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Connie Zhang

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# Spatial Cognition in the Courtroom: A Quasi-Experimental Study of the Influence Canadian Courtroom Design Has on Jury Cognition

Connie Zhang

As efforts to reform the Canadian criminal justice system progress, there has been a rise in attention towards legal realist jurisprudence and the realm of legal architecture. This study aims to identify the degree of influence Canadian courtroom design has on a juror's perceptions of the defendant. Through a quasi-experimental research method, 44 high school students aged 14-18 served as jury members across a series of four trial recreations, each with a different layout. Afterward, they were then required to complete a post-test questionnaire. Three trials resulted in guilty verdicts, while one received a verdict of innocent. From the data gathered, it was concluded that the layout of Trial C had a significant degree of influence over a juror's cognition and worked to attract higher rates of innocent verdicts in comparison to other courtroom designs.

*Keywords:* courtroom layout, legal architecture, spatial cognition, Canadian criminal justice system, juror, trial

## Introduction

The traditional courtroom trial is associated with ritualized events performed according to a socio-legal script comprised of legalese, strict procedure, and codes of conduct. Society tends to celebrate the modern trial as a rational process that is impartial and applicable across time and place. However, in recent years, this notion has been challenged by legal scholars (Wolfe, 1994). Due to the lawyer's obsession with the word, legal practice has been principally fixated on mediums of written judgment over other modes of cognition such as spatial or auditory comprehension. It is generally assumed that under equal circumstances, a judgment given in one place would be the same as judgment reached in another. This flawed conceptualization of the legal realm limits one's recognition of other influential factors existent in a trial, including the physical space in which these trials take place (Mulcahy, 2011). The spatial configurations of a

courtroom can play a vital role in the social dynamics and impressions of a trial. Every time a new physical barrier is installed, a section of the floor is raised, or the positioning of the defendant is rearranged, there is a potential of disrupting the fairness of a conviction.

In recent years, efforts to reform the Canadian criminal justice system have been set in motion. On March 29<sup>th</sup>, 2018, the government of Canada introduced Bill C-75. Proposed by then Justice Minister Jody Wilson-Raybould, it affirms to render the system "more fair, modern and efficient" (Harris, 2018). With amendments ranging from the Criminal Code to abolishing peremptory challenges, Bill C-75 strives to transform the justice system by eliminating unjust court proceedings that impact marginalized groups and increase its overall efficiency (Bill C-75, 2018, p. 302). Implementing research collected on the spatial design of the courtroom and its influence on the actors within it would potentially add to the already existing reform as it, too, threatens ideals of justice within the court.

As an academic field of study, the significance of legal architecture has been neglected. Research into courthouses has received slightly more attention from other disciplines which tend to focus predominantly on the aesthetic and historical backgrounds of courts. Despite the lack of research, it remains imperative to not only Canadians but to all citizens, that further exploration is pursued. The matter of how different people perceive courtrooms raises important concerns about the law across cultures. With the growth of immigration comes an increase in foreign individuals who approach international courts with varying ideals of justice. Although this paper only examines Canadian courtrooms, the breadth of this issue reaches across borders. If this phenomenon is left unevaluated, fundamental problems in the delivery of due process, justice, and the upholding of a defendant's civil rights have the potential of spreading.

## Literature Review

One might expect social geographers and legal theorists to be more involved in the geopolitics of the trial as a prime site of state control, and while control of territory has been seen as fundamental to power dynamics in society, these disciplines have only recently turned their attention to the interface between law, place, and space (Mulcahy, 2011). While architectural historians have studied other public buildings such as churches, castles, or town halls, they have only surveyed the stylistic and symbolic elements of a courthouse, not its social significance (Mulchay, 2011). Past research within the field of legal architecture has primarily evaluated courtroom design and its influence on a juror's cognitive processes. However, there is a limited amount of inter-disciplinary research that has been done in various courtrooms globally. The majority of this data has been collected come from studies concentrated in the United States (U.S.), the United Kingdom (U.K.), and Australia with a small focus on courtrooms in Canada.

Within this field, there are numerous works that analyze the ways in which members of the court have been, and continue to be, controlled in the courtroom. Through a micro-ethnographic research method, Dr. Lawrence Corrigan and Dr. Bruce Anderson of St. Mary's University, as well as Heather

Robertson, founder of the Robertson Maclean Design Company, concluded that the interior design and the visual artifacts within Nova Scotia courtrooms "play a significant role in the presentation of the law" (Corrigan, Robertson, Anderson, 2018). In addition, Linda Mulcahy, professor of law at the London School of Economics, utilized an inter-disciplinary analysis to focus on the courthouse design of criminal courts in England. Mulcahy offered comprehensive evaluations of the relationship between the physical space of a courtroom and its participants. In *Architects of Justice: The Politics of Courtroom Design*, she highlights the ability of courtroom interiors to "influence what evidence is forthcoming [and] the basis on which judgments are made" (Mulcahy, 2007). Furthermore, in her book, *Legal Architecture: Justice, Due Process and the Place of Law*, she analyzes significant courtroom elements such as the design of the defendant's dock, the partitioning of zones, the dematerialization of the court, and role of the public in trials—commenting on the growing sense of isolation that exists in modern courtroom designs and factors such as positioning, sight lines, and acoustics that are critical in a jury's assessment of a trial (Mulcahy, 2011).

The fostering of power differentials within the courtroom is largely a result of vertical height paradigms. The relationship between verticality and power hierarchies is examined in *Courtroom Design and the Politicization of Legal Space*, where Caitlin Stonham writes about the ways in which "seemingly neutral space can be deeply politicized and inherently riddled with power dynamics," noting that the act of raising or removing a platform "has the potential to become the physical manifestation of hierarchy and power because in most regions of the world, success and power are measured on a vertical paradigm" (Stonham, 2017). Architecture and spaces contribute to social order and to political support for established hierarchies of status and power (Edelman, 1995). The extravagant design, formal setting, and symbols of the American court represent the 'drama' that is expected to take place, as well as the "hierarchy of power that exists between the judge, jury, prosecutor, defense attorney, defendants, and the public" (Edelman, 1995). Further investigations of verticality can be seen in the work by Dr. Moeller, Dr. Zabelina, and Professor Robinson, distinguished members of the American psychological community. Their research concluded

that “in spatial attention paradigms, more dominant individuals would systematically favor the vertical dimension of space more than individuals low in dominance” (Moeller, Robinson, Zabelina, 2008).

Within the study of legal architecture, research that exclusively examines the defendant’s dock is extremely saturated compared to other components of courtroom design. There is a wide range of views regarding the role a dock has in the courtroom. Scholars such as Dr. Lionel Rosen strongly oppose the dock and argue that it “disfigures the courtroom, mitigates against the presumption of innocence and is a mark of degradation” (Rosen, 1966). On the other hand, entrenched within the U.K. *Court Standards and Design Guide* is the belief that the court shall remain “committed to the presence of the dock” (Her Majesty’s Courts Service, 2010). Recently, there is a growing amount of literature that analyzes the influence the dock has on a juror’s objectivity and perceptions of the defendant. In *Just Spaces: Does Courtroom Design Affect How the Defendant Is Perceived?*, Blake McKimmie—Associate Professor at the University of Queensland—conducted an exploratory study with 258 individuals aged 18-82. Participants were presented one of four courtroom images with varying defendant positions and were asked to provide “qualitative descriptions of the defendant, the suggested crime they were charged with, and the defendant’s likelihood of guilt” (McKimmie, 2016). He found that “the defendant at the bar table was judged more likely to be guilty compared to the defendant in the dock guarded by a correctional officer or in the glass dock” (McKimmie, 2016). In another study conducted by McKimmie and his colleagues, they evaluated the positioning and structural design of the criminal dock in courtrooms in Australia—highlighting common challenges that arise in the modern use of the dock, such as the inability of the defendants to hear effectively, to adequately communicate with counsel, and to be stripped of their right to the presumption of innocence (Rossner, Tait, McKimmie, 2017). Many trials—which might be generally accepted to be fair—have taken place in cramped surroundings with poor acoustics and limited jury facilities (Tait, 2011). A fair trial cannot take place without meeting basic standards for the accused. Tait outlines these standards, which include the opportunity for the accused to “consult counsel in confidence, to hear the court proceedings, to have a place to sit with maxi-

imum standards of dignity, to appear unconstrained before a jury, and, more generally, to be presented in a way that preserves the presumption of innocence” (Tait, 2011).

Most developed societies assert that the public play a pivotal role in legitimizing legal proceedings (Mulcahy, 2011). Notions of open justice have become synonymous with the public as it provides important “checks and balances on the credibility of witness testimony and the partiality of the judge” (Mulcahy, 2011). However, others fear the public due to their unpredictability. Mulcahy comments on how the space of the courtroom has shifted from being a public, multi-purpose building which was heavily frequented, to one constructed to treat the public as visitors—marginalizing and transforming them “from active participants to docile bodies” (Mulcahy, 2011). Furthermore, due to the privatized design of courtroom interiors, trials are becoming “less accessible to the common people...resulting in procedural inaccessibility” (Spaulding, 2013). The partitioning of space in courtrooms has a profound impact on public participation in society and poses a risk to the lawfulness of the court.

## Gap Analysis

Research into courthouses has received slightly more attention from other disciplines such as architecture or geography, which focus predominantly on the aesthetic and historical study of the court. In contrast, my research examines the socio-legal influences present in modern Canadian court design. Of the research that currently exists within this field, few works look at Canadian courts, and even fewer investigate the individual elements of a courtroom such as the role of the dock or vertical height paradigms. To fill this gap, my paper merges these isolated elements into one all-encompassing body of work.

## Methodology

This study employs a quasi-experimental research method, utilizing a nonequivalent control group design. The quasi-experimental design uses “control and experiment groups too but does not randomly assign

participants to groups” (Creswell, 1963). The reason for selecting this methodology is to collect generalizable quantitative data. Since I am examining a spatial phenomenon present within Canadian courts, utilizing quantitative data analysis allows me to understand people’s cognition through objective measurement that reflects the general population.

After ethics approval from my school’s Internal Review Board, a series of trial recreations were conducted using students aged 14-18 from Appleby College, an independent high school in Oakville, Ontario, Canada. According to Appleby’s 2017-2018 prospectus, among the 762 students who attended the school this year, 48 international cultures were represented (Appleby College, 2018, p. 56). Having a wide range of cultural backgrounds and ethnicities to draw from allows for less bias and more applicable data.

Using a nonequivalent control group design, groups were selected without random assignment. Both groups were asked to participate in a test (mock trial) and post-test (questionnaire) but were subject to different treatments (Creswell, 1963). The treatment employed on all four groups took the form of varying courtroom design layouts (see Appendices A-D). For each of the four mock trials, the courtroom was modeled after a unique layout. The layouts were carefully curated with consideration of current courtroom designs from the most populous provinces from Canada’s West coast, East coast, and central regions: British Columbia, Nova Scotia, and Ontario, respectively. Quebec was intentionally excluded as they use a different trial system.

The test consisted of a series of four, two-hour long trial recreations. Within each trial, 10-12 participants were asked to be jurors. This is consistent with the number of jurors used in all Canadian criminal trials. During the trial recreation, jurors were evaluated on their subconscious spatial cognitive responses to their physical surroundings and whether or not courtroom design influenced how they perceived the defendant. Having signed a consent form, participants were fully informed of their duties as a jury member prior to the trial. However, the fact that they were being tested on their spatial cognition was excluded and was only disclosed following the completion of the study, as it could affect their cognitive focus and hinder in obtaining their true, subconscious responses.

The trial recreation itself was carried out by law

students at Appleby College. There were two rounds of trials. Trials A and B used the mock case *R v. Rogers*. During the second round, trial C and D used the mock case *R v. Delaney*. The cases were issued from the Ontario Bar Association, approved by the school board, and selected in coordination with Appleby’s law teacher. Despite having similar cases, the jury and courtroom configuration were different for each.

The post-test was a questionnaire covering basic demographic questions, questions about the verdict of the case, and questions prompting spatial analysis thinking. A variety of response formats were present in this questionnaire such as simple dichotomous, adjectival scales, 10-point Likert scales, multiple choice, and short answer. Although dichotomous variables produce nominable data, some answers lie on a continuum rather than one side or the other and limiting responses solely on dichotomous formats would result in important information loss (Fallowfield, 1995). Due to this, I also used continuous judgment formats. The 10-point Likert scale, adjectival scale, multiple choice, and short answers allowed for more accurate responses than a dichotomous scheme could provide because it gave participants more options and room for detail.

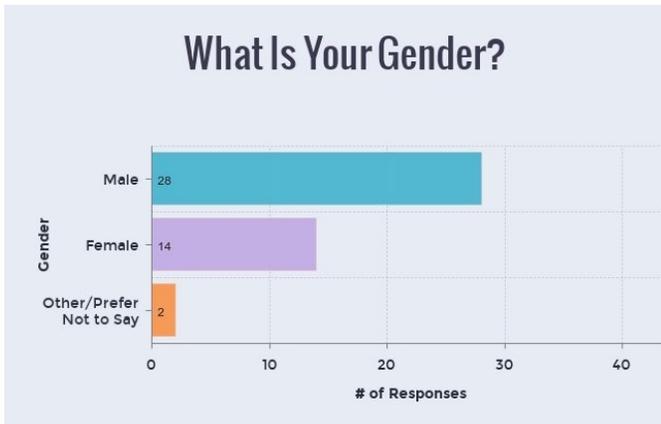
## Findings. Analysis and Results

The data was gathered from 44 Appleby College students aged 14-18. Participants were divided across four trials. Trials A, B, and D had over a 50% majority of guilty verdicts. Trial A had a 70% majority, Trial B had a 75% majority, and Trial D had a 60% majority. Of the four trials, Trial C was the only trial to have had over 50% majority of innocent verdicts—receiving a 66.67% majority.

### Gender

The gender breakdown of all 44 jury members is shown below. There were 28 male jurors, 14 females, and 2 jurors who identified as “Other / prefer not to say.” Doubling the number of males was done deliberately in attempts to accurately imitate the average jury’s male-saturated gender ratio found in most criminal trials.

Figure 1:



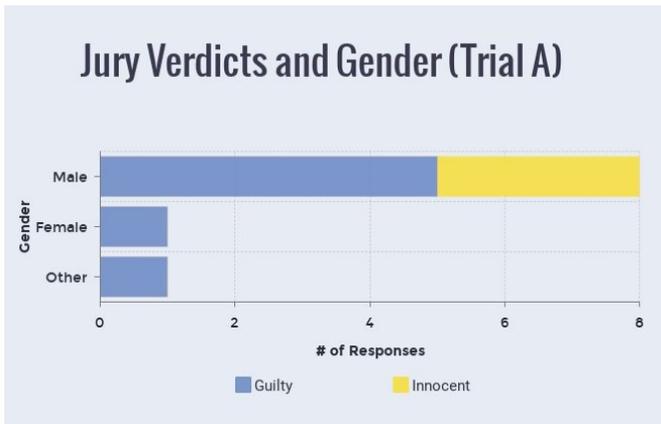
**Juror’s Gender and Verdict:**

For each of the four trials, the correlation between a juror’s gender and verdict are highlighted in the graphs below.

**Trial A Results:**

In Trial A, 62.50% of males and the two responses from females and those who identify as “Other” found the defendant to be guilty. There were three innocent verdicts, all of which were from male respondents.

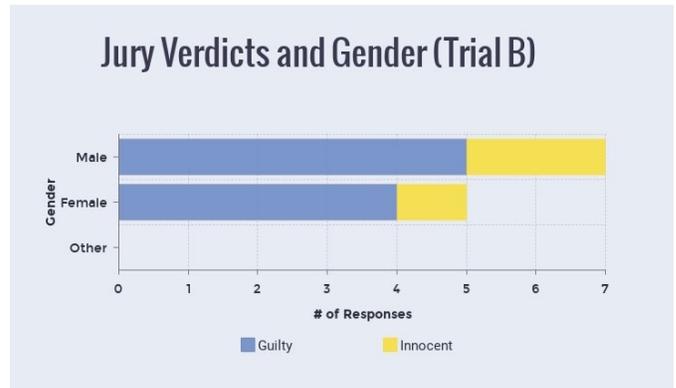
Figure 2:



**Trial B Results:**

Trial B’s results indicated that 71.42% of males and 80% of females gave guilty verdicts. The ratio between male and female responses evened out to a 4:5 ratio and although both genders gave innocent verdicts, males had twice the number of innocent votes than females.

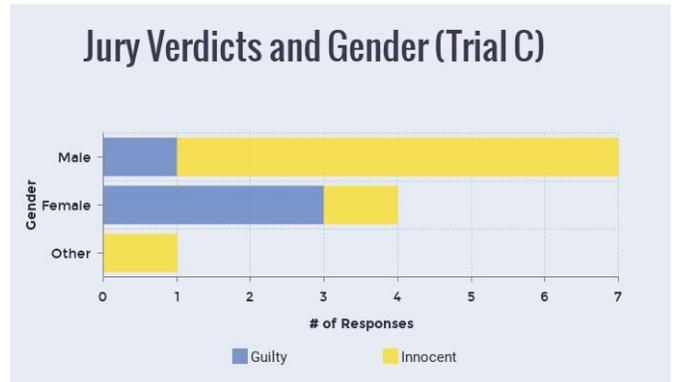
Figure 3:



**Trial C Results:**

In Trial C, the results showed a significant change in the ratio of guilty to innocent verdicts under the male and other categories. Of the responses, 85.71% of males, 25% of females, and the respondent who identified as “Other” found the defendant to be innocent. Female respondents had 66.67% more guilty verdicts than male respondents.

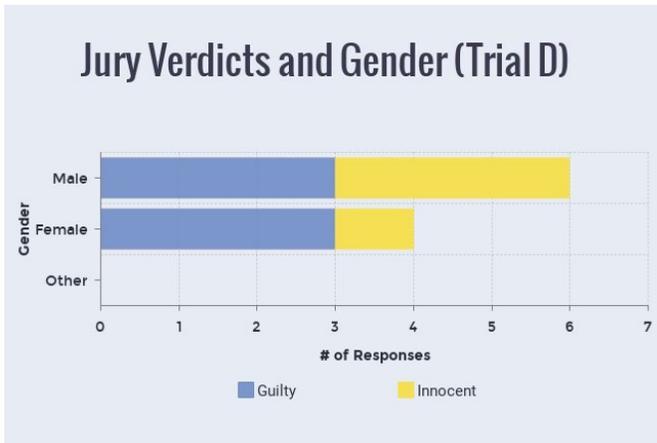
Figure 4:



**Trial D Results:**

In Trial D, the number of guilty verdicts between male and females were equal, as both had three guilty verdicts. The ratio between both group’s innocent categories was different, however; males had 66.67% more innocent verdicts than females.

Figure 5:



level of physical comfort was a 2 out of 5. Of the total responses given, 70% were guilty and 30% were innocent verdicts. Responses rated 3 or lower received at least 50% guilty verdicts while responses rated at 4 or higher received no guilty verdicts.

Figure 6:



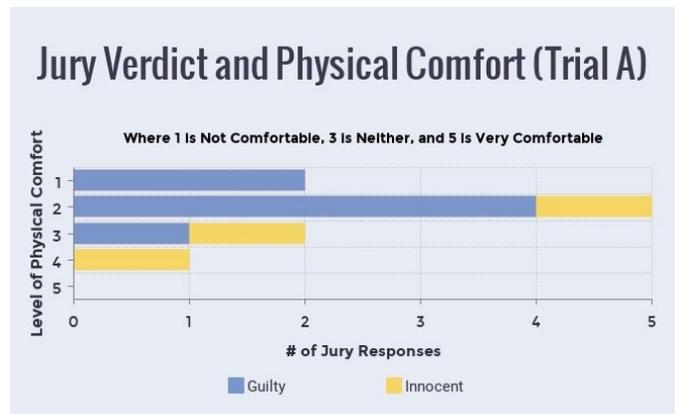
## Analysis

From the data shown, there is a common trend across all graphs. Respondents under the male category have consistently produced a greater number of innocent verdicts than those in the female and “Other” categories. The number of innocent verdicts that females have given out—if any, have been a fraction of the number of innocent verdicts given by male respondents. These results indicate that males are more likely to issue innocent verdicts than females and support the findings of past studies conducted by Forsterlee and his colleagues. In their research, it was discovered that women tend to be more emotionally sensitive and sympathize with the victim, rendering harsher verdicts and punishments, whereas males tend to be more evidence-driven and identify more with the defendant, allocating more lenient verdicts (Forsterlee et al., 2006).

### Trial B Results

The type of seats used in Trial B were heavy wood- en chairs. From this data, it is evident that the levels of comfortability and number of innocent verdicts drastically decreased. Respondents who provided ratings of 1, 2, and 4 had 100% guilty responses, while those who gave ratings of 3 had 50% guilty responses.

Figure 7:



### Juror’s Level of Physical Comfort and Verdict

The correlation between a juror’s level of physical comfort and their corresponding verdict can be seen below. The degree of comfort was measured on a scale from 1 to 5, 5 being the most comfortable.

#### Trial A Results

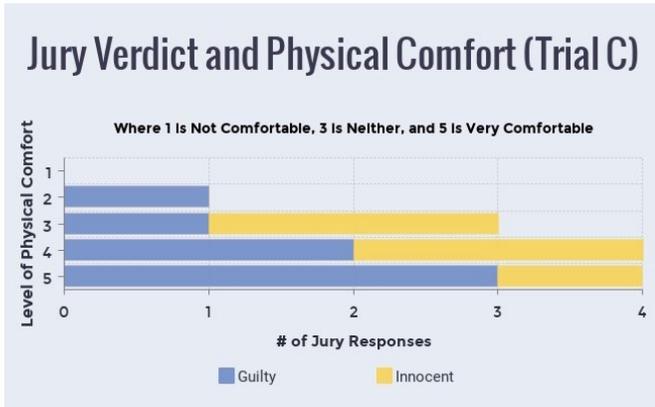
For Trial A, the courtroom was arranged so that jurors sat in hard plastic chairs. The results showed that the most common rating jurors used to describe their

### Trial C Results

Trial C provided jurors with cushioned chairs and received significantly higher ratings of juror comfortability and innocent verdicts. Of the total responses collected, 41.67% were innocent verdicts. The most common rating that was given was a 3 and those who gave this rating had 33.33% guilty verdicts. Individu-

als who rated 4 had 50% guilty verdicts and responses under rank 5 had 75% guilty verdicts.

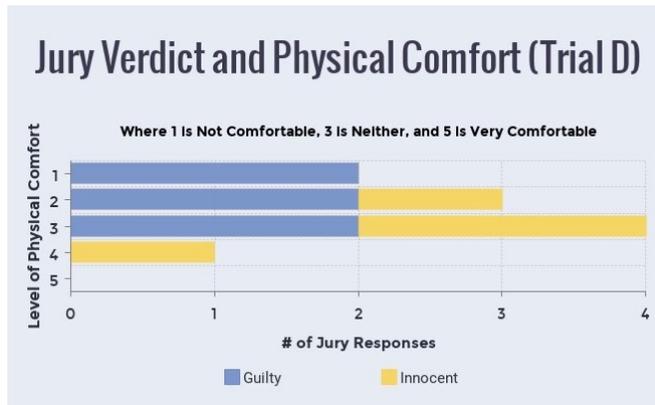
Figure 8:



**Trial D Results**

Jurors in Trial D were asked to sit in metal folding chairs. The most common rating given by jurors was a 3. The distribution of verdicts within this rating showed a 50% split between verdicts. Across ratings 1-3, the number of guilty verdicts delivered remained consistent, however, innocent verdicts did not. Level 1 had 0%, level 2 had 66.67%, and level 3 had 50% innocent verdicts.

Figure 9:



## Analysis

From the results collected, there is a direct correlation between higher ratings of comfortability and innocent verdicts from jurors. This trend supports research founded in the current field of ergonomics, which states that high levels of comfortability enhance cognition, concentration, and critical thinking in professional environments (Bennett, Woodcock, & Tien, 2006). Across the trials, the number of innocent verdicts remains the same or increases as the levels increase, the exception is Trial C, where there is a decrease in innocent verdicts from level 4-5.

### Distribution of Juror’s Viewing Time

For each of the four trials, the amount of time juror’s spent viewing various courtroom members was tracked.

#### Trial A Results

The results from Trial A indicate that the defense lawyers and the defendant were viewed by the majority of jurors for 15-30 minutes. The Crown prosecution was viewed by most jurors for a minimum of 15 minutes to over 30 minutes. Viewing time for the judge was evenly dispersed and ranged from a minimum of 10 minutes to over 30 minutes. In contrast, the “Other” category was not as focused on, since the majority of jurors spent only a maximum of 15 minutes viewing these items.

Figure 10:

How Much Time Did you Approximately Spend Focused on the Following? (Trial A)

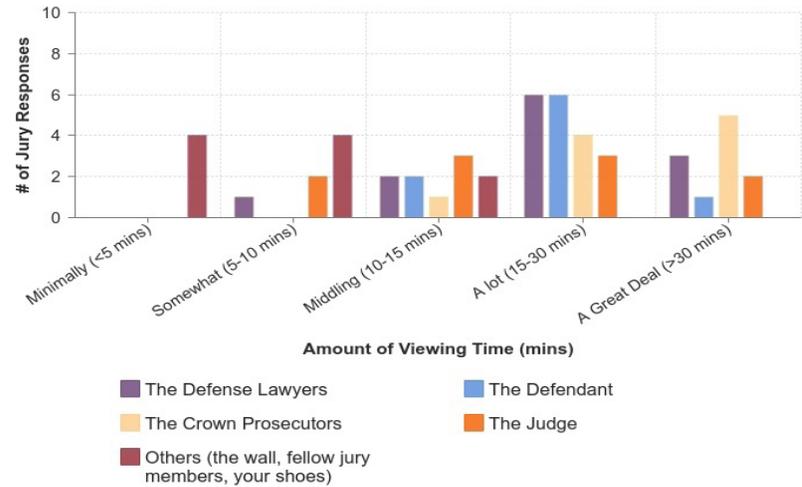
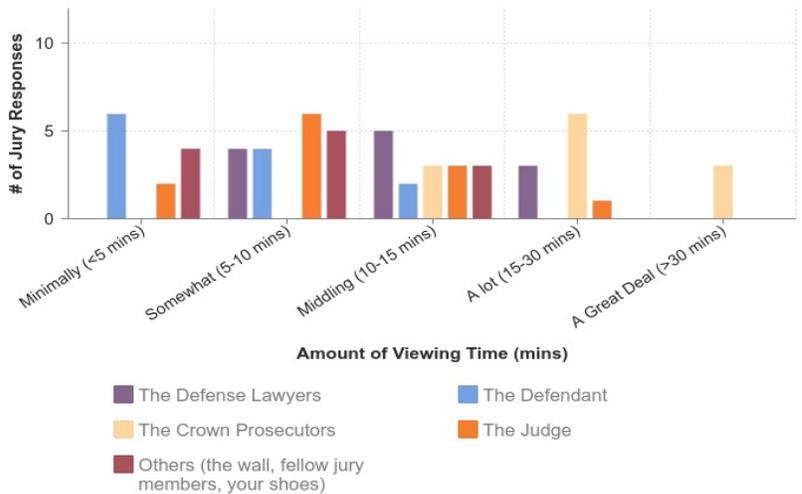


Figure 11:

How Much Time Did you Approximately Spend Focused on the Following? (Trial B)



#### Trial B Results

The results from Trial B reveal the viewing time for all components shifting to the left. The most prominent shift was for the defendant. The average viewing time for the defendant for the majority of jurors was under 5 minutes, with the greatest amount being 15 minutes. The most common time allotted to the judge was 5-10 minutes

and for the Crown prosecution, it was 15-30 minutes. Jurors viewed the defense lawyers and other components for the same amounts of time.

Figure 12:

How Much Time Did you Approximately Spend Focused on the Following? (Trial D)

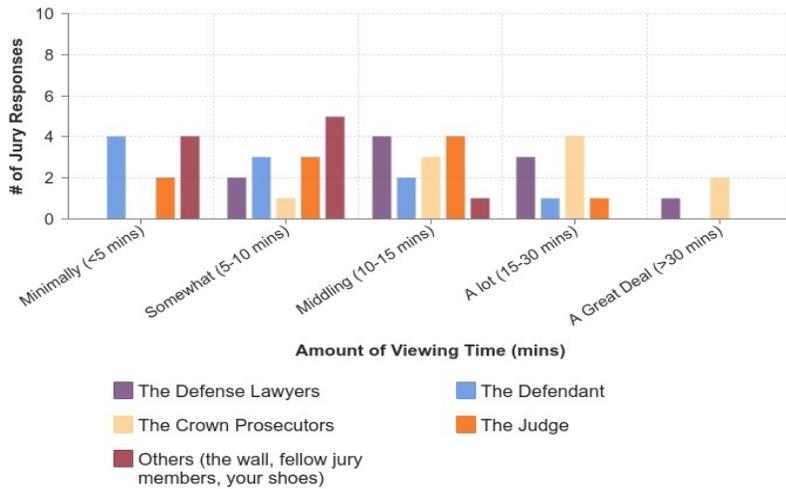
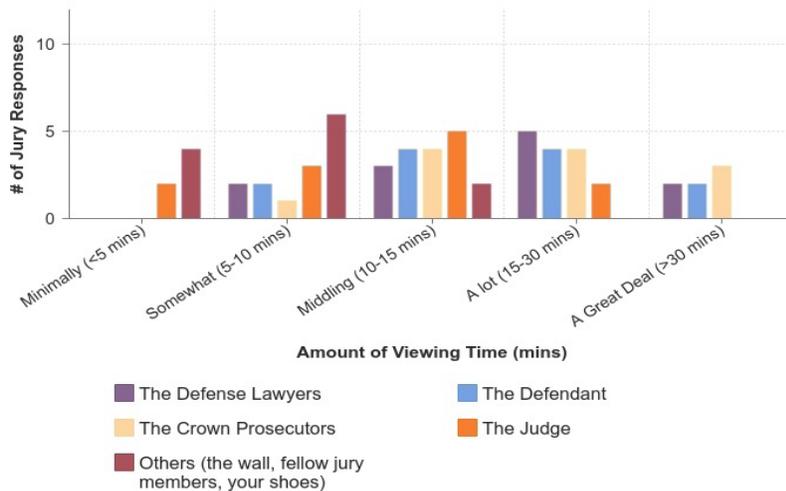


Figure 13:

How Much Time Did you Approximately Spend Focused on the Following? (Trial C)



**Trial C Results**

The data from Trial C shows that the viewing time across all components was relatively dispersed, with a slight spike within the 10-30-minute range for the judge and the Crown prosecutors. The only outlier was the time jurors viewed other components, which was slightly less than the average.

**Trial D Results**

Once again, the results for this trial indicate a rather even distribution of viewing times. Components such as the defendant and other components took up a maximum of 10 minutes, while the defense lawyer, the Crown prosecution and the judge were viewed by the majority of jurors for approximately 15-30 minutes.

**Analysis**

The two components that had the most drastic variations in viewing time across all four trials were the defendant and the judge. The data collected demonstrates how the physical placement of the defendant influences how long a jury views them. In Trial A, the defendant was placed directly across from the jury box, allowing for a direct line of sight (see Appendix A). The majority of jurors spent 15-30 minutes looking at the defendant. For Trial B, the defendant was positioned at the end of the defense lawyer’s desk and was out of the juror’s direct line of sight (see Appendix B). As a result, jurors were less inclined to look at the defendant and the majority viewed the defendant for less than five minutes. The defendant was placed at the back of the courtroom for Trial C, and although they were not in the jury’s direct line of sight, there was nothing blocking their view (see Appendix C). Data showed an increase in viewing time from jurors—ranging from 10-30 minutes. Lastly, Trial D placed the defendant’s dock beside the judge’s desk so that they were facing the exit and partially blocked by the judge (see Appendix D). Responses from this trial reveal a decrease in viewing time averaging around a maximum of 10 minutes. From this, it appears that sight lines have a significant influence on the amount of viewing time defendants receive in the trial.

Additionally, in Trials A and B, the judge’s desk was elevated on a 2-foot-high platform and for Trials C and D, the judge remained

on the same level as the other members of the court. Results from Trials C and D indicate that the average viewing time of the judge was from 5-15 minutes, whereas the average time for Trial A averaged 10-30 minutes and Trial B was 5-10 minutes. In a series of studies, Thomas Schubert analyzed the relationship between vertical positions and symbols of power, concluding that the concept of power is perceived by individuals on a vertical plane (Schubert, 2005). The findings show that there were no significant changes in viewing time across all four trials. This challenges the ideas put forth by the prevailing literature of this field, which suggests the viewing judge for judges would increase as their height did. These results indicate that higher platforms are needed to generate more disparate results and that an elevation of 2 feet does not significantly influence the degree of authority a judge has within the court.

## Courtroom Descriptions

Jurors were asked to give three characteristics to best describe the courtroom. Responses were documented and the most repeated characteristics were organized in the table below.

### Analysis

These results provided insight into what stood out and resonated with jurors during the trials. Trials A and D had a majority of characteristics oriented towards professionalism and seriousness, whereas Trials B and C gathered more responses linked to emotion. It is important to note that Trial C was the only trial to receive an innocent verdict and received responses that commonly described the courtroom to be comfortable and spacious, further revealing a relationship between increased comfort and innocent verdicts. This data can be used to support future findings as it offers a direct perspective on a juror’s spatial understanding of the room.

Figure 14: Courtroom Descriptions

Jurors were asked to give 3 characteristics to best describe the courtroom. Responses were documented, and the most commonly repeated characteristics were organized in the table below.

	<b>Responses</b>
<b>Trial A</b>	Jurors most commonly described the courtroom of Trial A to be professional, serious, interesting, tense, sophisticated and realistic.
<b>Trial B</b>	The most common characteristics used to describe Trial B’s courtroom were intense, heated, passionate, bias, focused, and emotional.
<b>Trial C</b>	<u>The majority of</u> responses for Trial C described the courtroom as spacious, emotional, captivating, comfortable, serious, and knowledgeable.
<b>Trial D</b>	The results indicate that jurors most commonly described the courtroom for Trial D to be professional, formal, quiet, serious, and organized.

## Limitations

There are a few limitations that should be acknowledged. This study aimed to replicate a series of authentic criminal trials. However, given that these recreations were conducted as mock trials, there was a lessened sense of gravitas present due to the lack of consequence in the jury's final verdict. Additionally, the courtroom was reproduced as an approximation of a real courtroom, but this, too, reduced the stakes. Nevertheless, the layouts were organized to avoid any flawed deviations from the traditional layout.

Further, the average jury trial in Canada can take a week to several months to complete. The trial recreations conducted here were restricted to two-hour time blocks. The time constraint limited the accuracy of a true trial. Although jury verdicts in Canadian Criminal cases must be unanimous, the method used in this study was based on a majority. Unanimity takes longer to achieve and because the jury did not have unrestricted time to deliberate, they were, instead, allotted roughly 15 minutes to determine a verdict.

Participants in this study consisted of Appleby College students, aged 14-18. The majority of participants were aged 16 or older, which is fitting as the minimum age to serve as a juror in Canada is 18. Since my participants were from one school, there was no sense of anonymity between mock trial actors and jury members. This was taken into consideration and steps to ensure all jurors were as objective as possible were carried out in the form of a code of behavior conduct outlined in the juror's declaration of consent form. Lastly, although the four trials were split in half to carry out two different cases, they were similar criminal law cases to be as consistent as possible, though they were not the same.

## Conclusion

The data from this study revealed that Trials A, B, and D had greater than a 50% majority of guilty verdicts, whereas Trial C had a 66.67% majority of innocent verdicts. The layouts that were created within this study aimed to manipulate three central elements of the courtroom: the placement of the defendant, the verticality of the judge, and the comfort of the jury members. These elements were varied across all four

trials and, through thematic analysis, the stark contrast in verdict outcome for Trial C in comparison to the other three trials is a central area of discussion.

Trial C's courtroom layout was most commonly described by jurors as emotional, captivating, and comfortable. It was designed in adherence to the layout of Ontario and BC criminal courts – with the defendant placed out of the juror's line of sight, near the back of the room, forcing jurors to turn their heads considerably if they wanted to view the defendant (see Appendix C).

In addition, although neither Trials C or D had an elevated judge's desk, they had opposing verdicts. This indicates there is no significant relationship between the verticality of the judge and the jury's verdict. Although this element is less substantial than the other two factors, it prompts a need for further research into height differentials in the courtroom.

The final element of the courtroom that was analyzed was the ergonomics of the juror's seats. All four trials had different chairs for the jury. As seen in the results, the highest ratings for comfortability was given to the cushioned chairs in Trial C. The trial with the highest rank in comfortability was also the only trial to receive majority innocent verdicts, which suggests that higher levels of comfort lead to boosted moods and higher rates of innocent verdicts.

From this, it is evident that changing the layout of all four courtrooms did, in fact, have a considerable influence over a juror's perception of a defendant and the trial's outcome; however, one layout, in particular, resulted in a significant change in the verdict. The courtroom layout used in Trial C posed a direct influence on the trial's final verdict. Therefore, a courtroom design created to most likely bolster higher rates of innocent verdicts would have the defendant at the back of the courtroom and would ensure the jurors are at a state of optimal comfort. Further research into the degree of elevation the judge's desk should be explored. In the future, this study should be held in authentic courtrooms with access to proper equipment and aim to further manipulate elements such as the color and lighting of a courtroom as numerous studies have linked the use of color and lighting in decoration to have varying effects on an individual's mood across different ages and genders (Yildirim, Akalin-Baskaya, & Hidayetoglu, 2007).

Since the courtroom is meant to be a site of objectivity, attempting to design a completely equitable layout is impossible as spatial cognition is inherently subjective. The best approach to reforming courtroom design is by analyzing what spatial elements within the court will sway jurors towards different verdicts. The findings within this study determined a layout that proved to increase the defendant's likelihood of obtaining innocent convictions. The implication of these findings is that if this approach to reform is considered by the Canadian government, architects will need to be more conscientious when planning the layout of courtrooms across Canada. By manipulating various courtroom elements, one generates the risk of designing courtrooms that compel jurors to be either guilty-leaning and or innocent-leaning. Legal architects must be cautious when proposing new courtroom designs and recognize the limits of crafting a completely objective courtroom. Given this, it remains imperative that the Canadian government continues its efforts in reforming this realm of the criminal justice system. Stripping Canadian courts of the inherent biases that are deeply rooted within these sites of justice is not only crucial in upholding a defendant's fundamental rights, but in maintaining the ideals of democracy, freedom, and equality that Canada is predicated upon.

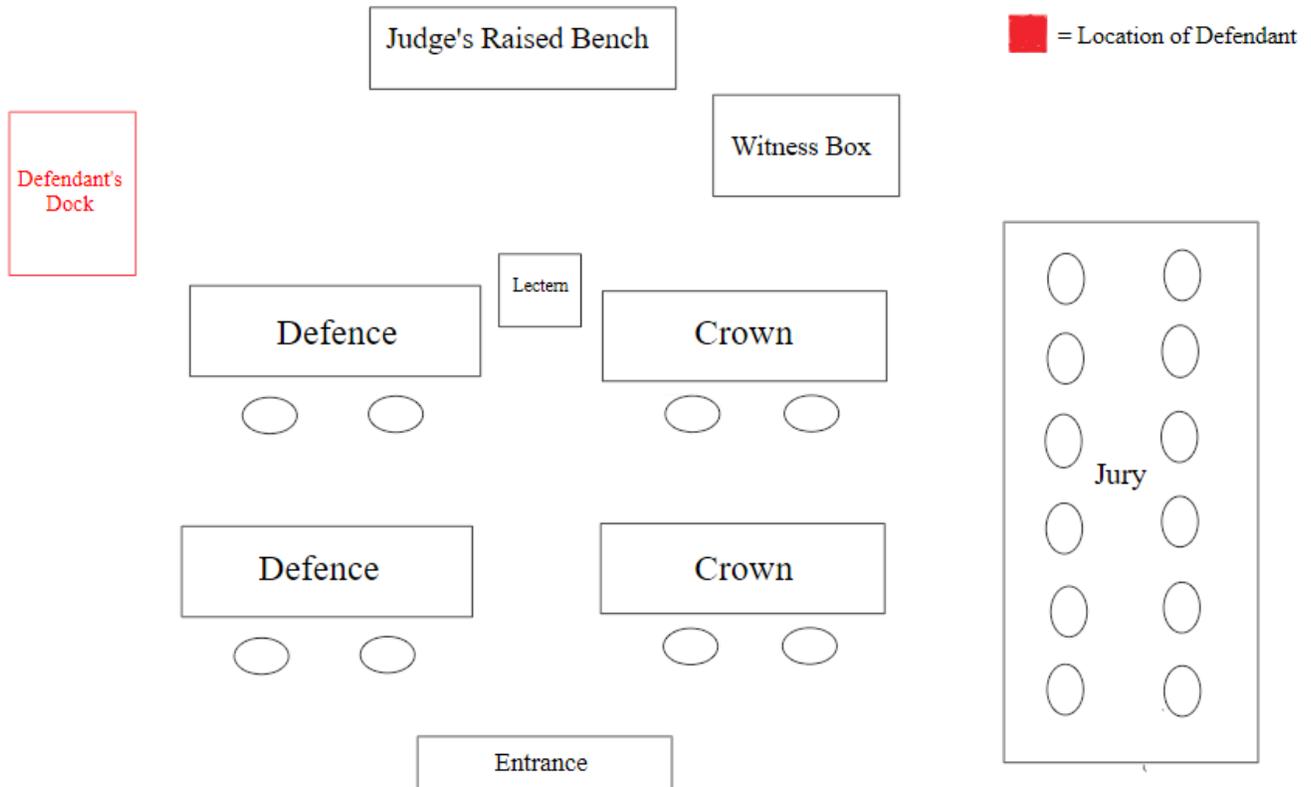
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## SPATIAL COGNITION IN THE COURTROOM

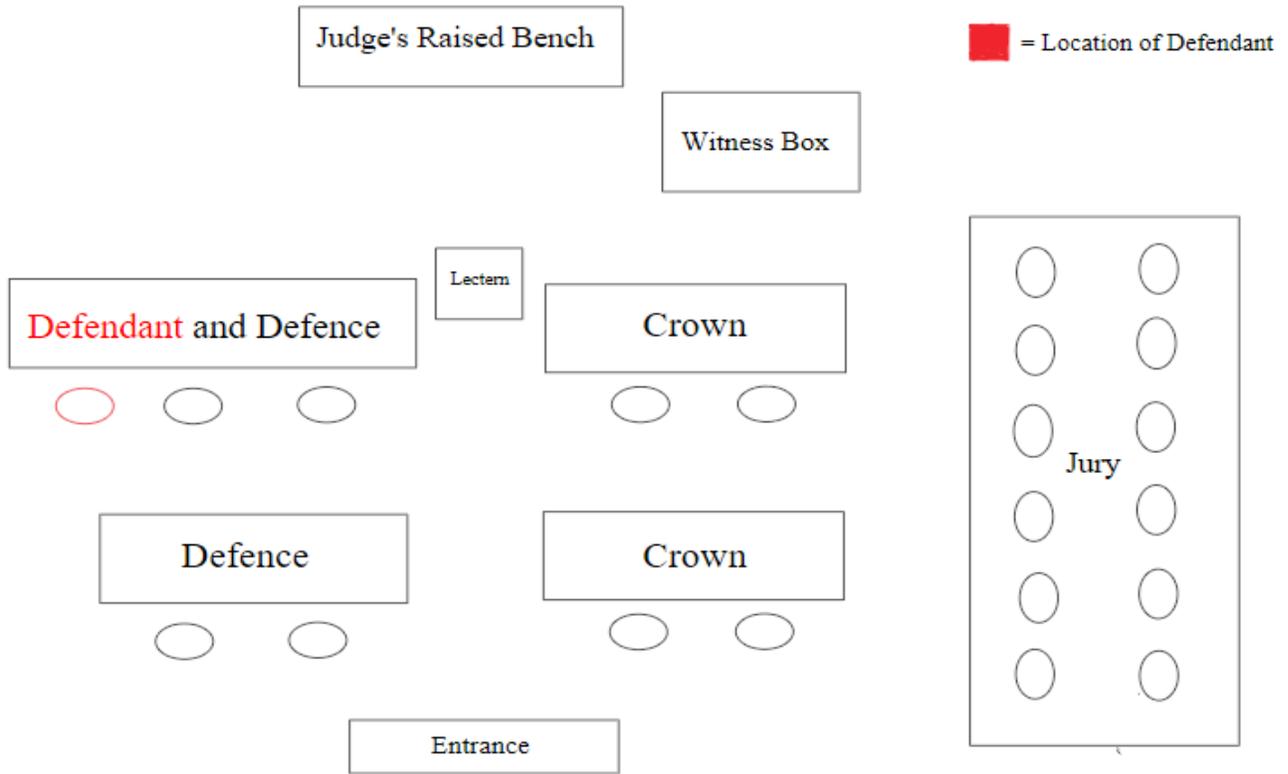
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### Appendix A – Trial A Layout

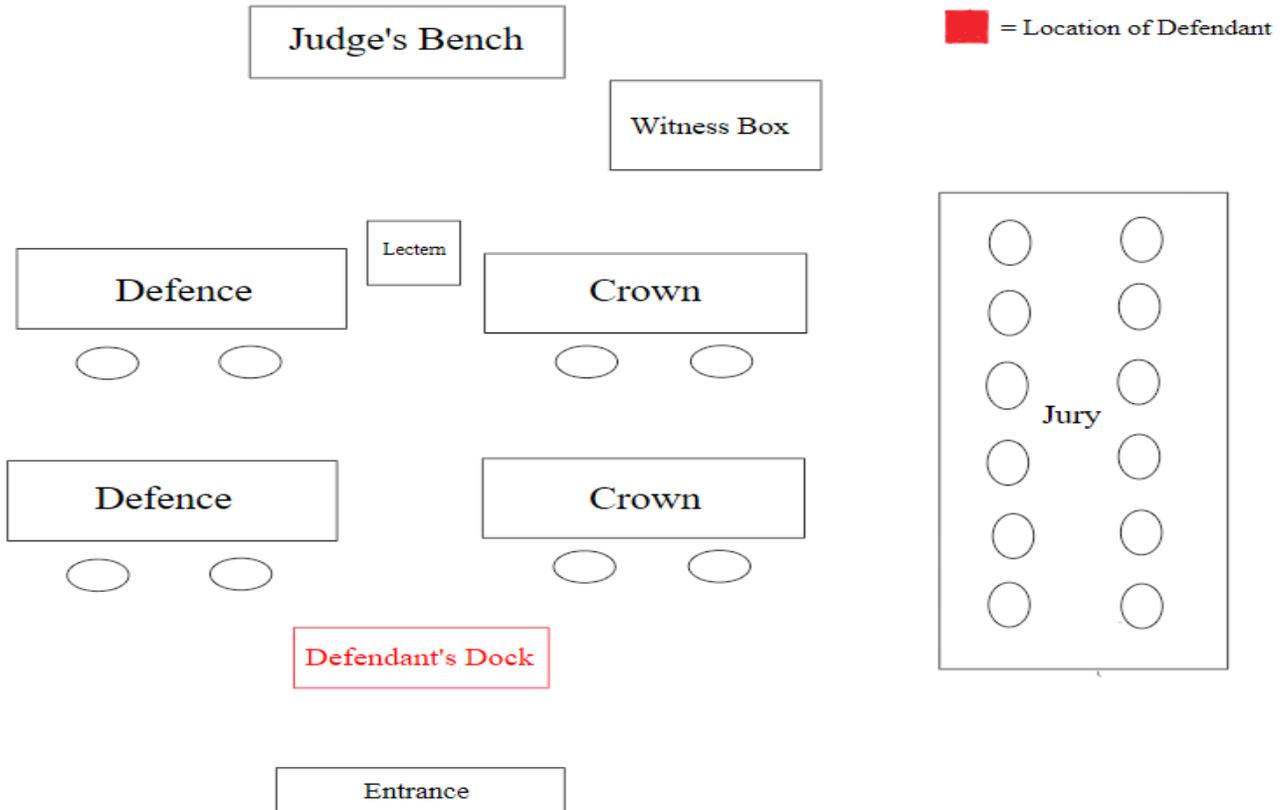


# SPATIAL COGNITION IN THE COURTROOM

## Appendix B – Trial B Layout

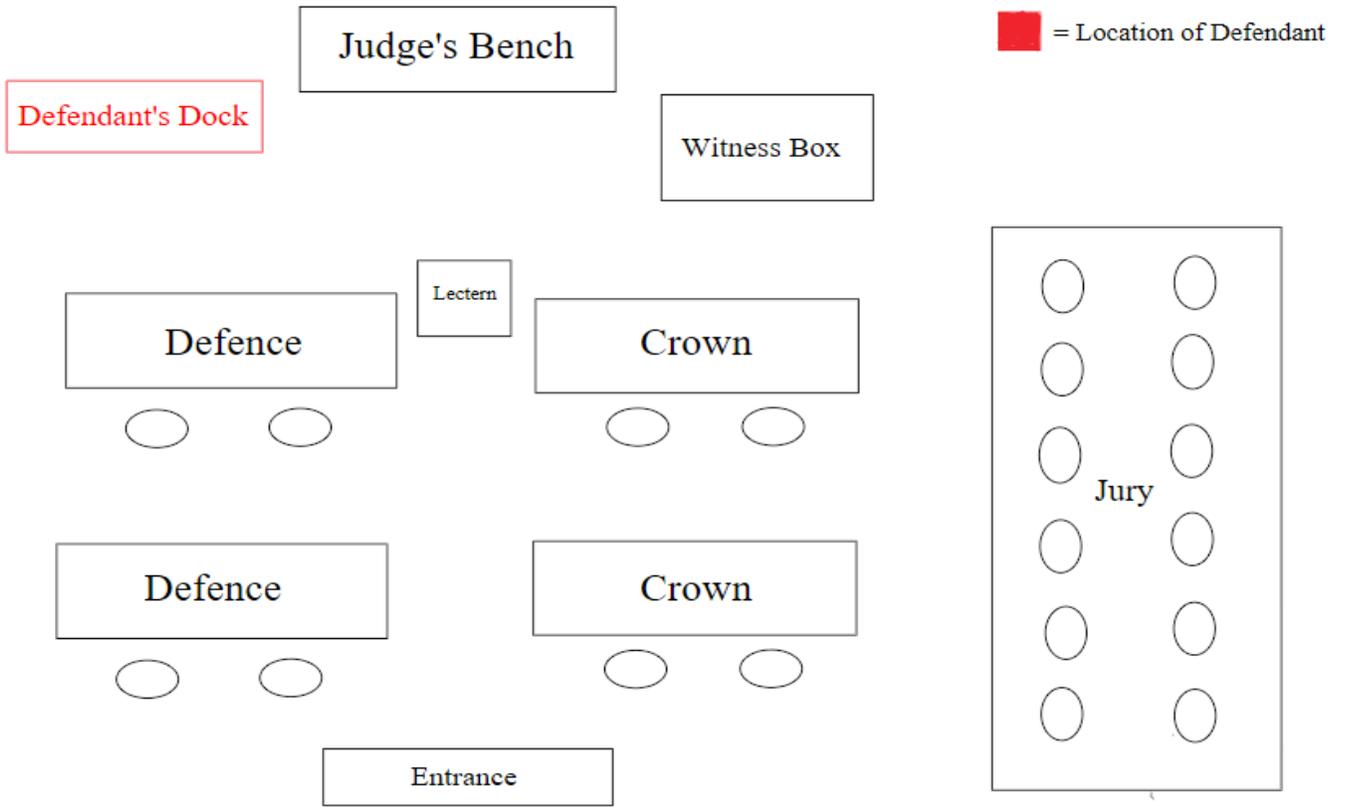


## Appendix C – Trial C Layout



SPATIAL COGNITION IN THE COURTROOM

Appendix D – Trial D Layout



SPATIAL COGNITION IN THE COURTROOM

Appendix E – Questionnaire

Please circle the following answers:

What gender do you identify with?

Male

Female

Other/ Prefer not to say

What verdict would you give to the defendant?

Guilty

Innocent

In the space below, please give a brief explanation outlining the reasoning and thought process that led you to your verdict.

Use 3 words to describe the courtroom.

On a scale of 1 to 5, rank your level of physical comfort throughout this trial (1=not comfortable, 3= neither comfortable nor not comfortable, 5=very comfortable)

1      2      3      4      5

How much time did you approximately spend focused on the following?

	Minimally ( < 5 minutes)	Somewhat (5– 10 mins)	Middling 10-15 minutes	A lot 15-30 minutes	A great deal ( > 30 mins)
The Defence Lawyers					
The Defendant					
The Crown Prosecutors					
The Judge					
Others (the wall, fellow jury members, your shoes)					

How often did your mind wander to the point where you were not present or actively engaged in the trial?

Never

One or twice

Rarely

Frequently

Very frequently

## Appendix F – Declaration of Consent Form

### Declaration of Consent Form

Name of Child/Student: \_\_\_\_\_

I, \_\_\_\_\_ (full name), do hereby acknowledge, consent, and agree to all of the following terms and conditions listed below:

I understand that I am participating in a research experiment for Connie Zhang's AP Research Paper.

I understand that my identity will not be linked with my data, and that all information I provide will remain confidential.

I understand that my participation is voluntary, and that I am free to withdraw at any time, without giving any reason or receiving any resulting penalty.

I understand that by agreeing to participate in this experiment, I am expected to attend the full duration of the experiment (2 hours).

I understand that my role as a juror requires me to be as objective and impartial as possible throughout the duration of the trial and during the deliberation period.

I understand that by accepting to participate in this experiment, I am agreeing to behave and uphold a standard of professionalism and maturity.

I understand that in addition to my job as a juror, I must complete a short questionnaire that will be distributed after the trial is completed.

I have read and understood the above information and hereby give Connie Zhang my consent to use derived from this experiment in her research.

Participant Signature:

Date Signed: