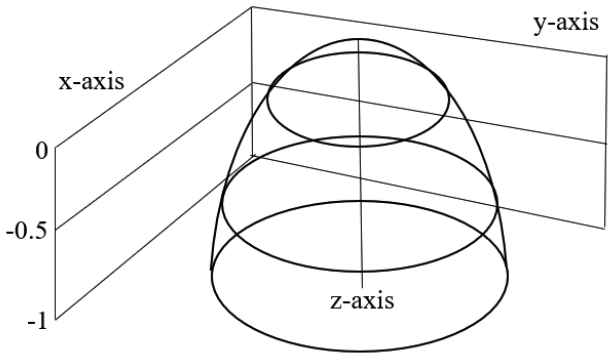


Figure 5. The Negative Third Dimension

Court plurality voting. As shown in Figure 6, the z-values of 0, -0.5, and -1 are represented by the inner, middle, and outer circles on the two-dimensional plane, respectively.

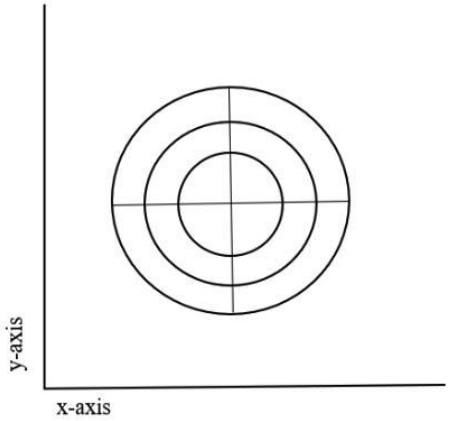


Figure 6. Extrapolating to Two Dimensions

When spatially graphing judicial voting patterns, however, it is necessary to consider the fact that the spatial graphing of a majority vote will include multiple voters. Previous graphs and explanations in this thesis have detailed the third dimension as it pertains to one singular voter; however, the decisions of the Supreme Court do not occur in a vacuum. Spatial models exist to simplify the complexity of plurality voting. As such, it is necessary to detail how the third dimension is modeled with multiple Supreme Court Justices.

With the third dimension, the curve of indifference gets larger as the z-value becomes more negative. Thus, with two Justices who have a z-value of -1 and do not agree based upon their first and second dimension, their original curves of indifferences do not overlap; however, their curves of indifferences at it relates to the z-value of -1 do overlap. This is visualized in Figure 7. This creates a scenario where two Justices who fundamentally disagree on the principles of a legal matter—both in legal theory and ideology—would vote the same due to the interception of the third dimension in the indifference curve. This presents a new way for understanding how the Supreme Court comes to a majority decision, as Justices voting in the majority might be doing so due to their desire for personal gain.

5. Explaining The Modern Court

The modern Court, as previously discussed, has become increasingly conservative. While this might be explained, in part, by the change to a more ideologically conservative median voter, this does not capture the full scope of what is occurring. This is because, while the Court has become more conservative, the types of decisions coming out of the Court are more than simply conservative. They reflect a Supreme Court that is influenced by the desire for personal gain in finances and political prestige and is unrestricted in its conservative majority. Thus, the third dimension can be utilized to explain the Justice decision-making that culminates in these majority opinions and, therefore, explain the multitude of changes that are

occurring in the Supreme Court. To evaluate the ability of the third dimension to explain Justice decision-making, two recent Supreme Court cases will be analyzed: *Trump v. United States* and *Snyder v. United States*. These cases will show that the presence of the third dimension on Justice decision-making is prominent and causes voting to be altered.

5.1. *Trump v. United States*

The case of *Trump v. United States* presents an interesting set-up, as the case was quite different from the typical Supreme Court case in terms of scope and consequences. The Court, ruling on matters involving the executive branch, presents the difficult political question as to whether the judicial branch should influence the executive branch in such a manner. Due to the intriguing nature of the case, the Justices utilized the third dimension of decision-making in order to come to their final opinion. This can be seen most prominently in Amy Coney Barretts concurrence with the majority.

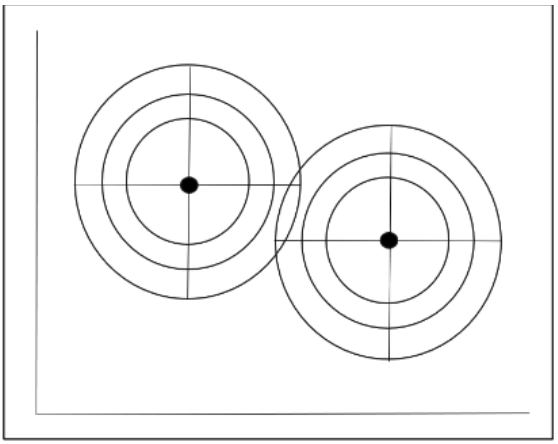


Figure 7. The Third Dimension with Multiple Justices

In *Trump v. United States*, the stakes for the Supreme Court were incredibly high. For the first time in the Nation's history, a former President was on trial for actions taken during time in office. Then former President Donald J. Trump was charged with four counts of conspiring to overturn the 2020 Presidential election through the spreading of knowingly false claims of election fraud in order to limit the ability of officials to collect, count, and certify election ballots and results. Trump argued that, as the actions were taken during his Presidency, these actions were immune to criminal prosecution on the grounds of Presidential immunity. The Court held that absolute Presidential immunity existed for official acts, even after the office has been relinquished, but not for unofficial acts (*Trump v. United States*). Even with a brief overview of the case, one can see how the details of the case could lead to certain tendencies from Justices that deviate from the first and second dimension. Furthermore, there exist additional broad details that further point to Justices utilizing the third dimension in their decision-making process. For one, three of the Justices were appointed by Trump, causing personal conflicts of interest (United States Senate 2022). Secondly, Justice Thomas' wife had electronically messaged

those close to Trump immediately following the 2020 election advocating for the overthrowing of the election (Cooney 2022). These immediate details of the case give validity to the idea that more than the first and second dimension were utilized by Justices in their decision-making. However, in order to fully understand the decision-making of the Justices in this case, it is necessary to analyze the opinions, concurrences, and dissents in their entirety.

The majority opinion was written by Chief Justice Roberts and was joined by Justice Alito, Justice Gorsuch, and Justice Kavanaugh. When analyzing the majority opinion, the main reasoning becomes quite clear: the President must be able to make quick actions with regard to official acts without fear of criminal prosecution (*Trump v. United States*). However, this begs the question as to what the Court is envisioning as official actions the President must complete that would be considered criminal, besides the actions of the then former President who nominated them for the Supreme Court. Thus, within the previously mentioned conflict of interest, it is easy to see how the third dimension would be present. Conservative Justices might not be willing to defy the person who enabled them to become so politically powerful.

This hesitation of conservative Justices to rule against Trump can be observed throughout Justice Amy Coney Barrett's concurrence in the case. Despite concurring, Justice Barret disagrees with a large portion of the majority opinion. Specifically, she explicitly wrote that she agreed with Justice Sotomayer's dissent and disagreed with the majority. In her concurrence, Justice Barrett wrote, "A president facing prosecution may challenge the constitutionality of a criminal statute as applied to official acts alleged in the indictment… If that challenge fails, however, he must stand trial." She further wrote, "The Constitution does not require blinding juries to the circumstances surrounding conduct for which Presidents can be held liable" (*Trump v. United States*). Despite her opinion reading as if it was a dissent, Justice Barrett concurred with the majority. The first and second dimensions did not drive her concurrence, seen explicitly in the reasoning present in her concurrence. Specifically, Justice Barrett disagreed with the majority on ideological lines and constitutional interpretation. The third dimension, however, can explain her concurrence. In this case, Justice Barrett was influenced by her personal relationships with her fellow conservative Justices and the defendant. As seen in Figure 8, these personal relationships caused her to vote slightly more conservatively

than she would have if she would've only been influenced by the first and second dimensions.

In addition to this, the Court purposefully made no ruling on the indictment against Trump alleging election interference while simultaneously arguing that official acts cannot be criminally prosecuted. Specifically, the Court made no mention at all, such as agreement or disagreement with, of Trump's indictment. The Court only ruled on Trump's claims that he had Presidential immunity, not whether it applied in this particular instance. Instead, the Court made the claim that it was up to the Courts to determine if Trump, and any potential future Presidents, had acted in an official capacity (*Trump v. United States*). This offers a huge insight into the reasoning of the Court—in particular, one of the main reasons for the decision itself. That is to say, the lack of recognition of Trump's current indictment in a potentially criminal act is due to the third dimension—desire for personal gain in the form of political power.

In their decision, the Court essentially established that all future Presidents, even once they are no longer acting as President, must come before the Courts in the case of a criminal trial in order for the Judges to decide if the President's actions were official or not. With no definition for "official acts" given by the Court (*Trump v. Snyder*), it is completely up to Justices whether a certain act was part of a President's "official duties." This gives the judicial branch a disproportionate

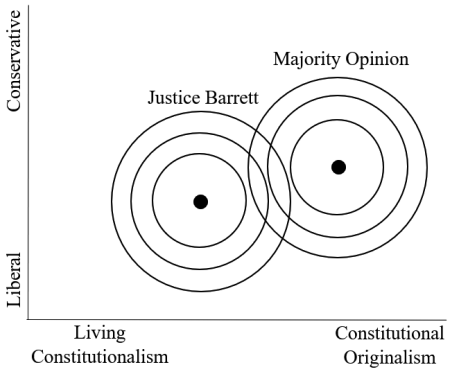


Figure 8. Justice Amy Coney Barrett in *Trump v. Snyder*

amount of power over the executive and legislative branch. Thus, the decision of the Justices in this case gives current and future Justices a large amount of political power with regard to determining legality of Presidential acts. Thus, one can conclude that this aspect of the majority opinion was influenced by the majority Justices desire for political power—the influence of the third dimension.

Through analyzing the case of *Trump v. Snyder*, the influence of the third dimension as it relates to personal relationships and political power can easily be seen. As seen through the reasoning in Justice Amy Coney Barret's concurrence, her adherence to the majority opinion arose from the influence of the third dimension, specifically as it relates to her personal affiliations. Furthermore, the Court went further in creating the precedent that Justices must be the ones determining if Presidential acts are official, giving Justices the authority to determine if Presidents have committed actions that can be criminally charged. This is a huge power grab by the majority, and it shifts the balance of government powers to favor the judicial branch. This gives Justices a disproportionate amount of power over the executive, and future Presidents will act according to whether they believe the judicial branch will give them amnesty. Thus, the third dimension in this specific case has fundamentally altered the way in which the branches of government interact with each other.

5.2. *Snyder v. United States*

Snyder v. United States presents an interesting case for determining the scope of the third dimension on Justice decision-making since it deals with financial gain as it relates to a person within a government position. The Court's specific reasoning was that government officials, under current law, can accept "gratuities," defined as being accepted after-the-fact, but not accept "bribes." This shows that, in this particular case, the influence of the third dimension was strong with regard to Justices who voted in the majority.

In *Snyder v. United States*, the former mayor of Portage, Indiana, James Snyder, purchased around $1 million in trucks from the Great Lakes Peterbilt company. A few months later, Snyder was given $13,000 by the owners of the company. Three years later, Snyder was charged with violating a law, 18 U. S. C. §666, that prohibits state and local officials from "corruptly" soliciting or accepting anything of value worth more than $5,000 as a reward for official business. The Court reasoned that 18 U. S. C. §666 referred to bribes rather than gratuities based upon its language that closely resembles that of the federal bribery statute, congressional history in modelling the law after the bribery statute, punishments similar to the bribery statute, the desire to preserve states' rights, and desire to avoid ambiguity (*Snyder v. United States*). In this case, all of the conservative Justices were in the majority and all of the liberal Justices dissented. While this makes it appear as if the case is being decided mostly along ideological lines, this is not the case. Rather, *Snyder v. United States* was, in part, influenced by the third dimension.

It would be erroneous to neglect the influence of the first and second dimensions in this case. For one, the reasoning of the Court hinged upon the history of the statute as well as the perceived congressional intent when writing it, showing reasoning along the first dimension. Secondly, all of the Justices in the majority were

conservative, and none of the liberal Justices voted in the majority. Furthermore, the reasoning heavily favored a state's rights approach, typically associated with conservatism. This alludes to partisanship, or the second dimension, being an influence, as well. However, the presence of the first and second dimensions does not prohibit the third dimension from being influential in Justice decision-making, as all three dimensions can influence decision-making simultaneously. There is seldom, in all areas of life, one sole factor that impacts decision-making.

The third dimension is present on *Snyder v. United States*, specifically with regard to desire for financial gain. As previously detailed, multiple Supreme Court Justices have been involved in accepting money or gifts of high value from influential individuals who have a stake in Supreme Court decisions, such as being directly involved in a case or being in an industry highly affected by Supreme Court decisions. For instance, Justice Clarence Thomas, who voted in the majority, has been involved in many financial instances that could potentially be considered as bribes. In 2014, billionaire Harlan Crow purchased a property from Justice Thomas, his late brother, and his mother. This property was the residence of Justice Thomas's mother. Crow proceeded to spend large amounts of money on renovations, and he allows Justice Thomas's mother to continue to live in the house for free. Despite laws requiring Justices to disclose real estate sales over $1,000, Justice Thomas neglected to disclose the sale (Elliot, Kaplan, and Mierjeski 2023a). These actions point to a conflict of interest between prior Justice actions and the actions of the defendant, showing the effect of the third dimension.

Furthermore, the specific reasoning within the case shows the presence of the third dimension on the decision. Specifically, the majority opinion asserts that gratuities, which are legally permissible, can be defined by the fact that they occur after an official action has occurred. A bribe, however, occurs before the official action. This time difference, the Court reasoned, is the main determinant of legality based upon the language of the statute (*Snyder v. United States*). Interestingly, for the financial gifts received by the Supreme Court Justices, most gifts were given with no specific connection to official actions. Thus, they could easily be considered as being gifted after an official action has occurred, causing the financial gifts given to Justices to be legal.

Within this case, Justices were asked to create policy that would disproportionately, personally affect them and their financial dependents. That is, if the Justices were to rule that government officials are unable receive gifts similar in nature to the gifts given to Snyder, it would directly cause the Justices own behavior regarding gifts to no longer be legal. Unsurprisingly, the Supreme Court Justices were hesitant to create a policy that would have a significant negative effect on their personal lives. Thus, it is easy to conclude that the decision and decision-making process was, in part, impacted by the third dimension.

6. Conclusion

The third dimension can be utilized to effectively understand the surprising decisions of the modern Court. Defined in a negative z-axis, the third dimension can be extrapolated onto a two-dimensional model, enabling ease of understanding for complex scenarios. The case studies further show that the third dimension is a prominent factor in Justice decision-making. The case of *Trump v. United States,* hidden deep within the reasoning of the case, shows how desire for political power can subtly shape the majority opinion of the Court. *Snyder v. United States,* on the other hand, provides insight into a case where the first, second, and third dimensions are all influential in Justice decision-making, causing the reasoning to be based upon ideological lines but the result to be based upon the desire for financial gain.

As these cases show, the use of the third dimension to explain the modern Court's decisions is necessary. The first and second dimensions capture only a portion of Justice decision-making, and it would be foolish to believe that Justices are not, at least to some degree, influenced by their own personal, selfish desires. Secondly, as was the case in Justice Amy Coney Barrett's concurrence in *Trump v. Snyder*, the third dimension has the ability to completely switch a Justices' vote from a dissent to a concurrence without changing that Justices ideology or preferred Constitutional interpretation.

However, it is necessary to further evaluate the third dimension with regard to Supreme Court Justice decision-making. Specifically, research must be conducted on the influence of the third dimension on decision-making. There are many questions left with regard to the third dimension's scope of influence. Influence has the potential to remain relatively invariable; however, it could also change in value depending on the case before the Court. For instance, a case that has the potential to negatively affect Justice finances might cause Justices to be more affected by the third dimension. This has the potential to alter the size of the curve of indifference as it relates to the z-axis, changing how the spatial model would operate. This thesis aids in the endeavor to further research in this area, hopefully enabling more effective reforms to be proposed and enacted.

*Figures courtesy of the author.

References

Adams, James F. 2019. "Spatial Voting Models of Party Competition in Two Dimensions." Edited by Roger D. Congleton, Bernard Grofman, and Stefan Voigt. *The Oxford Handbook of Public Choice, Volume 1* 1 (February): 186–207. https://doi.org/10.1093/oxfordhb/9780190469733.013.10.

Alicia Bannon, and Michael Milov-Cordoba. 2023. “Supreme Court Term Limits | Brennan Center for Justice.” Brennan Center for Justice. September 20, 2023. https://www.brennancenter.org/our-work/policy-solutions/supreme-court-term-limits.

Berman, Dan. 2023. “Supreme Court Attempts to Address Ethics Concerns with New Code of Conduct but Leaves Many Questions Unanswered | CNN Politics.” CNN. November 13, 2023. https://www.cnn.com/2023/11/13/politics/supreme-court-announcement/index.html.

Black, Duncan. 1958. *The Theory of Committees and Elections*. Cambridge: Cambridge University Press.

Brennan-Marquez, Kiel. 2014. “The Philosophy and Jurisprudence of Chief Justice Roberts.” *Utah Law Review* 2014 (1): 4. https://dc.law.utah.edu/cgi/viewcontent.cgi?referer=&httpsredir=1&article=1119&context=ulr.

Bourgeois-Gironde, Sacha, and João V. Ferreira. 2020. “Conflicted Voters: A Spatial Voting Model with Multiple Party Identifications.” *Journal of Economic Behavior & Organization* 174 (June): 360–79. https://doi.org/10.1016/j.jebo.2016.12.003.

Cooney, Dan. 2022. “Who Is Ginni Thomas and Why Is She Important to the Jan. 6 Hearings?” PBS NewsHour. June 17, 2022. https://www.pbs.org/newshour/politics/who-is-ginni-thomas-and-why-is-she-important-to-the-jan-6-hearings.

Dobbs v. Jackson Women’s Health Organization, 597 U.S. __ (2022)

Downs, Anthony. 1957. *An Economic Theory of Democracy*. New York: Harper & Row.

Elliot, Justin, Joshua Kaplan, and Alex Mierjeski. 2023a. “Harlan Crow Bought Property from Clarence Thomas. The Justice Didn’t Disclose the Deal.” ProPublica. April 13, 2023. https://www.propublica.org/article/clarence-thomas-harlan-crow-real-estate-scotus.

Elliott, Justin, Joshua Kaplan, and Alex Mierjeski. 2023b. “Justice Samuel Alito Took Luxury Fishing Vacation with GOP Billionaire Who Later Had Cases before the Court.” ProPublica. June 20, 2023. https://www.propublica.org/article/samuel-alito-luxury-fishing-trip-paul-singer-scotus-supreme-court.

Epstein, Lee, and Jack Knight. 1998. *The Choices Justices Make*. Washington, D.C.: Cq Press.

———. 2013. “Reconsidering Judicial Preferences.” *Annual Review of Political Science* 16 (1): 11–31. https://doi.org/10.1146/annurev-polisci-032211-214229.

Epstein, Lee, and Joseph Kobylka. 1992. *The Supreme Court and Legal Change : Abortion and the Death Penalty*. Chapel Hill: University of North Carolina Press.

Feldman, Adam. 2024. “Charting the Justices Decisions Cutting across Ideological Lines.” Empirical SCOTUS. April 2024. https://empiricalscotus.com/2024/04/01/charting-the-justices-decisions-cutting-across-ideological-lines/.

Golde, Kalvis. 2021. “In Barrett’s First Term, Conservative Majority Is Dominant but Divided.” SCOTUSblog. July 2, 2021. https://www.scotusblog.com/2021/07/in-barretts-first-term-conservative-majority-is-dominant-but-divided/.

Hinich, Melvin J, and Michael C Munger. 1998. *Analytical Politics*. Cambridge: Cambridge University Press.

Hotelling, Harold. 1929. *Stability in Competition*. London.

Jessee, Stephen, Neil Malhotra, and Maya Sen. 2022. "A Decade-Long Longitudinal Survey Shows That the Supreme Court Is Now Much More Conservative than the Public." *Proceedings of the National Academy of Sciences* 119 (24). https://doi.org/10.1073/pnas.2120284119.

Kaplan, Joshua, Justin Elliott, and Alex Mierjeski. 2023. "Clarence Thomas Secretly Accepted Luxury Trips from Major GOP Donor." ProPublica. April 6, 2023. https://www.propublica.org/article/clarence-thomas-scotus-undisclosed-luxury-travel-gifts-crow.

Perry, H. W. 1991. *Deciding to Decide: Agenda Setting in the United States Supreme Court*. Harvard University Press.

Post, Robert, and Reva Siegal. 2006. "Originalism as a Political Practice: The Right's Living Constitution." HeinOnline. Fordham Law Review. 2006. https://heinonline-org.ezproxy.lib.ou.edu/HOL/Page?collection=journals&handle=hein.journals/flr75&id=563&men_tab=srchresults.

Quinn, Kevin. 2012. "The Spatial Model of Voting: Theory and Empirics CSLS Empirical Methods Workshop." https://www.law.berkeley.edu/files/Quinn-Slides.pdf.

Rehnquist, William. 1976. "The Notion of a Living Constitution." HeinOnline. Texas Law Review. 1976. https://heinonline-org.ezproxy.lib.ou.edu/HOL/Page?collection=journals&handle=hein.journals/tlr54&id=723&men_tab=srchresults.

Rhyne, William. 2023. "Chief Justice John Roberts and the Combination of Conservatism and Institutionalism." Illinois Law Review. August 31, 2023. https://illinoislawreview.org/uncategorized/chief-justice-john-roberts-and-the-combination-of-conservatism-and-institutionalism/.

Segal, Jeffrey, and Harold J Spaeth. 1993. *The Supreme Court and the Attitudinal Model*. Cambridge University Press.

Segal, Jeffrey A, and Harold J Spaeth. 2002. *The Supreme Court and the Attitudinal Model Revisited*. Cambridge University Press.

Shelden, Rachel. 2024. "A Transformed Supreme Court Requires Different Solutions." Brennan Center for Justice. October 2, 2024. https://www.brennancenter.org/our-work/analysis-opinion/transformed-supreme-court-requires-different-solutions.

Shepsle, Kenneth A. 1997. *Analyzing Politics: Rationality, Behavior, and Institutions*. New York: W.W. Norton & Co.

Snyder v. United States, 603 U.S. __ (2024)

State of Missouri v. Holland, 252 U.S. 416 (1920).

Students for Fair Admissions v. President and Fellows of Harvard College, 600 U.S. __ (2023)

Tanner, Thomas. 1994. “The Spatial Theory of Elections: An Analysis of Voters’ Predictive Dimensions and Recovery of the Underlying Issue Space.” Iastate.edu. Iowa State University. 1994. https://dr.lib.iastate.edu/entities/publication/f279b12d-020a-4944-a735-5d296d01c276.

Trump v. United States, 603 U.S. __ (2024)

United States Senate. 2022. “U.S. Senate: Supreme Court Nominations (1789-Present).” Www.senate.gov. United States Senate. 2022. https://www.senate.gov/legislative/nominations/SupremeCourtNominations1789present.htm.

Varol, Ozan. 2011. “The Origins and Limits of Originalism: A Comparative Study.” HeinOnline. Vanderbilt Journal of Transnational Law. 2011. https://heinonline-org.ezproxy.lib.ou.edu/HOL/Page?collection=journals&handle=hein.journals/vantl44&id=1265&men_tab=srchresults.

Wolf, Thomas. 2024. “Supreme Court’s Radical Immunity Ruling Shields Lawbreaking Presidents and Undermines Democracy | Brennan Center for Justice.” Www.brennancenter.org. July 2, 2024. https://www.brennancenter.org/our-work/analysis-opinion/supreme-courts-radical-immunity-ruling-shields-lawbreaking-presidents-and.

Wood, Diane. 2024. “Why Term Limits for Supreme Court Justices Make Sense.” Brennan Center for Justice. 2024. https://www.brennancenter.org/our-work/analysis-opinion/why-term-limits-supreme-court-justices-make-sense.

Across the Pond: A Comparative Analysis of US and UK Community Solar Regulations

Anna Hyslop

Introduction

The threat of climate change challenges a foundational assumption of energy law: that centralized energy generation and regulation "can most effectively and efficiently"[39] support our electricity needs. National action on energy regulation encounters corporate opposition and partisan gridlock, delaying necessary measures that aim to shift our energy supply.[40] Local communities have increasingly turned to alternative generation options—including community energy—to compensate for federal and state failings.

Consensus regarding a precise definition of community energy does not presently exist. Scholars and practitioners "infer varying degrees of community involvement"[41] in such projects, complicating any attempt to determine a clear meaning of the phrase. Rather than deriving my own definition of community energy, I have elected to contextualize my paper with a definition provided by Seyfang et al. (2013). These scholars define community energy as "those projects where communities…exhibit a high degree of local ownership and control."[42] Projects can include community-scale "wind turbines and solar farms…mini-hydroelectricity schemes…[and] locally-owned energy distribution networks."[43]

Leonhardt et al. (2022) conducted a literature review focusing on papers that highlighted a range of government instruments and policies dedicated to promoting community energy. Around 80% of these papers focus on a European context, while only 9% of the selected papers focus on North America.[44] The authors attribute this finding to Europe's leadership in

[39] Shelley Welton, "Public Energy," N.Y.U. L. Rev. 92 (2017): 270.
[40] Jonathan Rutheford and Olivier Coutard, "Urban Energy Transitions: Places, Processes and Politics of Socio-Technical Change," *Urban Studies* 51, no. 7 (2014): 1369.
[41] Gill Seyfang et al., "A thousand flowers blooming? An examination of community energy in the UK," *Energy Policy* 61 (2013): 978.
[42] Ibid.
[43] Richard J. Hewitt et al., "Social Innovation in Community Energy in Europe: A Review of the Evidence," *Frontiers in Energy Research* 7 (2019).
[44] Renata Leonhardt et al., "Advancing local energy transitions: A global review of government instruments supporting community energy," *Energy Research & Social Science* 83 (2022).

community energy, with countries like Germany, Denmark, and the UK pioneering developments within the sector.[45]

This fact, however, offers only a partial explanation for the considerable difference in the amount of attention bestowed upon European versus North American community energy policy. I wanted to understand the quantitative and qualitative differences between the sectors in each region, so as to offer context for the comparative lack of scholarly research on North American community energy governance. Accordingly, I decided to pursue a partial comparison of community energy prevalence and policy in the two regions, subject to three primary constraints. First, I focused exclusively on community solar due to the prevalence of this form of community energy and the availability of relevant data. Second, I limited the scope of my international analysis to the United States and the United Kingdom—excluding Northern Ireland—for the sake of brevity. Thus, my findings do not represent a comprehensive review European or North American regulation. However, the information that I consider still reveals novel insights into community solar in the US and the UK that may prove useful to other researchers looking to understand the sector. Third, I concentrated my discussions of specific community solar regulations on grid interconnection policies rather than land use regulations.

I begin by presenting the data I collected on the amount of community solar in the US and the UK. Then, I detail electricity regulations within the UK and highlight community solar-specific policies. I provide the same information for community solar in the US. My analysis of the data and relevant regulations reveals that while the US has a greater volume of community solar, the UK's regulatory structures are better suited to community solar interconnection, as such structures possess national uniformity.

Data

Before detailing UK and US community solar regulations, I wanted to offer a comparison of physical capacity in Table 1. I used data from the National Renewable Energy Laboratory (NREL) in the US and Community Energy England (CEE) in the UK to determine the number of megawatts (MW) of community solar each country possesses. I then employed the most recently released population data from the US Census Bureau and the UK Office for National Statistics to highlight MW per capita. The figures that reveal

[45] Ibid; Hewitt et al., "Social Innovation in Community Energy in Europe," 2019; Annalisa Savaresi, "The Rise of Community Energy from Grassroots to Mainstream: The Role of Law and Policy," *Oxford Journal of Environmental Law* 31 (2019): 493-494.

community solar's share of each country's generating capacity employ 2023 generation data from the US Energy Information Administration (EIA) and the UK Department for Energy Security and Net Zero.

According to NREL, the US possesses 7,870 megawatts (MW) of community solar.[46] Great Britain, on the other hand, possesses approximately 228 MW.[47] In absolute terms, the difference in community solar capacity between the two countries is quite large. The same description may also be applied to relative comparisons. The US possesses more MW per capita than the UK. Additionally, community solar compromises a larger portion of the US's total generation capacity and renewable generation capacity than it does in the UK. Given the UK's recognized status as a leader in community energy,[48] this data appears initially surprising and seems to suggest a need for further research on community solar projects in the US. The remainder of this paper addresses the regulatory underpinnings of community solar in both the US and the UK, thereby providing a portion of the "further research" required.

UK Policies

Electricity systems within the UK consist of intangible and tangible components. Intangible elements include the wholesale and retail electricity markets. Wholesale transactions occur between electricity generators and suppliers in a competitive market.[49] Retail transactions, on the other hand, involve the sale of electricity between end-use customers and suppliers in a competitive marketplace.[50] These transactions manifest physically in the transmission and distribution networks, respectively. This section describes basic electricity market and infrastructure regulations in the UK, with additional focus given to community solar interconnection procedures.

I. General Regulation

[46] Kaifeng Xu et al., "Sharing the Sun Community Solar Project Data (June 2024)," NREL Data Catalog, Golden, CO: National Renewable Energy Laboratory (NREL), last modified September 25, 2024.
[47] This figure is likely an underestimate, as several data points were missing from my calculations. I added up all available community solar capacity counts as provided by Community Energy England's (CEE) National Community Energy Map. (Source: "Community Energy in England (map)," CEE, last modified July 2024).
[48] Leonhardt et al., "Advancing local energy transitions," 2022; Hewitt et al., "Social Innovation in Community Energy in Europe," 2019; Savaresi, "The Rise of Community Energy," 2019.
[49] Suzanna Hinson, "Electricity Grids," House of Commons Library, Briefing Paper Number 8472, January 8, 2019: 12.
[50] Ibid.

The Electricity Act of 1989 privatized generation and transmission services within the UK.[51] Notably, this act also required energy firms to receive licenses for providing such services to consumers, which entailed the establishment of independent regulatory bodies. Today, the Office of Gas and Electricity Markets (Ofgem) issues licenses to electricity companies and regulates electricity markets in Great Britain.[52] Ofgem's control over licensing procedures allows the office to exercise influence over generation, transmission, and retail supply operations throughout the UK.[53]

Ofgem's responsibilities over electricity markets extend to price and industry code regulations. Ofgem sets the energy price cap for retail supply, defined as "the maximum price that energy firms are allowed to charge households on their default tariffs."[54] The price cap restricts the unit price of energy measured in kilowatt-hours (kWh).[55] Ofgem also determines price controls for transmission networks through RIIO-T2.[56] Additionally, distribution and transmission operating codes are overseen at the highest level by Ofgem. Each code has its own Code Administrator that acts as the point of contact for the code.[57]

Evidently, Ofgem exercises a high degree of authority over the UK's electricity markets. This authority extends to the physical infrastructure underlying such markets. Ofgem provides the license to operate for the National Electric Systems Operator (NESO) in Great Britain.[58] NESO balances supply and demand for electricity across the entire system through the Electricity National Control Centre.[59] NESO also operates the national high-voltage transmission infrastructure, owned by three different network providers: National Grid in England and Wales, SP Energy Networks in central

[51] Ibid, 9.
[52] Nathaniel Amos, "Ofgem," Institute for Government, December 21, 2022; "Energy Policy and Regulation," Ofgem, https://www.ofgem.gov.uk/energy-policy-and-regulation.
[53] Amos, "Ofgem," 2022.
[54] Olly Bartrum, "Energy price cap," Institute for Government, November 24, 2022; "Energy price cap (default tariff) policy," Ofgem, https://www.ofgem.gov.uk/energy-policy-and-regulation/policy-and-regulatory-programmes/energy-price-cap-default-tariff-policy.
[55] Bartrum, "Energy price cap," 2022.
[56] "Network price controls 2021-2028 (RIIO-2)," Ofgem, https://www.ofgem.gov.uk/energy-policy-and-regulation/policy-and-regulatory-programmes/network-price-controls-2021-2028-riio-2.
[57] "Industry codes and standards," Ofgem, https://www.ofgem.gov.uk/energy-policy-and-regulation/industry-codes-and-standards.
[58] "What does the Electricity National Control Centre do?" National Energy System Operator (NESO), https://www.neso.energy/what-we-do/systems-operations/what-does-electricity-national-control-centre-do.
[59] Ibid.

and southern Scotland, and Scottish and Southern Electricity (SSE) Networks Transmission in north Scotland.[60]

NESO utilizes the transmission infrastructure owned by National Grid, SP Energy and SSE to "pass high voltage electricity onto Distribution Network Operators (DNOs)."[61] DNOs—like the distribution businesses owned by SP Energy and SSE—then use their own infrastructure to deliver electricity to end-use consumers. These network operators do not sell electricity; rather, energy suppliers pay these companies for use of their infrastructure.[62] DNOs, like NESO and the transmission owners, require licenses from Ofgem to conduct their operations.[63]

II. Community Solar Interconnection Procedures

NESO identifies community solar infrastructure as a type of embedded generation. Embedded generation is connected to local distribution networks rather than the national transmission network.[64] Accordingly, NESO does not manage community solar generation and must account for this type of generation in its nationwide demand forecasts.[65]

Connecting a community solar project to its local distribution network requires referring to the Distribution Code, an industry code regulated by Ofgem and administered by the Energy Networks Association (ENA).[66] The code contains procedures for actual interconnection and other relevant engineering guidelines. Parties interested in installing a community solar project will generally follow one of two engineering codes outlined by ENA: G98 or G99.[67] G98 projects connect 3.68 kilowatts (kW) or less of nameplate capacity to each phase of an installation, while G99 projects connect over 3.68 kW to each phase.[68]

---

[60] "What we do," National Grid, https://www.nationalgrid.com/about-us/what-we-do; "Our Transmission Network," SP Energy Networks, https://www.spenergynetworks.co.uk/pages/our_transmission_network.aspx; "Our business units," Scottish and Southern Electricity (SSE), https://www.sse.com/about-us/our-businesses/.

[61] "How does electricity move around?" NESO, https://www.neso.energy/energy-101/electricity-explained/how-does-electricity-move-around.

[62] Hinson, "Electricity Grids," 8.

[63] Ibid, 9.

[64] "What is embedded generation?" NESO, https://www.neso.energy/energy-101/electricity-explained/how-electricity-generated/what-embedded-generation.

[65] "What does the Electricity National Control Centre do?" NESO.

[66] "Industry codes and standards," Ofgem.

[67] "Distributed Generation Connection Guide: G98 & G99," Energy Networks Association (ENA), March 2024.

[68] Lorraine Haskell and Jessica Duning, "Guide: Solar PV," Community Energy London, last modified January 2023: 13.

Connecting a small micro-generator to a single phase of an installation—as compliant with G98—will have a minimal impact on the overall distribution system.[69] Accordingly, the process for connecting such projects is relatively simple. Customers interested in installing a small solar project (at or under 3.98 kW of nameplate capacity) on a single premise must find a competent installer to install and commission the project. After the completion of these two steps, customers need to inform their DNO of the micro-generator within 28 days of commissioning the unit.[70] If the G98 project is installed on multiple dwellings at the same time, discussions with the local DNO must begin before starting work on the project. Provided that the DNO responds favorably in informal discussions of the project, a formal G98 application will need to be submitted to the DNO in advance of the installation.[71] The remainder of the steps in the interconnection process parallel the requirements of a single-premise G98 project.[72]

For projects requiring over 3.98 kW of nameplate capacity, the installation must comply with G99 procedures.[73] The DNO must be contacted prior to beginning work on the project.[74] Once the project has been planned and the DNO has been contacted, the selected installer must submit a G99 application form to the DNO on behalf of the customer.[75] If the DNO accepts the project, they will "produce a connection offer"[76] that the customer must then agree to. The customer will also enter into a series of other agreements with the DNO prior to the installation and commissioning of the project.[77] Customers and installers will generally remain in close contact with the DNO throughout project construction and may even have the DNO witness the commissioning testing.[78]

While each of the 14 DNOs undoubtedly varies in their response to community solar projects, the general procedure for installing these generators remains nationally consistent. This effect stems from the high degree of centralization over interconnection procedures in the UK. At the highest level, Ofgem monitors and alters the Distribution Code, with ENA communicating such alterations. The Distribution Code, like all other energy

[69] "Distributed Generation Connection Guide," 2024: 43.
[70] Ibid, 44.
[71] Ibid, 47.
[72] Ibid, 48.
[73] Haskell and Duning, "Guide: Solar PV," 2023: 13.
[74] "Distributed Generation Connection Guide," 2024: 57.
[75] Ibid, 58.
[76] Ibid.
[77] Ibid.
[78] Ibid, 59.

industry codes, is considered a "living"[79] document; accordingly, these codes are granted a flexibility that can assist in promoting community energy installations as the UK's government increasingly prioritizes distributed generation options.[80]

US Policies

On the surface, US electricity systems seem to closely parallel those of the UK. Both countries operate wholesale and retail markets with similar underlying infrastructure. Upon closer inspection, however, the realities of each system appear quite different. While the UK exhibits a high degree of national uniformity in its market structures and interconnection procedures, the US possesses substantial regional variation in these areas. This section covers the differences between "regulated" and "deregulated" markets, while also providing a high-level overview of the variance in community solar interconnection policies.

I. General Regulation

Investor-owned utilities service most electricity customers within the US. These utilities are classified as either traditionally regulated or deregulated. Regulated utilities typically operate as vertically-integrated monopolies that own generation and transmission infrastructure in a particular region. These utilities receive oversight from regulators on the state's public utilities commission (PUC).[81] State regulators monitor the retail electricity prices that utilities charge to end-use customers and must approve a utility's power plant investments. Utilities in deregulated markets often do not own generation assets—which are instead owned by independent power suppliers—but still possess transmission and distribution infrastructure.[82] In order to acquire power from generation facilities, deregulated utilities must participate in wholesale power markets.

Seven regional transmission organizations (RTOs) operate wholesale power markets in the US. Most of these RTOs are regulated by the Federal Energy Regulatory Commission (FERC).[83] FERC acts as the "economic regulator…[for]

[79] "Industry codes and standards," Ofgem.

[80] "Distributed Generation Connection Guide," 2024: 30.

[81] Kathryne Cleary and Karen Palmer, "US Electricity Markets 101," Resources for the Future, last modified March 17, 2022.

[82] Ibid.

[83] Texas's RTO, the Electric Reliability Council of Texas (ERCOT), is exempt from FERC regulation, as the RTO operates exclusively within Texas's borders. (Source: Cleary and Palmer, "US Electricity Markets 101," 2022).

wholesale electricity transactions that cross state lines."[84] This role requires FERC to approve the ratemaking process in wholesale markets, so that rates are considered "just and reasonable."[85] Deregulated retail electric utilities "purchase electricity at market-determined wholesale prices [regulated by FERC] and then sell that electricity to customers at market-determined retail prices."[86]

II. Community Solar Interconnection Procedures

Community solar interconnection policies vary considerably by state. State PUCs often determine the interconnection procedures for distributed energy resources (DERs) like community solar that seek to connect to distribution systems retained by investor-owned utilities.[87] Thirty-six states currently possess statewide mandatory interconnection standards for DERs; thirteen others maintain a form of optional interconnection guidelines.[88] Individual investor-owned utilities may add their own interconnection policies to statewide baselines. Municipal and cooperative utilities also implement interconnection standards for DERs, although these standards may differ from statewide regulations as such utilities are often exempt from PUC oversight.[89]

Two primary factors determine the extent of federal authority over a community solar installation's interconnection process: its market engagement and its physical interconnection. If a community solar project engages in interstate wholesale power transactions, the installation must comply with FERC's Small Generator Interconnection Procedures (SGIP) and the Small Generator Interconnection Agreement (SGIA).[90] SGIP and SGIA apply to projects with under 20 MW of nameplate capacity.[91] FERC also exercises authority over community solar projects with physical interconnection to the transmission system.[92] If a community solar installation connects to an intrastate distribution system and is engaged in retail sales exclusively, the

[84] Kathryne Cleary et al., "FERC 101: Electricity Regulation and the Federal Energy Regulatory Commission," Resources for the Future, last modified August 21, 2021.
[85] Ibid.
[86] Cleary and Palmer, "US Electricity Markets 101," 2022.
[87] Michael Ingram et al., "A Guide to Updating Interconnection Rules and Incorporating IEEE Standard 1547," Golden, CO: NREL, 2021: 1.
[88] Ibid, 2.
[89] Ibid, 1.
[90] Ibid; Steve Pincus and Steve Shparber, "Legal Considerations Related to Distributed Energy Resources (presentation)," PJM Interconnection, April 18, 2016.
[91] "Generator Interconnection," Federal Energy Regulatory Commission (FERC), last modified May 16, 2024, https://www.ferc.gov/electric-transmission/generator-interconnection.
[92] Pincus and Shparber, "Legal Considerations Related to Distributed Energy Resources, 2016.

project will not be subject to FERC jurisdiction.[93] However, elements of SGIP and SGIA may appear in state interconnection procedures, extending FERC's overall influence in the community solar sector.

Analysis

In attempting to understand the differences between a sample of European and North American community energy sectors, I uncovered surprising data findings. The US surpassed the UK—traditionally recognized as a community energy leader—across four different measures of community solar capacity. This data, however, does not necessarily conflict with the UK's status as a leader in community energy as a whole; after all, I exclusively considered community solar capacity, which compromises only 63% of the UK's total community energy sector.[94]

This qualification to my data findings enhances the necessity of exploring underlying policy structures within both countries, as regulatory regimes possess considerable influence on the proliferation of community solar. The degree of centralization over electricity regulation varies by country, as evidenced by the amount of authority granted to national regulators. In the UK, Ofgem possesses authority over the entirety of the UK's electricity system, although the degree of such authority varies by component. Ofgem licenses all electricity generators, energy suppliers, distribution and transmission network owners, and the national transmission operator, NESO. Authority over licensing procedures allows Ofgem considerable influence in industry operations. FERC's licensing authority, on the other hand, is considerably limited. FERC only possesses the authority to license hydroelectric projects.[95]

Ofgem also regulates both retail and wholesale electricity markets at the national level. The office sets a "price cap" for retail customers and establishes price controls for wholesale transactions. Conversely, FERC possesses minimal regulatory authority in both wholesale and retail power markets. FERC's authority over wholesale transactions extends only to interstate power markets; intrastate wholesale markets—such as Texas's market—fall outside of FERC jurisdiction. FERC does not regulate retail electricity rates; instead, state PUCs act as the principal retail rate regulator.

These observations provide important context for understanding the specifics of community solar regulation within each country. Ofgem's regulatory purview extends to energy industry codes, including the national

[93] Ibid.
[94] "Community Energy State of the Sector 2024," CEE, July 2024.
[95] "What FERC Does," FERC, last modified October 23, 2024.

Distribution Code. This code, administered by ENA, articulates both the interconnection procedures and relevant engineering recommendations applicable to community solar projects. The possession of a uniform national interconnection code streamlines the community energy installation process. In the US, on the other hand, interconnection procedures vary greatly by state. Most projects will need to follow state and utility-specific requirements, although some installations may also face mandatory FERC oversight.

The fragmentation of interconnection regulation in the US can prevent the creation of comprehensive guidance documents for communities looking to invest in solar projects. Additionally, communities can encounter significant opposition to proposed solar projects from their local electric utility, which typically owns the local distribution infrastructure. These utilities often receive strong support from state PUCs. Accordingly, communities may not be able to seek impartial arbitration from state regulators, thereby stalling or preventing the creation of a community solar project. Communities in the UK can face similar challenges with DNOs, although Ofgem's high-level oversight of interconnection procedures helps to prevent such conflict from occurring. After all, Ofgem's strategic priorities reflect a nationwide interest in transitioning to an increasingly-decentralized energy system, as do the priorities of ENA.[96]

The UK's interconnection regulation appears better suited to community solar deployment than the US's regulatory regime based on its relative national uniformity. This finding suggests that additional research is needed to evaluate alternative explanations for the US community solar sector's volumetric advantages over that of the UK. The amount of government financing available to community solar projects within each respective country should be investigated when considering alternative theories for this phenomenon.

Although this study may not have revealed an explanation for why the US surpasses the UK in community solar, it does offer novel data and regulatory insights that help to contextualize the relative lack of attention placed on North American community energy governance. My research suggests that community solar developments within the US deserve greater scholarly attention, as the sector is larger across multiple metrics in the US than in the UK—a nation that currently receives greater attention in the field.[97] I hope that the analysis I provided serves as a foundation for further research on

[96] "Protect, Build, Change, Deliver: Ofgem's Multiyear Strategy," Ofgem, 2024: 62; "How we're improving grid connections," Energy Networks Association (ENA), https://www.energynetworks.org/industry/connecting-to-the-networks/reforms.

[97] Leonhardt et al., "Advancing local energy transitions," 2022.

community energy in the US and inspires critical discourse on regulatory solutions that can accelerate domestic community energy deployment.

Bibliography

Amos, Nathaniel. “Ofgem.” Institute for Government. December 21, 2022. https://www.instituteforgovernment.org.uk/explainer/ofgem.

Bartrum, Olly. “Energy price cap.” Institute for Government. November 24, 2022. https://www.instituteforgovernment.org.uk/explainer/energy-price-cap.

Cleary, Kathryne and Karen Palmer. “US Electricity Markets 101.” Resources for the Future. Last modified March 17, 2022. https://www.rff.org/publications/explainers/us-electricity-markets-101/.

Cleary, Kathryne, Karen Palmer, and Todd Aagaard. “FERC 101: Electricity Regulation and the Federal Energy Regulatory Commission.” Resources for the Future. Last modified August 21, 2021. https://www.rff.org/publications/explainers/ferc-101-electricity-regulation-and-the-federal-energy-regulatory-commission/.

“Community Energy in England (map).” Community Energy England (CEE). Last modified July 2024.https://www.google.com/maps/d/u/0/viewer?mid=1zGQXlC3lM3uEkZeML5iFQx6fCoJpJUgP&ll=53.27687315628658%2C-2.387098553535104&z=6.

“Community Energy State of the Sector 2024.” CEE. July 2024. https://communityenergyengland.org/files/document/960/1720710752_CommunityEnergyStateoftheSector2024UKOverview.pdf.

“Digest of UK Energy Statistics: Annual data for UK, 2023.” Department for Energy Security and Net Zero. July 30, 2024. https://assets.publishing.service.gov.uk/media/66a7e14da3c2a28abb50d922/DUKES_2024_Chapters_1-7.pdf.

“Distributed Generation Connection Guide: G98 & G99.” Energy Networks Association (ENA). March 2024. https://www.spenergynetworks.co.uk/userfiles/file/2024_DG_Guides_Combined_Document.pdf.

“Electricity explained.” US Energy Information Administration (EIA). Last modified July 16, 2024. https://www.eia.gov/energyexplained/electricity/electricity-in-the-us-generation-capacity-

and-sales.php.

"Energy Policy and Regulation." Ofgem. https://www.ofgem.gov.uk/energy-policy-and-regulation.

"Energy price cap (default tariff) policy." Ofgem. https://www.ofgem.gov.uk/energy-policy-and-regulation/policy-and-regulatory-programmes/energy-price-cap-default-tariff-policy.

"Generator Interconnection." Federal Energy Regulatory Commission (FERC). Last modified May 16, 2024. https://www.ferc.gov/electric-transmission/generator-interconnection.

Haskell, Lorraine and Jessica Duning. "Guide: Solar PV." Community Energy London. Last modified January 2023. https://www.communityenergy.london/wp-content/uploads/2023/01/Solar-PV-Guidance-V2.pdf.

Hewitt, Richard J., Nicholas Bradley, Andrea Baggio Compagnucci, Carla Barlagne, Andrzej Ceglarz, Roger Cremades, Margaret McKeen, Ilona M. Otto, and Bill Slee. "Social Innovation in Community Energy in Europe: A Review of the Evidence." Frontiers in Energy Research 7 (2019). https://doi.org/10.3389/fenrg.2019.00031.

Hinson, Suzanna. "Electricity Grids." House of Commons Library. Briefing Paper Number 8472. January 8, 2019. https://researchbriefings.files.parliament.uk/documents/CBP-8472/CBP-8472.pdf.

"How does electricity move around?" National Energy System Operator (NESO). https://www.neso.energy/energy-101/electricity-explained/how-does-electricity-move-around.

"How we're improving grid connections." Energy Networks Association (ENA). https://www.energynetworks.org/industry/connecting-to-the-networks/reforms.

"Industry codes and standards." Ofgem. https://www.ofgem.gov.uk/energy-policy-and-regulation/industry-codes-and-standards.

Ingram, Michael, Akanksha Bhat, and David Narang. "A Guide to Updating Interconnection Rules and Incorporating IEEE Standard 1547." Golden, CO: National Renewable Energy Laboratory (NREL). NREL/TP-5D00-75290. https://www.nrel.gov/docs/fy22osti/75290.pdf.

Leonhardt, Renata, Bram Noble, Greg Poelzer, Patricia Fitzpatrick, Ken Belcher, and Gwen Holdmann. "Advancing local energy transitions: A global review of government

instruments supporting community energy." Energy Research & Social Science 83 (2022). https://doi.org/10.1016/j.erss.2021.102350.

"Network price controls 2021-2028 (RIIO-2)." Ofgem. https://www.ofgem.gov.uk/energy-policy-and-regulation/policy-and-regulatory-programmes/network-price-controls-2021-2028-riio-2.

"Our business units." Scottish and Southern Electricity (SSE). https://www.sse.com/about-us/our-businesses/.

"Our Transmission Network." SP Energy Networks. https://www.spenergynetworks.co.uk/pages/our_transmission_network.aspx.

Pincus, Steve, and Steve Shparber. "Legal Considerations Related to Distributed Energy Resources (presentation)." PJM Interconnection. April 18, 2016. https://www.pjm.com/-/media/committees-groups/committees/mrc/20160418-special/20160418-item-03a-state-and-federal-jurisdictional-rules-and-regulations-related-to-der.ashx.

"Population estimates." Office for National Statistics. Last modified October 8, 2024. https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates.

"Protect, Build, Change, Deliver: Ofgem's Multiyear Strategy." Ofgem. 2024. https://www.ofgem.gov.uk/sites/default/files/2024-03/20240328%20Ofgem%20Multiyear%20Strategy%20%28FINAL%20v2%29_0.pdf.

Rutherford, Jonathan, and Olivier Coutard. "Urban Energy Transitions: Places, Processes and Politics of Socio-Technical Change." Urban Studies 51, no. 7 (2014): 1353–77. http://www.jstor.org/stable/26145800.

Savaresi, Annalisa. "The Rise of Community Energy from Grassroots to Mainstream: The Role of Law and Policy." Oxford Journal of Environmental Law 31 (2019): 487-510.

Seyfang, Gill, Jung Jin Park, and Adrian Smith. "A thousand flowers blooming? An examination of community energy in the UK." Energy Policy 61 (2013): 977-89. https://doi.org/10.1016/j.enpol.2013.06.030.

"US and World Population Clock." US Census Bureau. Last modified November 12, 2024. https://www.census.gov/popclock/.

Welton, Shelley. "Public Energy." N.Y.U. L. Rev. 92 (2017): 267-349.

"What does the Electricity National Control Centre do?" NESO.

https://www.neso.energy/what-we-do/systems-operations/what-does-electricity-national-c
ontrol-centre-do.

“What FERC Does.” FERC. Last modified October 23, 2024. https://ferc.gov/what-ferc-does.

“What is embedded generation?” NESO. https://www.neso.energy/energy-101/electricity-explained/how-electricity-generated/what-embedded-generation.

“What we do.” National Grid. https://www.nationalgrid.com/about-us/what-we-do.

Xu, Kaifeng, Gabriel Chan, and Sudha Kannan. "Sharing the Sun Community Solar Project Data (June 2024)." NREL Data Catalog. Golden, CO: NREL. Last modified September 25, 2024. DOI: 10.7799/2438583

The Sacred and the Profane or Lack Thereof in Hoxton, London: The Impact of Religious Property as Public Space in Working Class Neighborhoods

Luke Byrd

The Industrial Revolution changed how city-dwellers used and viewed urban spaces dramatically. Population density skyrocketed, alongside quickly shifting economic structures. The cemented system of feudal labor (as well as the clear relationship between landlords and serfs) crumbled beneath increasingly powerful, more urbanized economic authorities. The epicenter of rapidly changing working structures and related societal changes, London acts as a uniquely interesting site of study. Its place as an urban monolith is not contested: London's regional influence in western European society has been constant since the monarchy emerged in the 900s. As these unstable systems set their own political foundations in the city, social issues, or rather social violence, became more tangible. Enclosure acts, enacted by parliament as London's population boomed, privatized many formerly public areas of green space in London (Thorsheim 111). Access to public green space could have been preserved in working class neighborhoods, but access to non-religious public land had to die for the country to industrialize. Public access to open, non-politicized space could have been preserved if the gods of property value and social morality (wealthy behavior as moral) were revered a bit less. This to say, barring the poor from accessing London's rather rampant public lands and heavily restricting access to all but churchyards in working class neighborhoods strengthened the power of the church, allowing it to exist within the confines of the country's changing labor structure.

Decisions on how to maintain areas of open space during London's infill development impact how Londoners experience leisure time today. The Metropolitan Public Garden Association (MPGA) was a group of wealthy landowners who held immense power over the use of open spaces in the burgeoning city. Areas that this group deemed worthy of new green development or preservation of existing green space often limited access to these spaces for the wealthy, limiting the working class's access to the resource of (slightly) cleaner air. The idea of parks allowed the upper class in the city to ignore emerging public health issues associated with industrialization. It also allowed the upper class to ignore the factor that much of the working class had no reliable access to a park and had to deal most tangibly with the defects of industrialization. The impoverished areas of Victorian London, many of which echo areas of economic distress today, were not intrinsically worse than the wealthier areas (Hoxton, South London, and Hackney are just as close to London's modern central business district as Mayfair or Camden Town). They were, however, overlooked during the city's then greatest period of economic and political

growth. London was once a regional capital and became an inextricably global one in the 19th century. It only makes sense that urban protection efforts focused on those central *and* already wealthy neighborhoods which had a chance of decline due to their physical proximity to both factories and the workers who supplied labor to the factories. The need for open land in the denser and lower-class areas persisted and so a drastic shift in the function of religious space and religion itself emerged.

Victorian London's increasingly working-class population necessitated, in the eyes of the wealthy, a creative use of Churchyards as open areas for the poor. The rich had their wealth as an ever-wavering moral compass, so the new urban poor also needed an ever-wavering source of morality—the Church of England. Though the working class propelled the British economy to a global scale, their living existence in central London was perceived by the upper classes to be a moral and physical blight on London itself (Osborne 741). Churchyards, as well as the very few non-religious open spaces in working class areas, had a dual use: practically serving as open areas for recreation and assembly among the poor while also seeming like hotspots of moral betterment among the lower classes, which legitimized their necessity to the ruling class. The belief among the rich that churchyards would teach the poor exactly to recreate the lives of the urban rich is illustrated by a certain R. Brabazon's take in *The Quiver* on the need for these areas:

> "It is to be hoped that as public opinion becomes more and more alive to the cruelty of suppressing the playing of games by children in the streets, without supplying them with any places where they may legitimately give vent to the natural and healthy instinct which leads them to run and jump, and dance and laugh" (338)

The benevolent rich's opinion—more parks aided the moral and physical health of a city at risk of degradation—brought attention to the quality of life of the working class that was impossible to achieve in a pre-industrial state. The former urban-rural divide—cities being the domain of the upper and merchant classes and peasants resigned to manual labor in the countryside—made this simultaneous patronizing but also helpful inter-class aid possible. The living and working areas of the poor entered the field of view of the rich, and the rich had to do something. Though few purpose-built parks were built by the city for working class neighborhoods, the work of those like Brabazon paved the way for a logical (to those upper classes) social amelioration of moral life in London through the adaptive reuse of open lots in the city. Though haphazard, and certainly not ideal, the clever use of churches for this "problem" allowed the urban poor to benefit from the thin veneer of charity of the ruling class.

It is worth noting the state of well-known parks like Kensington Gardens, Regent's Park, and others during this time of industrialization. Even public parks

that were financially accessible to all had *de facto* social barriers. Park keepers acted in tandem with local police authorities to limit unscrupulous activities, especially on Sundays. These areas, which were at one point public, had strict codes of entry, requiring both dress that was entirely inaccessible to anyone but the rich, as well as moral protection rules that might as well have been anti-poor rules. Many of these accessibility barriers were established in reaction to the influx of working-class Britons in the city (Thorsheim 112). Parks were opportunity sites, inaccessible to most but beacons of exemplary social behavior to all.

One example of a churchyard as a public space is St. John the Baptist in Hoxton, a neighborhood just north of the City of London—the area around which the London wall stands. Neighborhoods like Hoxton were the main areas of population growth as labor needs shifted from agricultural work outside of the city to factory work in the heart of the city. Since the areas were simply not as populated prior to the industrial revolution, their development was hindered. Why build public parks where no one really lived? The boom in population, coupled with the lack of preexisting officially designated and governed open spaces led to congested areas ripe with environmental hazards. Depleted of their work in the countryside, the English working poor moved in droves to these slightly more northern neighborhoods in the city; and although they didn't have parks, they had churches.

Churches, especially when used as public space, functioned as a symbol of the riches' view on what exactly could fix the issue of poverty, or rather the existence of poor people in the city. A visual amelioration—making the poor act like the rich (i.e., moral) in their "public gardens' '—was prioritized over any actual improvement because it was economically beneficial to keep the lower classes poor. One way of asserting this power over neighborhoods like Hoxton was building Church of England Parishes and asserting them as centers of recreation *and* this "social amelioration" (Osborne 741). The Church of England, under its common guise as a benevolent institution that sought to aid its people (natural born English) in any ways possible, participated in the social violence which continues to perpetuate in modern day London. It supposes the aesthetic value of a city is more important than the health of its citizens, no matter their value as labor capital.

The churchyard in Hoxton that is used so freely as a public space is under the watch of the Church of England by nature of its ownership of the land. There exists not only power over physical land but also social power: those who use the land are undoubtedly aware of the role of the Church of England in their country. Though the 1851 religious census is not wholly reliable for sweeping judgements of religious practice in the 19th century, it is still a useful tool. Though there existed 458 places of worship that were entirely dedicated to the Church of England, and by relation the Royal Family, only 409,831 out of all English Anglicans attended church. This to say, the legitimate function of churches, spaces for Sunday service, was not

necessarily in full swing in the decades after St. John the Baptist was constructed in 1826 (About Us). What, then, was the use of so much religious construction in this period?

The construction of churches in working class areas by a politically affiliated denomination falls in direct line with the goals of the ruling class in London at the time. Social amelioration could be achieved through a vicarious religion of sorts. If the lower classes were exposed to new and appealing parishes of the Church of England, they would, by some sort of osmosis, absorb the *good* moral values of the established religion in the land. So too, then, would they become less reactive to the atrocious social and living conditions to which they were subject. Brabazon complained that if you start in Hoxton Square, the nearest park is "distant a mile and a half away" (339). The lack of accessible public transport, as well as the general working conditions in the city, made living somewhere affordable and also having access to a park almost impossible. Adults could access these public amenities if they went on Sundays, but childhood mobility in the city surely did not allow much use of parks for the young urban poor. In short, church construction allowed the rich to be able to declare their goodwill by supporting the state church, asserting that they cared about the problem of poverty, while directly doing almost nothing to help the conditions of the poor in London. There existed a sort of social vicarious religion, in which the rich relied on the idea of the church and that church construction surely meant the betterment of society in lieu of recognizing the true source of the lower classes' oppression: the very wells of profit from which the rich drank. This delusion, intentional or not, allowed the rich to maintain their spot as moral exemplars while almost always doing nothing to truly improve the city for those who powered it.

The notion of the need for public spaces to cure social ills seeks to pit the pre-existing working class in London—think craftsmen and merchants—against the newer working class that recently moved in. Brabazon's plea for urban parks, along with his declaration of "vice and misery" that had overtaken parts of the city, appealed to the fears of the vicariously religious middle class (336). The upper class was able to communicate to the middle class that the lower class was both the source of "wretchedness" in the city (they should be looked down upon) and that they were a hotspot of "despair", i.e., they needed saving (336). Brabazon's depiction of the newer urban poor to the older urban poor seeks to create false solidarity between the middle and upper classes, so that both can feel like they are helping solve issues seemingly specific to the poor, while simultaneously creating strong social barriers between the working class and the rest of Londoners. The prescription of religious space to help issues directly caused by Britain's imperial economy maintained a harmful economic status quo that disallowed any meaningful resistance from the working class, creating working class-oriented parishes of an economically and religiously oppressive, or at least extremely influential, state religion.

The use of religious property as public space expects a lot of those who utilize it. These expectations are not only influenced by the politicization of space, but also by the religious influence on behavior in these areas. The public nature of parks is equated with a sort of freedom in how one uses the space. Anyone can recreate in any way they see fit, so long as it falls within the confines of what is legally and socially acceptable. Of course, right alongside Industrialization came Enclosure acts, which spatially segregated where Londoners found "public" space. Major parks in London became sites of theatrical shows of wealth, where the rich could visually and financially show that they cared about bringing nature to cities. Because the use of religious space as public space for the working class arose under these interesting social conditions, the constructs of how one should behave while recreating get complicated.

Gardens and Parks, used to demonstrate how one should act in the city and to "tame and civilize the urban masses", also functioned to equate this good behavior with a sort of responsibility to society, if one wanted to recreate in a socially acceptable manner (Thorsheim 113). Those who used London's public spaces, then, had a social and financial responsibility to charity—acting as upright citizens—which was pushed culturally by both the state (and church) and their peers. The social pressure that changed how the rich viewed public parks also impacted how the poor viewed open religious space. Churchyards acted simultaneously as needed areas of rest and shade in the city and a tool of the power of the church to remind those who make London their home who was really in charge. If you had to go to church to recreate, you felt the religious pressure of what it means to enter a religious space while also feeling the social pressure to act like those with power acted in their distant urban parks. The churchyards of North and East London present, by way of their social connection to other parks in the city, an unattainable social standard for the poor (no matter how well behaved someone is, the fact that they are poor is the problem). Also, the churchyards' connection upward to the religious state presents an equally unreachable religious standard.

The religious pressure exerted by religious common spaces is exacerbated by the Church of England's place as the state religion. Religious attendance (butts in seats) was not all that common, but the impact of a state religion on use of religious space is significant. Industrialization's social upheaval caused some instances of vicarious religion in the poor. A massive exodus from the countryside to the city as the working fabric of the country changed, not necessarily for better working conditions, must have had a significant impact on how religious space recreators viewed themselves within those spaces. Hoxton was a dense neighborhood, close to affluent central London and chock-full of factories. Though religious areas provided a respite from the crowded city, they only perpetuated the power of the state and reminded users of how one could live well in the city. To an extent, churchyards as the only accessible green areas fall in line with Marx's perspective on the role of

religion, especially in the conditions of rapid change and industrialization. Perhaps the social pressure put upon the user of a religious space acts as an opium of sorts. The churchyard as a public area seems to protect the user from the immoral and profane world of labor and industry—a world that worked within the political and thus also the religious system of the United Kingdom. The churchyards, though, simultaneously function to hide the economic connection between the institution of the Church of England and the exploitative systems of factory labor that plagued those who most commonly used them. This dual use—personal protection from one's hardship and spatial separation between historically tied aspects of society—makes churchyards extremely effective as public spaces. They fulfill the social and recreational needs of those who live near them, just as parks fill those needs in other parts of London.

Public spaces in neighborhoods like Hoxton were lauded as "urban healtheries" by the MGPA. The equation with the little green areas in North and East London as centers of urban health seeks to view the city of London as a working organism, to treat the societal problems of the industrial revolution as issues with reproduction of labor, and to marry the ideas of scientific with the presences of the church in a time of tumult. In *People of the Abyss*, by Jack London, the poor in London live in the abyss, a concept which might as well mean Hell to the reader. Of course, the abyss is Whitechapel (among other neighborhoods) in London. In describing Christ's Church, in what is now Spitalfields, just south of Hoxton, Jack dismisses the idea of a churchyard as the "lungs" of the city, calling them instead "an abscess, a great putrescent sore" (London 26). Poverty, homelessness, and the accessibility and use of these public spaces are treated as second-rate issues behind the idea of available labor capital. An approach similar to the religious "butts in seats," industry's view of the working class as having only one societal use—being in the factory—informs how religious public spaces are experienced in areas where workers live.

In "Governing Cities: Notes on the Spatialisation of Virtue," Osborne draws attention to the implications that are at play when the city becomes an organism. He supposes that no matter the intended effect of an anatomical representation of a city, it leads to a virtue-based physical environment which ends in legal and social discrimination. Osborne says:

> "The language of illness and of medicine, and its spatial organisation, became, here, omni-purpose metaphors for problematising the urban population from the perspective of the threats that it posed and the ways in which they were to be acted upon. The spatial relation of citizen to habitat was turned into one that can and should be governed." (742)

Osborne's theory, that the language used to describe problems in cities influences how those affected relate to the environments in which they live, and further that this relation should be governed by some sort of power above, is especially pertinent to the role of churches as "lungs" of the city (London 26). A Ruskinian design approach must be used to marry these two unlike things, and the use of religious property as a site of healing—especially related to a group of people the church is in the interest of controlling—furthers the tradition of equating the physicality of the church with knowledge, and therefore power. In a churchyard, this power comes from the feeling one gets when they utilize religious space for a non-religious purpose—leisure. The church building, while physical, is not the most important part of this knowledge affirmation and power construction. The feeling that religious space gives one when one enters into it is. Though leisure to the user has no connection to religiosity, the fact that the reason the user's leisure is possible by the grace of the physical property of the Church illuminates how these spaces functioned socially to "tame" the urban masses (Thorsheim 113).

The design of churchyards within a confined urban fabric allows them to function so successfully. Their sanctity is constructed societally and intentionally separated from the surrounding cityscape, and they are lauded as escapes from the vulgarity of life. Though especially pertinent as London dealt with the most forward consequences of industrialization, the impact of these areas holds its weight into the modern era. How are the impacts of sacred and profane place construction felt, as areas like St. John the Baptist Church continue to act as sites of recreation and leisure today? The ideas of the human construction of sacred and human space are based mostly on Mircea Eliade's work. Eliade relies on the ideal of the *construction* of sacred space from previously amorphous and homogeneous profane space (22). This to say, he relies on a subject who has the power to designate one formally cohesive object into two qualitatively different objects. Power and control are required to forge sacred space from the profane. There is some assumption of an additional quality in the subject who constructs this spatial divide: morality. The language—the *sacred* and the *profane*—do not indicate necessarily that the profane is wholly evil, but surely relies on the sacred being in some way better, more holy, righter.

Perhaps any attempt to categorically separate and distinguish the quality of a specific property based on the supposed experience of a user is fruitless. It overlooks how diverse the experiences are of Londoners both in the mid-19th century and today. London has always been cosmopolitan. Its religious, racial, and class diversity has always been met with seemingly impervious power structures that seek to make the lives of the downtrodden as bad as possible. The individual lived experience of space, especially when those spaces are close and accessible, though, undermines the broad pattern which the Sacred/Profane theory seeks to analyze. In reality, Jack London's grievances of the homeless sleeping on churchyard benches and his delegation of these supposedly misused religious spaces as "great putrescent sore[s]"

illustrate just how successful these public spaces are to the people who actually use them. If, on a sunny day in July, one can relax in a green space, no matter its technical (probably Anglican) religious affiliation, then it is not a sacred or profane space, but a human one.

Works Cited

"About Us." *St John's Hoxton*, www.stjohnshoxton.org.uk/about-us. Accessed 12 Aug. 2023.

Brabazon. "A PLEA FOR PUBLIC PLAYGROUNDS." *Quiver*, vol. 20, no. 973, 1885, pp. 336-339. *ProQuest*, https://login.ezproxy.lib.ou.edu/login?qurl=https%3A%2F%2Fwww.proquest.com%2Fhistorical-periodicals%2Fplea-public-playgrounds%2Fdocview%2F4013074%2Fse-2%3Faccountid%3D12964.

Brown, Tim. "The Making of Urban 'Healtheries': The Transformation of Cemeteries and Burial Grounds in Late-Victorian East London." *Journal of Historical Geography*, vol. 42, Oct. 2013, pp. 12–23. DOI.org (Crossref), https://doi.org/10.1016/j.jhg.2013.05.001.

Eliade, Mircea, 1907-1986. The sacred and the profane : the nature of religion / by Mircea Eliade ; translated from the French by Willard R. Trask Harcourt Brace Jovanovich New York 1959

London, Jack. The People of the Abyss. Generic NL Freebook Publisher, 1998. EBSCOhost, search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=1086065&site=ehost-live.

Luckin, Bill, and Peter Thorsheim, editors. *A Mighty Capital under Threat: The Environmental History of London, 1800-2000*. University of Pittsburgh Press, 2020. *DOI.org (Crossref)*, https://doi.org/10.2307/j.ctvxkn5q7.

Marx Karl et al. *Critique of Hegel's 'Philosophy of Right'*. University Press 1970.

Osborne, Thomas, and Nikolas Rose. "Governing Cities: Notes on the Spatialisation of Virtue." *Environment and Planning D: Society and Space*, vol. 17, no. 6, Dec. 1999, pp. 737–60. *DOI.org (Crossref)*, https://doi.org/10.1068/d170737.

Testing the Impact of Self-Perception on Honesty in an Exam Setting

Rohit Nair

Introduction

Academic dishonesty is a major concern for educators worldwide and continues to worsen with the development of new technologies that make cheating behavior easier. Surveillance devices, exam proctors, and programs to track internet activity are all external monitoring measures that greatly reduce the likelihood of cheating. However, many internal factors on the part of the student can act as key predictors of dishonesty in academic settings.

This study aims to expand on previous research studying the internal factors that encourage academic dishonesty. Earlier research by Baran and Jonason (2020) found that individuals with low self-efficacy are more inclined to participate in academic dishonesty. Individuals with low self-efficacy acknowledge that they lack the experience to perform well on an assessment. A core component of this mechanism is the perception of the self, in this case, a perception that suggests that cheating would serve to benefit the test-taker. An experiment using mirrors, performed by Monasterial et al. (2018), showed that students who could see themselves during a test performed worse than their peers who had no method of seeing themselves. The mechanism behind this behavior involves higher notions of self-perception, reducing an individual's willingness to cheat. Willingness to cheat is also subject to other variables related to the self. Salehi et al. (2021) identify exam difficulty, a lack of proper preparation, and the desire to get a high score as significant factors influencing cheating behavior on exams.

Based on this previous research, our study is designed to emulate a high-stakes exam setting to test the impact of self-perception on academic honesty. According to previous research, self-perception decreases test scores due to the interaction with honesty. As such, we predict a similar relationship between self-perception and being more honest in reporting test scores. We hypothesize that heightened perceptions of the self will increase academic honesty. We will use a chi-square test to analyze the groups' variations in honesty.

Method

This study, conducted in a Research Methods course at a prominent research university in the Southwest United States, featured a unique two-group design. Participants were divided into an experimental and control group, with the experimenters being aware of the group allocation. However, the participants remained unaware of their group until the end of the experiment. The use of

deception was a key element in maintaining the integrity of the study and ensuring the participants were not aware of the true purpose of the experiment.

The participants were randomly assigned into two groups. Group 1, the experimental 'mirror' group, was kept in one room, while Group 2, the 'no mirror' control group, was kept in another room. Participants in Group 1 had a webcam pointed at them that was projected onto a screen, allowing participants to view themselves for the duration of the experiment. Once the groups have been separated, they are given the same math test. The math test consists of ten questions pulled from the ACT, and the back of the test has a unique numeric identifier that links it to an answer sheet. The participants were told that the experiment was meant to test attention during a test with time pressure. At this point, the experimenters emphasized that participation is voluntary and that participants can rescind their data anytime. The participants are told that they will be given five minutes to complete the test and to record their total score on an answer sheet that will be provided after the five minutes have elapsed. Given that the ACT recommends that one minute be allotted to each question on the math section of the exam, properly completing this 10-question test in a 5-minute time window is unrealistic. To further simulate a high-stakes environment, the participants are told that the individual with the highest reported score will receive a $10 gift card. In the case of a tie, a raffle would be conducted to determine the winner of the prize.

After the participants were given five minutes to complete the test, answer sheets with a numeric identifier on the back were passed out to students. The answer sheet contains all the correct answers to the test questions. The participants are then instructed to report their score out of ten on the bottom of the answer sheet. The experimenters then collected the answer sheets along with the tests and revealed the experiment's true nature: that the experiment was meant to test if self-perception would decrease the likelihood of cheating. At this point, the experimenter asks again if any participant wants their data rescinded. Once this confirmation has been received, the experimenter gives the participant with the highest reported score the $10 gift card.

After completing the experiment, the experimenters looked at the answer sheets and the corresponding tests. If a participant's test score was the same as the reported score on their answer sheet, they were counted as 'honest.' If a participant's test score was different from the reported score on their answer sheet, they were counted as 'dishonest.'

Results

To measure if there was a significant difference of honesty between the two groups, a chi-squared test was performed based on the experimental data, displayed in Figure 1. We found a statistically significant relationship, $X^2 = 4.625$, $p = .032$

between self-perception and honesty in exam settings. This result supports our hypothesis that self-perception would increase the honest reporting of test scores.

Discussion

Our results suggest a statistically significant relationship exists between self-perception and honesty in an exam setting. The capacity to view oneself in a test environment encourages academic honesty. We believe these results are generalizable to higher educational institutions. Such institutions have exams distributed in high-stakes settings, a factor simulated through the gift card incentive. Academic institutions can apply these results by adding a method for students to view themselves while taking an examination, such as a mirror or webcam. Based on our results, such an application would discourage academic dishonesty.

However, the study did have limitations relating to its sample. Our study only had a sample size of 26. Increasing the number of subjects would have allowed us to obtain an odds ratio that could have let us more accurately predict how much self-perception impacts honesty. Additionally, anonymity was a priority during the experiment to minimize the effect of conformity bias, an extraneous variable that encourages students to be honest. As such, age and gender demographics were not obtained. Also, the participants were all Psychology students in a research methods course, meaning that they have some familiarity with research. Some participants may have been able to see through the deception and realized that the true intention of the study was to test honesty.

Further research affirming the relationship between self-perception and honesty would be beneficial in finding appropriate applications for encouraging honesty in test environments. Creating or modifying testing centers to facilitate self-perception would likely promote academic honesty in students. Future research should also consider self-perception and academic honesty concerning ages and different genders. The type of test is also a factor that should be further researched. The test used in our experiment was the math portion of the ACT, a standardized test that many American students take. Studies should consider examinations of different sciences, humanities, and more. We believe a significant relationship will be found between self-perception and honesty in these scenarios. Still, the significance of the results will likely depend on how future research incentivizes good performance and facilitates difficulty.

References

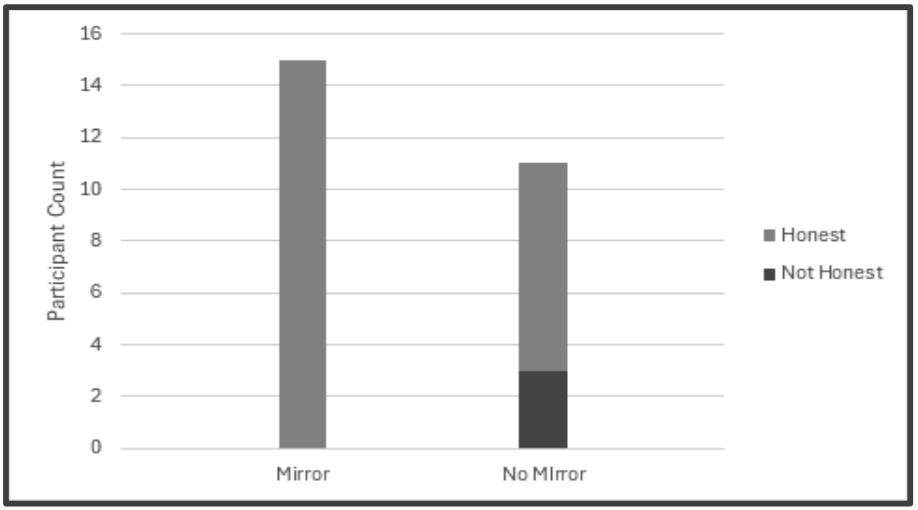
Baran, L., & Jonason, P. K. (2020). Academic dishonesty among university students: The roles of the psychopathy, motivation, and self-efficacy. *PloS one*, *15*(8), e0238141. https://doi.org/10.1371/journal.pone.0238141

Monasterial, Hannah & Alvarado, Jennifer & Arganoza, Joyce. (2018). The Effect of the Presence of Mirrors on the Cheating Behavior of Senior High School Students. 10.13140/RG.2.2.25792.17922.

Salehi, M., & Gholampour, S. (2021). Cheating on exams: Investigating Reasons, Attitudes, and the Role of Demographic Variables. Sage Open, 11(2). https://doi.org/10.1177/21582440211004156

Figure 1

Participant honesty in test reports across mirror and no mirror groups. Courtesy of the author.



The UNIVERSITY of OKLAHOMA

The Honors Undergraduate Research Journal is an annual publication that celebrates outstanding undergraduate research across all academic disciplines. For 24 years, the journal has worked to promote and publish original research that is both authored and peer-reviewed by undergraduate students.

We are grateful to the dedication of our advisors, review board members, executive board members, and the many students who submit their work each year. THURJ would not be possible without their immense efforts.