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# letter from the editors-in-chief

Readers,

The COVID-19 pandemic has created and exacerbated many challenges around the world. We have all been forced to adapt to changing circumstances, and *Arbor* this year is no different. More than ever, the pandemic has exposed systemic inequalities and gaps in our socio-political, economic, and health systems. This newest volume of *Arbor* seeks to address many of the complex issues and pressing public challenges we are collectively facing, ranging from online learning and Indigenous food sovereignty, to cyber polarization and thawing permafrost.

One thing we have all learned over this past year is the importance of community and knowledge sharing. We are proud to present this volume of *Arbor* as it showcases critical research and expertise from a breadth of University of Toronto students. We are committed to highlighting research from the social sciences, humanities, and sciences (life and physical) in order to provide everyone a space to celebrate their work. Throughout these pages you will find nuanced critiques, valuable solutions, and pathways to further research. By the end, we hope that you will feel inspired to join the conversation surrounding undergraduate arts and science research on our campus.

Sincerely,  
Emma Davy & Foti Vito  
**Editors-in-Chief**

The logo for Arbor is written in a vibrant red, cursive script. The word 'Arbor' is written in a fluid, handwritten style with a long, sweeping underline that extends to the right.

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ALL THE **KNOWLEDGE** I POSSESS  
EVERYONE ELSE CAN ACQUIRE, BUT  
MY **HEART** IS ALL MY OWN.

– JOHANN WOLFGANG VON GOETHE

01



# social sciences

## Colonialism Intensifies Indigenous Food Sovereignty Struggles

*Sabrina Poinen is a fourth-year Human Geography and Environmental Studies student.*

Indigenous nations in Canada continue to face a colonial food system that disrupts their connection with their culture, land, and food. As a result, many of these nations are disregarded which leaves them to deal with food sovereignty struggles. Sadly, these struggles go unnoticed as non-Indigenous agricultural issues tend to dominate food movement discussions. Consequently, Indigenous health and well-being deteriorate, yet nothing is done to tackle these struggles. The lack of access to Indigenous land and resources is heavily influenced by land and settler colonialism as it undermines their connection to food and their food system. With the Westernized mindset viewing land as a resource to exploit, “food sovereignty recognizes that food is more than a commodity and prioritises food policy” (Rudolph & McLachlan, 2013, p.1080). Therefore, Indigenous food sovereignty is a solution that needs to be supported, as it provides a helping hand to Indigenous people that face the underlying issues impacting their health (Indigenous Food Systems Network, 2010).

Although non-Indigenous agricultural issues overpower food movement discussions, it is vital to recognize the grim reality of colonialism in order to support Indigenous food sovereignty struggles. In this paper, I introduce this debate by highlighting the acts of colonialism that prevail through unequal laws, extraction projects, and broken treaties. I argue how these factors undermine the well-being of Indigenous bodies, and then proceed to evaluate possible solutions to these Indigenous food sovereignty struggles.

### ***Colonialism & Unequal Laws***

In September 2009, Canadian Prime Minister Stephen Harper stated that the country had ‘no history of colonialism’ (Crosby & Monaghan, 2012, p. 422). This demonstration erases the colonial reality and causes public unawareness and lack of support for Indigenous food sovereignty. Therefore, Indigenous food sovereignty is “...best understood in the context of historical injustice” (Rudolph & McLachlan, 2013, p.1080). By calling attention to land and settler colonialism that continues to dominate in Canada, a clear connection is drawn to the Indigenous food crisis. Since the beginning of time, “...land provided all of the necessities of life for Indigenous people, including food, water, heat, medicine, and shelter” (Ray et al., 2019, p.55). Land is a central aspect of the basic survival of Indigenous bodies, but settler colonialism creates a morally unjust system that weakens their livelihood (Ray et al., 2019, p.56). Thus, Indigenous’ relationships with their food and food systems are ultimately damaged.

Land dispossession has and continues to occur through unequal laws and extraction projects that result in health inequity. For example, changes to the Indian Act in the omnibus budget Bill C-45 made “...it easier for the federal government to remove land from the First Nations” (Menz, 2013). By giving power to the state, the elimination of Indigenous bodies prevails “...thus [restricting and diminishing] any claims communities had to their territories and resources” (Ray et al., 2019, p.56). As a result of these limitations, Indigenous people were unable to pursue hunting and harvesting practices that sustain their health and overall well-being. Provincial governments furthered these restrictions by instituting hunting and fishing laws that “...limited hunting seasons for specific animals and set game limits, and off-season hunting...” (Ray et al., 2019, p.56). This highlights the significant impact of colonial powers as settlers view land as a desired commodity, thereby robbing the land and livelihood



of Indigenous bodies.

On the contrary, the Indian Act does disclose certain privileges for Indigenous people, but it is still criticized for its legal categories of Status and Non-Status Indians. Privileges are only given to Status Indians “...such as the right to not pay taxes on certain goods, while Non-Status Indians do not [receive these privileges]” (Bell & Henderson, 2006). Although this addresses certain Indigenous people, the division enables the federal government to codify their bodies, “...reduce the number of status Indians...,” and pin them “...against each other for access to rights and increasingly inadequate resources” (Ray et al., 2019, p.56). This policy affected the Métis hunters in Manitoba who did not have treaty status, as the implemented restrictions on the wild harvest produced substantial hunger in Métis families (Rudolph & McLachlan, 2013, p.1085). Government policies of control leave many nations frustrated as this injustice of stripping status away from true Indigenous people reiterates colonial powers and furthers health inequity.

### ***Effects of Extraction Projects***

Indigenous food sovereignty struggles intensify from the effects of resource extraction projects on their food and land. Due to industrial pollution and treaty violations, these factors pose threats to Indigenous foodways (Issac et al., 2018, p.4). For instance, changes to Bill C-45 allow the government and corporations to undergo massive projects that erode the land and rights of Indigenous people. In fact, “...the Navigable Waters Protection Act reduced the number of protected lakes and rivers in Canada from 2.5-million to 82” (Gardner, 2013). The effects of mining, forestry, and hydro development have drastically transformed the northern landscape which have impacted Indigenous food sovereignty (Rudolph & McLachlan, 2013, p.1086).

In 1961, the construction of the Grand Rapids Dam and Generating Station caused radical changes to Indigenous food systems (Rudolph & McLachlan, 2013, p.1084). In a research study conducted by Rudolph and McLachlan (2013), the majority of participants stressed that the dam destroyed their local gardens as the land and water were altered; thereby, contributing “...to the dissolution of the local food system” (Rudolph & McLachlan, 2013, p.1085). Evidently, the Grand Rapids Dam and Generating Station cannot be viewed in isolation from the wider Indigenous experiences with colonization.

Corporations using Indigenous lands reflect the risks of resource exploitation for meeting local needs. Land foods, hunting, fishing, and gardening were all altered because of this development project. “The fisheries [and] the spawning grounds were destroyed” (Rudolph & McLachlan, 2013, p.1085), which disabled Indigenous people from depending on the food and income made from trapping and selling the fish that the marsh provided. It is evident that the “...colonial projects and ongoing disruption of Indigenous geographies...” (de Leeuw, 2016, p.16) impact the availability of foods from the territory. The “...degradation of preferred harvested species or sites, restrictions on access to harvesting areas, or alterations to sacred or spiritually important sites” (McCreary and Milligan, 2018, p.13) all worsen Indigenous food sovereignty. Hence, the ongoing extraction projects on traditional land create a high sense of vulnerability which leads to a disconnection to Indigenous food and food systems.

### ***Broken Treaties***

Even though there are treaties that were created after the arrival of settlers, many are not honored which affects the well-being of Indigenous communities. An agreement called the UN Declaration regarding the Rights of Indigenous Peoples that stated it “...recognizes Indigenous rights to self-government, land, equality and language, as well as basic human

rights...” (Bell & Henderson, 2006). However, Canada did not initially sign to this agreement until almost a decade later “...because of issues concerning land disputes and the declaration’s clauses about the duty to consult that could impact resource development” (Bell & Henderson, 2006). The federal government claims to care about Indigenous rights but instead gives nations false hope. In fact, a Muskoday First Nation explained that there was a negotiation of a treaty that allowed Indigenous people to care for themselves, however this was never honoured (Rudolph & McLachlan, 2013, p.1086). It is clear that Canada only cares to proceed with colonial powers that benefit the settler society. This leads to new settlement patterns making Indigenous communities unable to sustain themselves, let alone self-govern.

Furthermore, the Algonquins of Barriere Lake (ABL) “...is the site of profitable forestry, hydro-electric and tourist industries, yet the ABL have no access to the wealth derived from their lands” (Crosby & Monaghan, 2012, p. 422). Dating back to 1991, a resource co-management framework known as the Trilateral Agreement was signed but never implemented. Although the ABL maintained “...their original language, culture and traditional system of government, loss of access to food and hunting rights has contributed to the community being one of the poorest in Canada” (Crosby & Monaghan, 2012, p. 428). Indigenous communities hold a strong connection with their land and food, yet settler states continue to disrupt those relationships through colonial injustices and broken promises. As a result, there is a lack of awareness towards the food sovereignty issues and built-up frustration that arises from “...continuous interference in Indigenous internal affairs and the government’s refusal to honour signed agreements...” (Crosby & Monaghan, 2012, p. 422).

The government did promise that Indigenous communities would be “...taken care of as long as the rivers flow, the grass grows and the sun shines” (Rudolph & McLachlan, 2013, p.1086), hence the “...guarantees of food aid in times of famine in Treaty No. 6” (Daschuk, 2013). However, deprivation was caused by Canadian officials, as the necessity of food was used against Indigenous nations in order for settlers to prevail in their colonial practices. Commissioners used the treaty-making tactic of “[using] food or the denial of food to force nations into treaty negotiations all while clearing a path for the Canadian Pacific Railway...” (Preston, 2017, p.359). This was a gruesome approach of clearing traditional land for railway construction and settlement which led to a “decades-long cycle of malnutrition, suppressed immunity and sickness from tuberculosis and other diseases” (Daschuk, 2013) due to the withdrawal of food for a long time. By focusing on colonialism, it reflects how the government dishonours treaties which furthers the struggles of food injustice.

### ***Health Inequity***

By emphasizing the reality of colonialism, it brings awareness to these food sovereignty struggles that push Indigenous bodies to starvation, malnutrition and death. It is clear that the settler society dictates what Indigenous people can and cannot eat. Although the Canadian government is feeding Indigenous nations with welfare, “the Crown owes the First Nations food security” (Rudolph & McLachlan, 2013, p.1086). The lack of self-governance generates a food crisis that is heavily influenced by expensive healthy foods that cause poor nutrition and diet-related illnesses (Rudolph & McLachlan, 2013, p.1079). In fact, in Canada, there have been “reported rates of food insecurity [that] have ranged from 33.3% of off-reserve households...” (Martens et al., 2016, p.21).

A big contributor to the food-related challenges is the high prices placed on fresh food that is imported to northern communities. For example, in Saskatchewan, a member of the Misipawistik Cree Nation pays six dollars for milk or two dollars for apple juice (Rudolph & McLachlan, 2013, p.1087). These prices make it unsuitable for Indigenous communities

to live a healthy lifestyle as the cheaper option would be buying a two-litre Pepsi for ninety-nine cents (Rudolph & McLachlan, 2013, p.1087). Having cost be a major determining factor creates poor choices that lead to inadequate food and nutrition intakes. By turning away from expensive and scarce fresh food and towards unhealthy processed products, it results in diet-related diseases. For instance, many Indigenous children living by the Saskatchewan River are "...recognized as suffering from sugar addiction, diabetes, and obesity..." (Rudolph & McLachlan, 2013, p.1087).

Due to colonialism, Indigenous communities have lost the relationship with their traditional land, food and livelihood. Before settler contact, Indigenous people were living well, as they were in control of growing their food, cooking, and eating; there was no government influence. Despite the fact that reserve communities across the Prairie Provinces were supplied with agricultural training, tools, and materials by the federal government, "...80% of the 1.6 million acres of agricultural reserve land in Western Canada is now leased to non-Indigenous farmers" (Rudolph & McLachlan, 2013, p.1082). Canada is viewed as meeting treaty commitments, but in reality, there is little land given to Indigenous communities to undergo their traditional farming practices which produce a divide between their food and food systems. It is critical to emphasize Indigenous food sovereignty through colonialism in order to understand the explicit connections between land, food, and health.

### ***Solutions to Advance Decolonization***

Indigenous food sovereignty struggles are worsening from the effects of colonialism instilled through unequal laws, extraction projects and dishonoured treaties. Firstly, the main step in advancing decolonization is recognizing and accepting Canada's history of colonialism as it is still "...an on-going system and structure that negatively affects Indigenous peoples and, in turn, Canadians" (McMahon, 2017). Since many Canadians do not realize the grim reality of colonialism, it limits the support of Indigenous food sovereignty. But, by bringing awareness to this struggle, it becomes achievable to "...[address] the broken relationship between Indigenous communities and the government of Canada" (Rudolph & McLachlan, 2013, p.1091).

Since settler contact, Indigenous people have lost control of their long-term destiny as their land and resources were taken from them. Thus, it is important to decolonize Canada in order for Indigenous people to be self-determining in relation to their food and food systems. In fact, many grassroots groups fight against the Canadian government to regain Indigenous rights and food sovereignty. For example, Idle No More is a movement that acts on "... [calling] on all people to join in a peaceful revolution, to honour Indigenous sovereignty, and to protect the land and water" (IdleNoMore, n.d.). By supporting Idle No More and their show of opposition, there is a strong, collective force that pressures the Canadian government and industry to protect Indigenous land.

Seeing that the food crisis is connected to land and treaty rights, Indigenous food sovereignty is inherently political (Rudolph & McLachlan, 2013, p.1095). A Muskoday First Nation expressed that "sovereignty and nation-building is the way out of hunger and poverty for [their] people" (Rudolph & McLachlan, 2013, p.1092). Through supporting small community centres such as the Shkagamik-Kwe Health Centre in Sudbury, there can be continuous deliveries of health services to Indigenous people. With only "8% of the population [identifying] as Indigenous" (Ray et al., 2019, p.59), this centre ensures that their nation does not go extinct. The centre strives for the right to fully access "...the conditions of health, including: pride in ancestry, cultural reclamation, ...food, income, a stable environment, resources, and social justice..." (Ray et al., 2019, p.59).

Another organization called the Working Group on Indigenous Food Sovereignty (WGIFS) was founded in 2006. Its goal is to “[increase] awareness of the underlying issues, concerns and strategies impacting food security in Indigenous communities” (Indigenous Food Systems Network, 2010). However, it must be noted that “most organisations addressing northern Indigenous food security are government funded or affiliated” (Rudolph & McLachlan, 2013, p.1094) which can lead to inappropriate approaches or solutions. Canada needs to honour signed treaties, as the traditional land belongs to Indigenous nations—not to governmental bodies nor corporations. Moreover, the fight for self-determination and decolonization requires full support from not only Indigenous people but all Canadians.

Through acknowledgement of Indigenous food sovereignty struggles, policy and procedures such as Agro-ecological management can be supported. This subset of agriculture supports Indigenous food systems, rather than replacing them as it “...resists the industrial food system by placing control of food production, distribution, and consumption within local communities” (Isaac et al., 2018, p.8). This current food sovereignty health framework is important to overcome Indigenous struggles as it works to address the disconnection between their food and food systems.

### **Conclusion**

From the onset of land and settler colonialism in Canada that continues to prevail today, Indigenous people are pushed further down the social and economic hierarchies. Thus, Indigenous food sovereignty struggles are undermined as non-Indigenous agricultural issues dominate food movement discussions. However, there must be an emphasis on the reality of colonialism in order to tackle these struggles of unequal laws, extraction projects, and broken treaties. These acts of colonialism disregard Indigenous bodies as it disconnects their connection to traditional land, food, and food systems, thus degrading their health and nutritional intake. As a result, they face diet-related diseases such as sugar addiction, diabetes, and obesity. There needs to be an action of increasing acknowledgement and support for Indigenous food sovereignty and self-determination. By coming together and advancing decolonization, it will successfully allow Canada to be more inclusive, respectful, and honourable towards Indigenous nations.

### **References**

- Bell, C., & Henderson, W. B. (2006, February 7). Rights of Indigenous Peoples in Canada. Retrieved from <https://www.thecanadianencyclopedia.ca/en/article/aboriginal-rights>
- Crosby, A., & Monaghan, J. (2012). Settler governmentality in Canada and the Algonquins of Barriere Lake. *Security Dialogue*, 43(5), 421–438. doi: 10.1177/0967010612457972
- Daschuk, J. (2013, July 19). When Canada used hunger to clear the West. Retrieved from <https://www.theglobeandmail.com/opinion/when-canada-used-hunger-to-clear-the-west/article13316877/>
- Leeuw, S. D. (2016). Tender grounds: Intimate visceral violence and British Columbias colonial geographies. *Political Geography*, 52, 14–23. doi: 10.1016/j.polgeo.2015.11.010
- Gardner, M. (2013, January 04). Idle No More re-ignites social struggle across Canada. Retrieved from <https://www.marxist.ca/analysis/first-nations/836-idle-no-more-re-ignites-social-struggle-across-canada.html>



- IdleNoMore. (n.d.). Idle No More. Retrieved from <http://www.idlenomore.ca/>
- Indigenous Food Systems Network. (2010, February 12). Indigenous Food Sovereignty. Retrieved from <https://www.Indigenousfoodsystems.org/food-sovereignty>
- Indigenous Food Systems Network. (2010, February 12). About Us. Retrieved from <https://www.Indigenousfoodsystems.org/about>
- Isaac, M., Isakson, S., Dale, B., Levkoe, C., Hargreaves, S., Méndez, V., ... Ciani, A. G. (2018). Agroecology in Canada: Towards an Integration of Agroecological Practice, Movement, and Science. *Sustainability*, 10(9), 3299. doi: 10.3390/su10093299
- Martens, T., Cidro, J., Hart, A. M., McLachlan, S. (2016). Understanding Indigenous Food Sovereignty through an Indigenous Research Paradigm. *Journal of INDIGENOUS SOCIAL DEVELOPMENT*, 5(1), 18-37.
- McCreary, T., & Milligan, R. (2018). The Limits of Liberal Recognition: Racial Capitalism, Settler Colonialism, and Environmental Governance in Vancouver and Atlanta. *Antipode*. doi: 10.1111/anti.12465
- McMahon, R. (2017, July 14). Ryan McMahon's 12-step guide to decolonizing Canada | CBC Radio. Retrieved from <https://www.cbc.ca/radio/day6/episode-339-manchester-s-resilient-teens-thunder-bay-racism-conservative-party-crashers-reggaeton-and-more-1.4128253/ryan-mcmahon-s-12-step-guide-to-decolonizing-canada-1.4128258>
- Menz, K. (2013, January 2). Bill C-45 and Idle No More: Outlining the connections. Retrieved from <https://thesheaf.com/2013/01/02/bill-c-45-and-idle-no-more-outlining-the-connections/>
- Preston, J. (2017). Racial extractivism and white settler colonialism: An examination of the Canadian Tar Sands mega-projects. *Cultural Studies*, 31(2-3), 353-375. doi:10.1080/09502386.2017.1303432
- Ray, L., Burnett, K., Cameron, A., Joseph, S., Leblanc, J., Parker, B., ... Sergerie, C. (2019). Examining Indigenous food sovereignty as a conceptual framework for health in two urban communities in Northern Ontario, Canada. *Global Health Promotion*, 26(3\_ suppl), 54-63. doi:10.1177/1757975919831639
- Rudolph, K. R., & McLachlan, S. M. (2013). Seeking Indigenous food sovereignty: Origins of and responses to the food crisis in northern Manitoba, Canada. *Local Environment*, 18(9), 1079-1098. doi:10.1080/13549839.2012.754741

# Investigating White Collar Crime Through an Interdisciplinary Lens

*Dania Ahmed is a second-year Ethics, Society & Law, Sociology, and Women & Gender Studies student.*

White-collar crime was first introduced by Edwin Sutherland (1939) to challenge traditional theoretical frameworks that perceived criminality as a product of poverty and social disorganization (Ahmed 2020). Sutherland's goal was to prove that even those with respectability and high social status are capable of committing crime and sought to expand the scope of deviance through an integration and analysis of white-collar crime as a legitimate form of criminality. In this framework, corporate crime equates to that of professional thievery. As capitalism prevails as the main mode of economics in modern day society, Sutherland's work on white-collar crime becomes increasingly relevant. In order to accurately address the manifold layers to this issue it is essential to evaluate the motivations of such crimes which sustain and ensure its ability to thrive through psychological and sociological perspectives. As such, this paper explores the motivations behind white-collar crime through an interdisciplinary lens.

White-collar crime has been a prevalent form of deviance in capitalist societies and is sustained through psycho-social methods such as neutralization techniques, sensation seeking, and irrational decision making. This research paper analyzes the aforementioned motivations as they relate on a psychological level and collective societal level. The goal is to address the motivations behind complicated offences and develop strong interlinking dimensions through which the different layers of complexity underlying the crime may be analytically utilized in assisting prevention efforts. Moreover, the research paper will support its claims using scholarly articles that have extensively researched the psychological or sociological aspect of neutralization techniques, sensation seeking, and irrational decision-making in the specific context of white-collar crime. The paper will also include an examination of a case study in which the motivations of Bernie Madoff – the notorious Ponzi scheme fraudster and con man of the 21st century – are examined (Ahmed 2020). This case study will evaluate qualitative interviews between Harvard Business School Professor and Mr. Madoff, which probes the incentives behind Madoff's fraudulent acts. The insights gained from Madoff's interview provide a psychological perspective on his own personal vested interests in financial crime, and a sociological perspective on how business culture is a sociological prompter of deviance.

## ***Argument: Neutralization Techniques***

A multitude of motivators incentivize white collar offenders. These factors are

interconnected, and interdisciplinary, linked to both psychology and sociology. Neutralization techniques are one such example that span the two disciplines and can be useful in understanding both the motivations of financial crime and the rationale behind repeat offenses. As proposed by Sykes and Matza (1957), techniques of neutralization are used as attempts to justify deviant or immoral actions (Anderson 2017). Individuals may invoke neutralizing techniques in different ways, such as by denying injury, denying the victim, and appealing to higher loyalties (Anderson 2017). These are learned behaviours and excuses individuals use to suppress normative values while rationalizing previous or future delinquent activities to promote a positive sense of self (Stadler and Benson 2012).

There is ample evidence to suggest that white-collar criminals avoid the label and self-perception of being criminal through these deflection tactics. Furthermore, more commonly than other types of criminals, white-collar criminals possess the ability to minimize the guilt associated with engagement in criminal activity (Stadler and Benson 2012). Through the process of denying guilt and circumventing the label of ‘criminal’, white-collar offenders enjoy a clear conscience. as a product of their denial of criminality (Stadler and Benson 2012). This psychological reframing of behaviour that Stadler and Benson (2012) contend allows for white-collar recidivism and further fictionalizes the prospect of being caught and punished.

Through their study conducted with 369 male federal prison inmates, the researchers were able to conclude that although both white-collar and street criminals employ neutralization techniques as a mode of self-absolution, white-collar offenders were far more likely to deny the seriousness of their offenses. White-collar offenders were also more likely to regard themselves as undeserving of a criminal sentence, and distinctively hold their identity and personal characteristics apart from their deviant offence (Stadler and Benson 2012). This research is significant on a psychological level because it sheds light on how the free flowing linguistic tools of neutralization techniques allow for white-collar criminals to shift accountability for their actions and take on a mindset that falsifies reality and leads them to believe there is no true victim in their actions. On a sociological level, considering neutralization techniques to be a collective motivator for white-collar crime is important because it provides further direction for criminal justice policy and theory.

Stadler and Benson (2012) emphasize that the implications of their study extend beyond the etiology of white-collar crime and are directly applicable to the assessment, management, and treatment of white-collar offenders in public policy. Well-documented and accurate knowledge of how white-collar convicts utilize neutralization techniques to justify, excuse, and account for their engagement in criminal activity can be a useful instrument as the focus of society and the criminal justice system shifts from simply punishing white-collar offenders to preventing white-collar crimes in the first place (Stadler and Benson 2012). A thorough understanding of how white-collar offenders use neutralization tactics can contribute to the development of “better risk prediction, prevention, and treatment models aimed at identifying and removing neutralizations” (Stadler and Benson 2012:15). For example, this can take the form of modifying offender actuarial assessments in order to incorporate additional neutralization measures that would allow for accurate prognostications of offender risk and need (Stadler and Benson 2012). Therefore, it is through analysis of neutralization techniques employed on the individual and societal levels that will facilitate a deeper understanding of the motivations behind white-collar crime and serve as the basis for prevention.

### ***Argument: Sensation Seeking***

Sensation seeking is defined as, “the seeking of varied, novel, complex, and intense sensations and experiences, and the willingness to take physical, social, legal, and financial

risks for the sake of such experience” (Zuckerman 1994:27). This psychological trait has been empirically found to be associated with antisocial behaviour (Craig and Piquero 2016). Craig and Piquero (2016) sought to fill the gap in academic literature and apply this character trait to individuals who engage in acts such as embezzlement or fraud and investigate the correlation between sensation seeking and low self-control. Sensation seeking is a biosocial theory that is broadly used in the field of psychological research of risk-taking behaviours in relation to crime and deviance and its scope can be expanded in application to sociological and criminological areas of study as well (Craig and Piquero 2016).

Sensation seeking stresses that individuals seek intense, complex, and new experiences that hold the possibility of legal and financial ramifications (Craig and Piquero 2016). For example, a businessman who adds fictitious charges to his expense account in order to generate extra money simply for the adrenaline rush and to experiment how and if he can escape unscathed from such illegalities (Craig and Piquero 2016). Craig and Piquero (2016) found that sensation seeking is a central motivator behind white-collar crime and that unsocialized sensation seeking and a low sense of self control are all individual characteristics that amplify an individual’s inclinations to engage in fraudulent activities (Craig and Piquero 2016).

This is an important sociological and psychological finding because it demonstrates how individual personality traits have the ability to manifest through deviant behaviours such as white-collar crime. On a psychological level, the trait of sensation seeking is prevalent in white-collar offenders and can account for many convicts’ proclivity towards criminal acts. As sensation seekers, certain personal motivations come into play when committing white-collar offences and criminals re-offend to satisfy the persistent urge of sensation seeking (Craig and Piquero 2016). This means sensation seeking can be identified and regulated at the individual level in a safe and legal manner in order to ensure that prospective white-collar criminals are not drawn to engage in criminal activity and learn effective strategies to help combat such inclinations (Craig and Piquero 2016).

Through a sociological lens, this motivation can also be analyzed through differential association theory as proposed by Edwin Sutherland. In the world of finance, if a sensation seeking individual is placed in a work environment that encourages or is complacent with white-collar offences, a culture of white-collar crime festers. Differential association contends that deviant behaviour is learned in association with those who define such criminal behaviour as being favourable, and in a financial workplace that promotes such illegal behaviour as “part of the game”, an external push encourages sensation seeking individuals to engage in such deeds and give in to their thirst for adrenaline (Tatham 2020:16). Thus, a social culture that condones white-collar crime or deviance becomes a socialization agent of sensation seeking characteristics in individuals, which then begets an environment conducive to committing white-collar crime.

### ***Argument: Irrational Decision Making***

In order to understand the motivations of white-collar criminals, it is imperative that their decision-making processes be taken into account. The rational choice framework relies on classical school assumptions of human nature as hedonistic and focuses on the rewards and risks associated with criminal behaviour (Piquero 2011). Fundamentally, rational choice assumes that “crime is committed after reasoned actors weigh the costs associated with the potential act against the potential benefits or gains that will be derived from the act” (Piquero 2011:13). In relation to white-collar crime, there has been substantial research done to support the notion that the individual actor in financially oriented circumstances must weigh the costs and benefits of their actions and eventually conclude that white-collar offending is the most



advantageous option available to them (Piquero 2011).

Piquero (2011) investigates how the fear of falling hypothesis operates within a rational choice framework as a strong motivator to commit white-collar crime. The fear of falling hypothesis is the excessive fear of losing what one has worked hard to obtain to the point that it motivates them to turn to illegal avenues to sustain their status, prestige, or money. This hypothesis asserts that white-collar crime may not be motivated out of greed, but rather from individual perceptions of economic or social security (Piquero 2011). The findings of this study indicated that the fear of falling effect operated indirectly through the perceptual rational choice framework, and that this effect heightened respondents' perceptions of sanctions or costs of their actions (Piquero 2011). Sensitivity to social status and economic standing spiked irrational decision-making, prompted by the fear of losing what one had worked hard to achieve (Piquero 2011).

This is an important psychological and sociological finding because it focuses on how an inherently psychological choice of working through relevant situational factors and abiding by personal decision-making processes can become a socially influenced and motivated resolution (Piquero 2011). On a micro scale, unique conditions surround every white-collar criminal's decision to offend; the fear of falling hypothesis shows that the resolve to resort to illegal means in order to retain status and income is often socially motivated (Piquero 2011). This is because reasoned actors do not wish to see a decline in their socioeconomic status and perceive illegal activity to be their only rational option. This is largely influenced by self-perception, as can be explained through Charles Cooley's looking glass self theory.

Cooley proposed that individuals imagine and react to themselves in the way they believe they appear to others and develop a sense of self through the judgements of others (Tatham 2020:34). This decision to commit financial crime, comes from imagining oneself as they appear in the eyes of others – and thus judgement often leads them to engage with criminal activity. The social stigma associated with loss of social or economic status is a central part of the fear of falling hypothesis and a main motivator of white-collar crime (Piquero 2011). It is through the interlinking of psychological and sociological perspectives that the fuller picture behind irrational decision making as a motivator for white-collar crime can be understood.

### ***Case Study: Bernie Madoff***

Bernard Lawrence Madoff is a renowned Ponzi scheme fraudster who is often cited as the mastermind behind the largest financial scandal the US has ever faced. Madoff swindled his investors out of \$65 billion and was sentenced to 150 years in a federal penitentiary on 11 counts of theft, money laundering, fraud, and perjury (Nobel 2016). Harvard Professor of Business Administration, Eugene Soltes, interviewed Madoff extensively in order to solicit information on what motivated him to orchestrate such a grand financial crime. Through these interviews Madoff revealed tendencies to invoke neutralization techniques, sensation seeking personality traits, and irrational decision making. Bernie Madoff stated that he “rationalized that what I was doing was OK, that it wasn't going to hurt anybody” or using the neutralization technique of denying the victim, where the perpetrator argues there was no real victim and hence no true damage was done (Nobel 2016).

He further states that the cutthroat business culture demanded him to take more risks and push himself outside of his comfort zone, so much so that spontaneity became a staple requirement of his job (Nobel 2016). The adrenaline rush he experienced from being able to creatively account his way out of investor suspicion sustained his operation for so long (Nobel 2016). Moreover, Madoff claims he was a novice when he began his ventures into the business world, with no such social or cultural capital to assist him. He claims he did not “come

from money” nor did he come from a well-connected family – both of which were assets his colleagues enjoyed the privilege of (Nobel 2016). Thus, having generated tremendous amounts of wealth from his own work ethic, Madoff essentially experienced the fear of falling effect: he was more incentivized to keep up his lavish lifestyle that he insisted he built with his own two hands, rather than obtain the fortune in a legal manner (Nobel 2016).

Thus, the case study of Madoff shows that the motivations behind white-collar crime can generally be attributed to the three psycho-social methods of neutralization techniques, sensation seeking, and irrational decision-making – which is an extension of the fear of falling hypothesis.

### ***Discussion***

The aforementioned motivations behind white-collar crime have several implications for society and expand upon current understandings of crime and deviance comprehensively. Primarily, the most significant contribution these assertions make is in terms of prevention. These concepts possess the ability to make considerable strides in advancing current social support programs for both rehabilitating white-collar criminals and preventing white-collar offences in the first place. The empirical evidence provided by these studies offer a solid foundation upon which programs can expand their functions to attend to adolescents’ self-control mechanisms. As low self-control and impulsivity has been a marker of individualistic white-collar crime, it is imperative to address these tendencies early on. (Craig and Piquero 2016). Furthermore, these findings provide a framework through which employers can screen current and prospective employees for these specific tendencies and gear specialized training towards those employees who require such assistance in order to prevent white-collar offenses in the workplace (Alalehto and Larsson 2009).

With regard to neutralization techniques in particular, cognitive treatment interventions centered around correcting antisocial attitudes or extreme denial of accountability traits can be tailored to offender needs, and be useful in delinquent social support programs as well (Stadler and Benson 2012). The analysis of incentives that prompt white-collar crime also contributes to current theoretical frameworks of crime and deviance, by broadening the applicability of theories such as Cooley’s looking glass self and Sutherland’s differential association theory across historical and societal contexts. In other words, by applying these theories to current white-collar crime, one can gain valuable, cross-disciplinary insights about contemporary society. Moreover, this research allows criminologists, sociologists, and psychologists to synthesize their perspectives on what motivates crime and how certain personalities and social patterns distinguish white-collar criminals from street offenders.

### ***Conclusion***

White-collar crime is the product of various motivators, most notably neutralization techniques, sensation seeking attributes, and irrational decision making due to the fear of falling. These interdisciplinary theories are invaluable to gaining a more comprehensive view of the motivations behind the criminal activities of the infamous white-collar criminal, Bernard Madoff. The resulting insights can serve as a template upon which prevention techniques can be formulated. Findings from these studies illustrate a general pattern in the motives behind crime and offer a practical foundation for policymakers to refer to when conceptualizing methods to prevent and rehabilitate white-collar criminals. Therefore, as white-collar crime continues to pose a significant social and economic threat, it is important that the motives behind such offences are critically evaluated from a cross-disciplinary perspective in efforts to decrease white-collar crime rates.

## References

- Ahmed, 2020. *Investigating White-Collar Crime Through an Interdisciplinary Lens Outline*. Unpublished paper submitted to SOC 212, University of Toronto.
- Alalehto, Tage and Daniel Larsson. 2009. "The Roots of Modern White-Collar Crime: Does the Modern Form of White-Collar Crime have its Foundation in the Transition from a Society Dominated by Agriculture to One Dominated by Industry?" *Critical Criminology* 17(3):183-193.
- Anderson, Leon. 2017. "Symbolic Interactionist/Social Constructionist Perspective." Pp. 81-113 in *Social Constructions and Blurred Boundaries*. Berkeley, CA: University of California Press.
- Craig, Jessica M. and Nicole L. Piquero. 2016. "Sensational Offending: An Application of Sensation Seeking to White-Collar Crime and Conventional Crimes." *Crime & Delinquency* 63(11):1363-1382.
- Piquero, Nicole L. 2011. "The Only Thing We Have to Fear Is Fear Itself: Investigating the Relationship Between Fear of Falling and White-Collar Crime." *Crime & Delinquency* 58(3):362-379.
- Stadler, William A. and Michael L. Benson. 2012. "Revising the Guilty Mind: The Neutralization of White-Collar Crime." *Criminal Justice Review* 37(4): 494-511.
- Tatham, Christopher. 2020. "Theory III." SOC212 Sociology of Crime and Deviance. May 11.
- Zuckerman, Marvin. 1994. *Behavioural Expressions and Biosocial Bases of Sensation Seeking*. Cambridge, UK: Cambridge University Press.



# Can E-Learning Succeed in Ontario?

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Before the COVID-19 pandemic shuttered many of the world's schools and campuses, Ontario was already dealing with complications with its educational system. On March 15<sup>th</sup>, 2019, the province's Conservative government announced changes to education with the intent to modernize classrooms (Ministry of Education). The plan was two-fold: beginning in 2020, students would be required to earn four e-learning credits, and in 2021, the province should be finished rolling out broadband access to all Ontario schools (Ministry of Education). After the announcement was made there was pressure from the OSSTF (Ontario Secondary School Teachers' Federation) to remove the e-learning credits entirely—and as of December 2019, they reduced the requirement to two credits (Rocca). However, existing research on online education/e-learning shows that the odds are stacked against this requirement being successfully implemented. If the Ontario government wants to ensure that their e-learning requirement can be implemented in the future of Ontario's education system, they must complete the necessary steps in order to give it the best chance of succeeding. These steps include clearly outlining the necessity for such a change in the graduation requirements, ensuring the proper training for current and future educators, and addressing the accessibility concerns about access to technology (the 'digital divide') in the province.

## *Need for More Research*

While the Ontario government made several announcements regarding these curriculum changes, they failed to substantially demonstrate their necessity. People for Education, a Canadian independent and nonpartisan organization with a focus on public education, published a review on the state of e-learning in North America and pointed out how, "Ontario has not articulated the purpose of the online learning policy decision," while other regions with this policy (i.e., five states in the United States) have made clear statements about its purpose and goals (Ontario e-learning plan unique in North America, 1). Ontario's Education Minister, Stephen Lecce, claims the policy will equip students with "skills and technological fluency" they need in the labour market (Alphonso), and in another article claimed the changes would, "[help] Ontario become a "global leader" of "modern and digital education" (Rocca). There is no discussion on how these new course curriculums will be phased in, nor how they will assist in giving students new technological skills for the workplace. As the current e-learning environment stands in Ontario, online courses are regular classes but just online.

There are many areas of e-learning that need to be more closely researched before any changes should be made. A literature review conducted on the outcome for e-learning over the next 10 years agrees that online learning is the future; it outlines several areas that are lacking in-depth research: developing e-learning to promote 21<sup>st</sup> century skills, "bridging the gap between

school's curriculum and society's real-life situations", shifting to "learning-centered learning" in digital classrooms, collecting evidence of improvement and successes when it comes to teachers' decision-making within the online classroom context, how to successfully assess the development of 21<sup>st</sup>-century skills, and teacher development to successfully implement the curriculums (Siu Cheung Kong et al, 73-75). Without enough adequate research, there lies a large chance that any curriculum changes will not be successful.

The same literature review also addresses how governments (at either a regional or national level) can successfully phase in any changes. It advises that governments should announce such policy changes by emphasizing 21<sup>st</sup> century learning skills, and then provide schools with incentives that promote the smooth adoption of these changes (Siu Cheung Kong et al, 75). However, the Ontario government has not tried to integrate their policy smoothly with the current curriculum; the backlash from the various teaching unions and school boards shows that this policy was not one they were consulted on or encouraged to adopt. Policy changes of this magnitude cannot be forced on the province's education system.

Despite the Siu Cheung Kong et al. literature review claiming there is not enough information on online education yet, the Ontario government claims they have their own research. Education Minister Lecce states that their research has shown students can succeed in online learning, given that they have the right support systems (Alphonso). This claim is countered by Dr. Farhadi, who has conducted research on education inequality and e-learning within the TDSB. She contends that, "We don't have any data to show success, when all public secondary students are forced to take an online course, especially at a time when young people require the in-school support" (Alphonso). Dr. Farhadi's point brings to light that of the high schools in Ontario with students enrolled in online courses, only 5% of their student bodies are in e-learning courses (Ontario E-Learning Plan, 3). The Ontario government has not released any of its own findings in regard to their claims of the success of online education, which only emphasizes the need for more research and transparency.

There was difficulty in finding articles on online education/e-learning in high schools. Most studies so far have focused on Bring Your Own Device (BYOD) policies and its impact on students (Corey; Mulet et al; Sana et al), looking at how Canada leaves these types of educational decisions up to each province (Anderson, McGreal; Borokhovsk et al), or how game-based learning could be implemented in elementary schools (Huang, et al; Pellas, et al). The Ontario government's plan requiring several online course credits for high school graduation is unprecedented and not fully researched. There is no telling what sort of short and long-term impacts this change will have on students and the education system as a whole. If they do have separate research, the Ministry of Education should release their findings for analysis by experts in the field. Not only could it help with current discussions within the province, but it could also help inform the public on a new kind of education. In order to strengthen their own arguments about why this policy is necessary for students, the government should be more transparent about their own sources.

### ***The Need for More Specialized Education for Teacher Training***

The new policy of online credits does not fully take the current and future secondary school teachers into account, which could result in poor experiences for the students. As mentioned previously, out of all the Ontario schools that have students taking online courses, only 5% of the student body is actually enrolled (Ontario E-Learning Plan, 3). This implies that few teachers are currently equipped to teach these online classes, which may end up having at least 35 students each (Alfonso). A study done on an online summer American History Course in the United States confirmed a previous finding that just because a teacher

excels in a physical classroom setting, does not mean they will make an effective online teacher (Journell, 77). In OISE's Master of Teaching program, there is one required course on 'integrating technology into the classroom' for junior/intermediate and intermediate/senior teachers (About Our Program, under the hyperlink 'courses'). As it stands currently, there is a strong chance that Ontario teachers may not be able to successfully take full advantage of the online classroom/learning environment. This will leave students at a loss and may hinder their educational experience. The province's current teachers are currently equipped to handle the integration of technology into an in-person classroom, and not using technology as the mode of instruction/learning.

The government has made no comments on the training for current teachers, or how future teachers will be able to seamlessly work using both teaching mediums. Journell's research shows that being able to effectively utilize online classrooms requires more than a teacher just being able to upload documents and start discussion boards. The Siu Cheung Kong et al literature review states in its policy recommendations that governments should, "therefore support teacher training institutions and K-12 schools to provide pre-service teachers and in-service teachers, respectively, with sustainable and scalable teacher development for the continuous transformation and implementation of teaching practice desirable for digital classrooms" (76). In order to make sure that this policy has the best chance to benefit Ontario students, the government must announce a clear plan that outlines how they plan to go through with its services for its teachers. This emphasis will benefit students and teachers in the long run, and hopefully rebuild trust between the Ministry of Education and its educators.

### ***The Need to Address Accessibility Concerns***

Reliable internet access to is essential when attempting to implement online education as a graduation requirement. As of March 15<sup>th</sup>, 2019, the government has said that broadband for all schools in the province will be rolled out by the 2021-2022 school year—an entire year after the e-learning credits will come into effect (Ministry of Education). Having an online requirement come into effect before every student in the province has access to reliable wireless internet at school potentially puts rural students a year behind their urban peers. Moreover, this timeline does not account for any technical issues that may arise once every school has this access in place—the province will have to deal with technical issues from the e-learning website, as well as connectivity problems faced by schools throughout the province. The literature review on policy implications for e-learning said that, "acquisition of stable Internet connectivity both on campus and at home" is another area that will ensure students can excel in e-learning (Siu Cheung Kong et al, 75). As mentioned in previous sections, without this stability and assurance, there is a real risk of the requirement not being successful for students who do not have the privilege of broadband access at their school or home when the requirement starts.

BYOD policies coupled with broadband access in schools is a good first step, as many schools already have these policies in place, but it does not address socio-economic divides within the province. People for Education found that in 2019, 74% of high schools already encouraged BYOD in some form (Kapoor, 4). However, if a student does not have a device to bring to school or internet access at home, they will be substantially behind their peers. A study conducted on select middle schools in Florida found that there was a digital divide when it came to socio-economic status (SES)—families with lower SES, as well as minority families, had "less access to ICT [Information Computer Technology] in their homes." (Ritzraupt et al, 300-301). This is an issue at home, too: A 2018 report from Ontario's Auditor General found that students do not have equal access to computers and technology (Kapoor, 5). Some Ontario schools must fundraise for devices for students, which is sustainably harder for schools in low-income neighbourhoods; in some cases, principals purchase devices for their students in order

to help lessen the burden placed on families (Kapoor, 5). The government must somehow find a way to bridge this gap and ensure their students have a high chance at being successful in their online classes.

A solution to this problem could be public and school libraries. However, if students work part-time in the evenings or on the weekends, this cuts into their available time to access online resources through their school. Some principals have reported being unable to keep libraries opened and staffed all day long (Kapoor, 8), which poses a larger problem for smaller, more rural communities. If the e-learning requirement is to go through, the government must keep research like this in mind in order to make sure all students will be able to complete their courses.

Until the Government of Ontario is transparent with their reasoning for the policy change, the research behind their claims about e-learning, have a plan on how current and future teachers will be trained on handling e-learning courses, secures broadband access for all schools in Ontario, and presents a plan to address the 'digital divide' in Ontario schools, there is a substantial risk that this attempt at modernizing classrooms will fail. The government's research on this area may be promising, but without showing the public this research in their announcements, it draws concern about the validity of the results. A teacher's union requested, "research [to be] conducted to determine the effectiveness of e-learning before it is implemented as a mandatory requirement," which illustrates the divide between the province and its educators, as well as the lack of transparency on the side of the Ontario Government (Rocca). Even if these studies mean a delay in the policy implementation for a couple years, there will be a benefit no matter the outcome: if e-learning turns out to be a great policy, teachers will have had enough time to train properly for it; if the studies show otherwise, then perhaps a better method for infusing technology into classrooms will be found. If this policy is implemented half-heartedly as it is seemingly projected to do so, Ontario may end up becoming a warning to other provinces to steer clear of e-learning requirements for secondary schools.

## References

- "About Our Program." *Ontario Institute for Studies in Education of the University of Toronto*, [https://www.oise.utoronto.ca/mt/About\\_Our\\_Program.html](https://www.oise.utoronto.ca/mt/About_Our_Program.html).
- "Education That Works for You - Modernizing Classrooms." *Government of Ontario*, 15 Mar. 2019, <https://news.ontario.ca/edu/en/2019/03/education-that-works-for-you-2.html>.
- "Ontario e-learning plan unique in North America." *People for Education*, 9 July 2019, <https://peopleforeducation.ca/our-work/ontario-e-learning-plan-unique-in-north-america/>.
- Adhikari, Janak, et al. "Evolving Digital Divides in Information Literacy and Learning Outcomes: A BYOD Journey in a Secondary School." *The International Journal of Information and Learning Technology*, vol. 34, no. 4, 2017, pp. 290-306. *ProQuest*, <http://myaccess.library.utoronto.ca/login?url=https://search-proquest-com.myaccess.library.utoronto.ca/docview/1923723741?accountid=14771>.
- Alphonso, Caroline. "Ontario Reducing Online Learning Requirement for High Schoolers from Four Courses to Two." *The Globe and Mail*, 21 Nov. 2019, <https://www.theglobeandmail.com/canada/education/article-ontario-reducing-online-learning-requirement-for-high-schoolers-from/>.
- Borokhovski, Eugene, et al. "An Extended Systematic Review of Canadian Policy Documents on e-Learning: What We're Doing and Not Doing." *Canadian Journal of Learning and Technology*, vol. 37, no. 3, Fall 2011, pp. 1-30. <https://eric.ed.gov/?id=EJ960791>
- Corey, Lesley. "A Case Study of iPad Implementation in One Rural Elementary



- School.” *Journal of Educational Technology Systems*, vol. 48, no. 2, Dec 2019, pp. 305–316, doi:10.1177/0047239519862999.
- DeClerq, Katherine. “What You Need to Know about the One-Day Ontario Teacher Strike.” *CTV News*, 3 Dec 2019, <https://toronto.ctvnews.ca/what-you-need-to-know-about-the-one-day-ontario-s-teacher-strike-1.4713520>.
- Huang, Yueh-Min, et al. “The Comparative Study for Cloud-Game-Based Learning from Primary and Secondary School Education Between Taiwan and America.” *Advanced Technologies, Embedded and Multimedia for Human-centric Computing*. Springer Netherlands, 2014, pp 157 – 164. <https://books.scholarsportal.info/en/read?id=/ebooks/ebooks3/springer/2014-02-13/1/9789400772625>
- Journell, Wayne. “Perceptions of e-learning in Secondary Education: A Viable Alternative to Classroom Instruction Or a Way to Bypass Engaged Learning?” *Educational Media International*, vol. 47, no. 1, 2010, pp. 69-81. [https://journals-scholarsportal-info.myaccess.library.utoronto.ca/details/09523987/v47i0001/69\\_poeiseawtbel.xml](https://journals-scholarsportal-info.myaccess.library.utoronto.ca/details/09523987/v47i0001/69_poeiseawtbel.xml)
- Kapoor, Aakriti. “Connecting to Success: Technology in Ontario Schools.” *People for Education*. 2019. Toronto, ON: People for Education.
- McGreal, Rory, and Anderson, Terry. “E-Learning in Canada.” *International Journal of Distance Education Technologies*, vol. 5, no. 1, 2007, pp. 1-6. ProQuest, <http://myaccess.library.utoronto.ca/login?url=https://search-proquest-com.myaccess.library.utoronto.ca/docview/201697491?accountid=14771>, doi: 10.4018
- Ministry of Education. “Education that Works for You - Modernizing Classrooms.” *Ministry of Education, Ontario*. 15 Mar 2019. <https://news.ontario.ca/edu/en/2019/03/education-that-works-for-you-2.html>.
- Mulet, Julie, et al. “A Critical Literature Review of Perceptions of Tablets for Learning in Primary and Secondary Schools.” *Educational Psychology Review*, vol. 31, no. 3, pp 631-662. <https://link-springer-com.myaccess.library.utoronto.ca/article/10.1007%2Fs10648-019-09478-0>
- Pellas, Nikolaos. “Augmenting the learning experience in primary and secondary school education: a systematic review of recent trends in augmented reality game-based learning.” *Virtual Reality*, vol. 23, no. 4, pp 329 – 346. <https://doi.org/10.1007/s10055-018-0347-2>
- Ritzhaupt, Albert D, et al. “Differences in Student Information and Communication Technology Literacy Based on Socio-Economic Status, Ethnicity, and Gender: Evidence of a Digital Divide in Florida Schools.” *Journal of Research on Technology in Education*, vol. 45, no. 4, pp. 291-307. *Eric*. <https://eric.ed.gov/?id=EJ1010656>
- Rocca, Ryan. “Key Contract Issues as Tensions Increase between Ontario Public High School Teachers’ Union, Government.” *Global News*, 29 Nov. 2019, <https://globalnews.ca/news/6234532/ontario-government-osstf-contract-issues/>.
- Sana, Faria. “Laptop multitasking hinders classroom learning for both users and nearby peers.” *Computers & Education*, vol. 62, March 2013, pp 24-31. <https://doi.org/10.1016/j.compedu.2012.10.003>
- Siu Cheung Kong, et al. “E-Learning in School Education in the Coming 10 Years for Developing 21st Century Skills: Critical Research Issues and Policy Implications.” *Journal of Educational Technology & Society*, vol. 17, no. 1, 2014, pp. 70–78. *JSTOR*, [www.jstor.org/stable/jeductechsoci.17.1.70](http://www.jstor.org/stable/jeductechsoci.17.1.70).
- U.S. Department of Education. *Understanding the Implications of Online Learning for Educational Productivity*. Washington: Office of Educational Technology, 2012. Web. Accessed 2 Nov 2019.



# The Last Great Cause: Reflections on the International Legacy of the Spanish Civil War

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In 1946, Herbert Matthews, an American journalist who covered the 1936-39 Spanish Civil War for *The New York Times*, made a statement more fitting for a man on his deathbed than a 46-year old with half his life before him: “I know,” he declared, “as surely as I know anything in this world, that nothing so wonderful will ever happen to me again as those two and a half years I spent in Spain”.<sup>1</sup> His bold words were echoed by Martha Gellhorn, another American journalist, who admitted that in all the twentieth-century wars she had covered, “I believed in the cause of the Spanish Republic as I believed in nothing before or since”.<sup>2</sup> Even non-participants, such as the writer Albert Camus, claimed to have “Spain in our hearts” since, for people of his generation throughout the world, it marked a “personal tragedy”.<sup>3</sup> Filling books upon books, testaments range from immediate reactions to decades-later reflections, and vary both socially and geographically, from labourers in Britain to intellectuals in France, Central Europe, and even New Zealand. On a discursive level, the Spanish Civil War has earned its legacy as “the last great cause” of European politics.<sup>4</sup>

But this romantic legacy raises one pertinent question: *How?* How was the localized and national agenda of the Spanish Republic, at bottom a mere belligerent in a *civil* war, transformed into an international representation of the ideological struggle between *Democracy* and *Fascism*? This paper contends that foreign journalists and intellectuals played the key role in enabling Republican nationalism to order international relations. By forging intimate connections with the people and ideals of Republican Spain through experiences analogous to the “pilgrimages” discussed in Benedict Anderson’s *Imagined Communities*, these international correspondents became Madrid’s first converts and agents, thereafter exporting the cause to its second and third international targets—foreign public opinion and foreign governments. Beginning with a review of the Civil War’s historiography and Anderson’s analytical framework, this paper will show how these successive international spheres reinforced and multiplied the Republican cause, guided by

1. Herbert Matthews, *The Education of a Correspondent* (New York: Harcourt, Brace and Company, 1946), 67-68.

2. Martha Gellhorn, “Memory,” *London Review of Books*, December 12, 1996, p.3

3. Paul Preston, *We Saw Spain Die: Foreign Correspondents in the Spanish Civil War* (London: Constable, 2008), 3.

4. This term became popular amongst the European left of the 1960s. See Stanley Weintraub, *The Last Great Cause, The Intellectuals and the Spanish Civil War* (New York: Weybright and Talley, 1968).



the ultimate aim of changing the dominant status quo of the 1930s—the Western democracies’ non-intervention policy towards Nazi Germany and Fascist Italy.

George Orwell’s remark that “everyone who writes of the Spanish war writes as a partisan” certainly applies to historians.<sup>5</sup> As Western participation in the conflict - whether as journalists, tourists, or military volunteers - generally favored the Republican side, the most widely accepted scholarship of the war has consistently been produced by, and in favour of, the war’s losers - despite the Franco regime’s efforts to censor postwar scholarship by Spanish historians to appear more favourable.<sup>6</sup>

Nonetheless, divisions do exist among the Republicans. For example, within the pro-Republican camp, most primary and secondary sources praise the efficacy of the centralizing and counterrevolutionary policy of the Communists and consider the radicalism of the Anarchists, Left Socialists, and Partido Obrero de Unificación Marxista (POUM) ill-advised.<sup>7</sup> However, Orwell’s *Homage to Catalonia*, the most famous memoir to come out of the war, championed the POUM and sharply criticized the Communists’ liquidation of the party in 1937;<sup>8</sup> Burnett Bolloten, with his ground-breaking secondary study *Revolution and Counterrevolution*, concurs.<sup>9</sup> As to the sub-literature on the international press, contemporary historians generally commend the British, French and American journalists for their heroism and integrity,<sup>10</sup> while revisionist historians claim that their reporting often veered into propaganda, either subconsciously or by design.<sup>11</sup> As the factual veracity of their dispatches and moral justifiability of their partisanship is beyond the scope of this paper, the focus will be on *why* that partisanship came about—a question that brings us to Anderson’s theories of identity formation.

Throughout his work, Anderson continually returns to the concept of “pilgrimages” as the breeding ground for modern nationalisms.<sup>12</sup> Anderson compares the first nationalists in America and Asia to religious pilgrims in antiquity: who, despite being of diverse ethnicities and origins, affirmed their common identity in the journey to the central city of their worship.<sup>13</sup> He notes that colonial functionaries developed a similar sense of camaraderie by climbing through the bureaucratic system.<sup>14</sup> Motivated by the common aim of reaching the capital, they experienced a “consciousness of connectedness” when their paths crossed, and thus came to see each other as “travelling-companions” that differed in ethno-linguistic or geographical origin, but converged in ambition and destination.<sup>15</sup> This brotherhood, both spontaneously arising and structurally conditioned, would be reproduced amongst the foreign journalists of the Spanish Republic.

However, spontaneous agency was circumscribed by structural conditions. The Republic’s infrastructure—both material and ideological—emerged from the disadvantageous position it occupied vis-à-vis the Nationalists from the war’s outset. Consequently, journalistic operations adjusted around this infrastructure, not the other way around. Although both belligerents were coalitions of various left-wing or right-wing elements, Franco’s side was united by historical ties—

5. George Orwell, *The Complete Works of George Orwell*, ed. Peter Davison (London: Secker & Warburg, 1998), vol. 11.

6. Hugo García, *The Truth About Spain! Mobilizing British Public Opinion, 1936-39* (Brighton: Sussex Academic Press, 2010), 1-2; Burnett Bolloten, *The Spanish Civil War: Revolution and Counterrevolution* (Chapel Hill: University of North Carolina Press, 2015), Introduction to the 2015 Edition, xl-xli; Antony Beevor, *The Battle for Spain: The Spanish Civil War, 1936-1939* (London: Weidenfeld & Nicolson, 2006), 239.

7. See Henry Buckley, *The Life and Death of the Spanish Republic: A Witness to the Spanish Civil War* (London: Hamish Hamilton, 1940); Herbert Matthews, *Half of Spain Died: A Reappraisal of the Spanish Civil War* (New York: Scribner, 1973); Louis Fischer, *Men and Politics: An Autobiography* (New York: Duell, Sloan and Pearce, 1941); Arthur Koestler, *Spanish Testament* (London: V. Gollancz, 1937).

8. George Orwell, *Homage to Catalonia* (London: Secker & Warburg, 1938), chapter 10-11.

9. Bolloten, *Revolution and Counterrevolution*.

10. See Preston, *We Saw Spain Die*; Herbert Southworth, *Guernica! Guernica! A Study of Journalism, Diplomacy, Propaganda, and History* (Berkeley: University of California Press, 1977); Martin Minchom, *Spain’s Martyred Cities: From the Battle of Madrid to Picasso’s Guernica* (Brighton: Sussex Academic Press, 2015); David Deacon, *British News Media and the Spanish Civil War: Tomorrow May Be Too Late* (Edinburgh: Edinburgh University Press, 2008).

11. See Phillip Knightley, *The First Casualty: The War Correspondent as Hero, Propagandist, and Myth Maker from the Crimea to Vietnam* (London: Andre Deutsch, 1975); Robert Stradling, *Your Children Will Be Next: Bombing and Propaganda in the Spanish Civil War, 1936-39* (Cardiff: University of Wales Press, 2008); Hugo García, *The Truth About Spain!*

12. See Benedict Anderson, *Imagined Communities: Reflections on the Origin and Spread of Nationalism* (London: Verso, 2016), chapters 4 and 7.

13. *Ibid.*, 53-57.

14. *Ibid.*, 114-127.

15. *Ibid.*, 55-56.



the Army, Bishops and Crown (ABC) of pre-Republican Spain, as Henry Buckley put it, had been cooperating for centuries with landowners and capitalists to keep power out of the hands of ordinary Spaniards.<sup>16</sup> For example, the army crushed workers' revolts for the landed and employer classes,<sup>17</sup> while the Jesuit order made use of banks and financial networks to amass a third of the nation's wealth.<sup>18</sup> Bound together by a visceral hatred of anything resembling Communism and a longing for Spain's lost glory from the times of the Reconquista, the right-wing camp faced few internal disputes.<sup>19</sup> Franco, in synthesizing his supporters' various ideologies and maintaining an iron hold on the military, had no difficulty obtaining foreign aid from Hitler and Mussolini; he presented a vision of Spain that easily accorded with their national interests.<sup>20</sup>

The Republic, on the other hand, had neither a coherent self-image nor a natural ally on the world stage. Its government, led by the center-left President Manuel Azaña and Prime Minister José Giral, was not as revolutionary as the Soviet Union - though Giral's policy of "Socialism in One Country" would have prescribed moderation in international affairs at the time.<sup>21</sup> The Spanish Republic lacked a bourgeois element, making alliances with Britain and France unlikely: the Republic's early war effort was quickly taken over by Anarchist and Socialist militias who unleashed a social revolution in the zones they controlled, killing thousands of landowners, priests and nuns.<sup>22</sup> Fearful of Bolshevism spreading into western Europe, and determined to contain any local conflicts from giving rise to a European war, British and French officials decided within a month of Franco's coup to impose a policy of non-intervention.<sup>23</sup> This policy, which forbade European powers from selling arms or sending troops to aid either belligerent, was disproportionately damaging to the Republic, as Germany and Italy repeatedly violated the arrangements—providing in total 96,000 men and \$575 million in military aid to Franco<sup>24</sup>—while Britain, France and the US stringently refused to sell arms to the Republic which the latter was legally entitled to buy.<sup>25</sup>

Thus, the Republicans had to overturn the Non-Intervention Agreement to have any hope of winning the war, which meant gaining the favour of Britain and France. With the rise of Francesco Largo Caballero's new government in September 1936, and even more after Juan Negrín replaced Largo Caballero the following May, the Republic suppressed its revolutionary and regionalist elements to present itself to the world as a centralized, bourgeois democracy.<sup>26</sup> As the Anarchists reluctantly joined the Catalan Generalitat, and the Largo Caballero brought the Left Socialists to heel, local defence committees were quickly subsumed into a nationalized army.<sup>27</sup> The government's national image was crystallized when the Communist politician Dolores Ibárruri forswore revolutionary ambitions on behalf of her party, stating that they were "motivated exclusively by the desire to defend the *democratic* Republic established on 14 April 1931."<sup>28</sup> The Republicans now countered the Nationalists' framing of the war as a crusade against Marxism by reframing it as "the universal forces of progress and democracy against a barbaric tyranny which seeks to plunge the world into the dark oppression of the Middle Ages".<sup>29</sup> Thus, the Republic cast itself in opposition also to Spain's feudal past under the ABC. These two key tenets—democracy and progressivism—formed the ideological basis of its relations with the international community, including, first and foremost, the foreign journalists.

Journalists were quite receptive to this new framing in response. Those of the Pink

16. Buckley, *Life and Death of the Spanish Republic*, 19.

17. Beevor, *The Battle for Spain*, 12-15.

18. Matthews, *Half of Spain Died*, 34.

19. Sandie Holguin, *Creating Spaniards: Culture and National Identity in Republican Spain* (Madison, Wis: University of Wisconsin Press, 2002), 43-46.

20. Beevor, *The Battle for Spain*, 135-44.

21. Holguin, *Creating Spaniards*, 16-25; Beevor, *The Battle for Spain*, 139.

22. Matthews, *Half of Spain Died*, 121-24; García, *The Truth About Spain!*, 123.

23. Bolloten, *Revolution and Counterrevolution*, 170-77.

24. Matthews, *Half of Spain Died*, 138-46; García, *The Truth About Spain!*, 185.

25. Matthews, *Half of Spain Died*, 130.

26. *Ibid.*, 125-28.

27. Beevor, *The Battle for Spain*, 145-47.

28. *Ibid.*, 145.

29. García, *The Truth About Spain!*, 104-17

Generation, who grew up after World War I and gravitated towards communism in the 1930s, were predisposed to condemn the institutions that oppressed the working and peasant classes.<sup>30</sup> In *Spanish Testament*, the then-communist Arthur Koestler placed “the roots of the Spanish question in the agrarian problem”; i.e. the feudal land system.<sup>31</sup> Vincent Sheean of the *Chicago Tribune* and John Langdon-Davies of the *News Chronicle* likewise indicted the “heartless ostentation of the new rich” in the cities.<sup>32</sup> Others who did not lean left were attracted by the fight for democracy, and against fascism - democracy’s antithesis.<sup>33</sup> As Orwell confessed in *Homage*, “The international prestige of Fascism...had been haunting me like a nightmare ...Since 1930 the Fascists had won all the victories; it was time they got a beating”.<sup>34</sup> Many Britons concurred with this assessment. Although the Falangist Party only comprised a minority of Franco’s forces,<sup>35</sup> anti-fascism nevertheless became a major rallying cry for correspondents—a phenomenon made possible by the fact that all of them, no matter their national origin or political orientation, were relatively ignorant of Spain’s background when they arrived.<sup>36</sup> Since few had been assigned there before the Civil War, most fell prey to stereotyping: for example, associating the Nationalists with the sixteenth century “Black Legend” of Spanish fanaticism.<sup>37</sup>

However, the international press did not come to identify with Spain solely due to government propaganda or popular stereotypes. Along with this ideological framework, the correspondents’ direct experience of the physical conditions of the war itself also played a fundamental role in shaping their pilgrimages. One of the most striking examples of this was during the Battle of Madrid in late 1936. Even before Franco’s forces attacked the capital, Madrid was already a center of activity due to its sophisticated telegraph and telephone network which other regions in the country lacked.<sup>38</sup> The first Foreign Press Office in the Republican zone was established there, and a set of core staff hereafter became responsible for accommodating the incoming journalists and censoring their dispatches.<sup>39</sup> Sent to the Hotel Florida or Hotel Gran Vía, where they could easily access the Telefónica building across the street to phone stories to their head offices, most journalists became familiar with each other and started conducting their work in groups—an arrangement that the Press Office’s shortage of cars to the front conditioned as well.<sup>40</sup>

The communal feeling enabled by these structural factors extended to the Spanish people when both correspondents in and residents of Madrid became victims of the Nationalists’ bombing campaign in November 1936. No longer were journalists protected by the detachment of their profession: instead, they sheltered in the same basements as civilians, found their living quarters similarly ravaged, and witnessed the same carnage on the streets.<sup>41</sup> The pronoun “I” more adequately changed into “we”: “Living through a bombardment with people”, as *Paris-Soir* correspondent Louis Delaprée wrote, “makes you feel incredibly close to them”.<sup>42</sup> This connection was not only of relatability, but of admiration too, as the Spaniards’ unwavering resistance commended the respect of nearly every foreign observer.<sup>43</sup> “The working men in blue cotton shirts...wore a proud look”, Louis Fischer, correspondent for *The Nation*, found. “Their eyes said, ‘I am a man’, even though life was treating them like dogs”.<sup>44</sup> Virginia Cowles of the *Daily Telegraph* similarly remarked

30. Arthur Koestler in *The God That Failed: A Confession*, ed. Richard Crossman (New York: Harper & Brothers, 1949), 17-21.

31. Koestler, *Spanish Testament*, 42-43

32. Vincent Sheean, *Not Peace But a Sword* (New York: Doubleday, Doran & Company, 1939), 199; John Langdon-Davies, *Behind the Spanish Barricades* (London: Secker & Warburg, 1936), 121.

33. Fascism and Democracy, like Fascism and Communism, were frequently juxtaposed as axiomatic opposites. See *The God That Failed*.

34. Orwell, *Homage to Catalonia*, 88.

35. Paul Preston, ¡Comrades! Portraits from The Spanish Civil War (London: HarperCollins, 1999), 75-106.

36. Deacon, *British News Media and The Spanish Civil War*, 46.

37. *Ibid.*, 46-47, 55-56.

38. *Ibid.*, 18-21.

39. *Ibid.*, 21, 34-36; García, *The Truth About Spain!*, 65.

40. Preston, *We Saw Spain Die*, 28; Deacon, *British News Media and The Spanish Civil War*, 35.

41. Preston, *We Saw Spain Die*, 25-47; Minchom, *Spain’s Martyred Cities*, 127-45.

42. Minchom, *Spain’s Martyred Cities*, 147.

43. For more examples than the ones given in this essay, refer to Preston, *We Saw Spain Die*, and Deacon, *British News Media and The Spanish Civil War*.

44. Preston, *We Saw Spain Die*, 222.

that “even in their darkest hour, the [Spanish people] retained a sense of humour and a zest for living”.<sup>45</sup> The “fierce, vital courage” of every “individual man and woman” gained the equally fierce veneration of Henry Buckley; even the cynical, anti-communist *Daily Express* correspondent, Sefton Delmer, found himself “being swept along in the exhilaration of Madrid’s refusal to abandon the fight.”<sup>46</sup> The volunteers of the International Brigade were highly esteemed as well, praised by Herbert Matthews as “the finest group of men I ever knew or hope to know in my life” for their efforts to defend the city.<sup>47</sup>

Madrid’s unexpected survival against the predictions of everyone involved—Republicans, Nationalists, journalists and foreign governments—turned it into a beacon of hope for supporters of democracy around the world.<sup>48</sup> Journalists were key to constructing this narrative as they had the unique, dual role of being both *participants in* and *chroniclers of* the trials experienced by the Spanish people. Thus they transformed the subjective feeling of having taken part in “a struggle that mattered” into an objective consensus in the newspapers that the struggle *did* matter.<sup>49</sup> Madrid’s centrality, as the place where “the dignity of the common man had stood firm against the world” was therefore not only philosophical and discursive, but actual, because of the sheer number of people who “realized” it by travelling there—Ernest Hemingway, John Dos Passos, Josip Tito and Jawaharlal Nehru being some of the more famous examples.<sup>50</sup> As pilgrims of the “capital of the world”, their “shared fatality” was in bearing witness to a universal moment that transcended and dissolved individual differences.<sup>51</sup>

The result of this imagined community was the “I” story or witness account. Since journalistic convention in the 1930s encouraged this type of testimonial reporting, journalists openly wrote of what they had seen in Spain and exhorted the public to listen.<sup>52</sup> In the infamous dispatch “Bombs over Madrid”, Louis Delaprée wrote, “I catalogue the ruins, I count the dead, I weigh up the spilled blood. I have seen all these images of the martyred city of Madrid that I will try to put before your eyes... You will judge for yourselves”.<sup>53</sup> To counter non-intervention sentiments back home, they reported the Nationalists’ massacre of 2,000 civilians in a stadium after the conquest of Badajoz, the historically unprecedented carpet bombing of Madrid, Durango and Guernica, and stressed that appeasing Hitler and Mussolini would only strengthen these leaders’ appetite for expansion.<sup>54</sup> In this endeavor, they worked against their own editorial boards back home, as the majority of British, French and American publications distrusted the Republic from the first “Red killings” in July 1936 and favoured Franco or non-intervention.<sup>55</sup>

However, editorial stances changed throughout the war: of the five main pro-Nationalist dailies in Britain, two began to favour Republicans while the others toned down their anti-Republican rhetoric.<sup>56</sup> Nationalist atrocities gained more coverage than Republican ones, and the motif of “suffering Republican citizens” came to dominate newsreel coverage in 1939.<sup>57</sup> This in turn influenced Republican lobbyists from Catholic, Protestant, Conservative, Liberal and Radical backgrounds to emerge and organize. The literary intelligentsia also adopted the Republic’s cause: the pamphlet “Authors Take Sides on the Spanish Civil War” is notable not only for the numerical

45. Virginia Cowles, *Looking for Trouble* (New York and London: Harper & Brothers, 1941), 35.

46. Buckley, *Life and Death of the Spanish Republic*, 222; Sefton Delmer, *Trial Sinister: An Autobiography* (London: Secker & Warburg, 1961), 299.

47. Matthews, *The Education of a Correspondent*, 92.

48. Preston, *We Saw Spain Die*, 32; Minchom, *Spain’s Martyred Cities*, 22.

49. Preston, *We Saw Spain Die*, 365-66.

50. Sheean, *Not Peace But a Sword*, 199; Anderson, *Imagined Communities*, 53-54, observes that “the centrality of the holy cities was experienced and ‘realized’ by the constant flow of pilgrims moving towards them from remote and otherwise unrelated localities”; Garcia, *The Truth About Spain!*, 1.

51. “Capital of the World” is the title of chapter 2 in Preston, *We Saw Spain Die*; Anderson discusses the concept of “shared fatality” in chapter 4 of *Imagined Communities*.

52. Deacon, *British News Media and The Spanish Civil War*, 46.

53. Minchom, *Spain’s Martyred Cities*, 136.

54. Garcia, *The Truth About Spain!*, 125, 137-43; Preston, *We Saw Spain Die*, 238-48.

55. Deacon, *British News Media and The Spanish Civil War*, 116; Preston, *We Saw Spain Die*, 6-19.

56. Deacon, *British News Media and The Spanish Civil War*, 147.

57. *Ibid.*, 137-46, 159-60.

majority of pro-Republican responses - many pro-Nationalist responses were omitted - but also for the striking similarity between rhetoric employed in the pro-Republican responses and the Spanish governments' phrases.<sup>58</sup> The major pro-Franco organizations, in contrast, remained under the leadership of were always headed by the same dozen individuals, and collected far less in donations.<sup>59</sup> By flooding international discourse with this language, foreign journalists influenced public opinion and civil society significantly.

For the most part, however, they could not reach official government circles. Britain continued to pressure Léon Blum's Popular Front government to keep the Franco-Spanish border closed, refused to acknowledge evidence of Italian intervention in the Non-Intervention Committee, and simultaneously denounced Stalin for his much smaller endowments to the Republic.<sup>60</sup> Roosevelt likewise maintained the US embargo on arms sales, even though American oil tycoons flagrantly supplied millions of tons of oil to support Franco.<sup>61</sup> Non-intervention prevailed largely because the center-left and left-wing parties in Britain and France chose strategic interests over ideological affinities.<sup>62</sup> However, journalists' warnings about Fascist aggression were vindicated by Hitler's annexation of Austria in March 1938 and invasion of the Sudetenland later that year. As a result, the British Labour and Liberal parties began to oppose non-intervention, while Anthony Eden resigned as Foreign Secretary - precipitating a split within the Conservative Party.<sup>63</sup> As Chamberlain's faction retained power in government, however, this new opposition was not strong enough to abandon the non-intervention policy. While the Republicans may have won the battle for public opinion—polls suggested that their support in Britain and America amounted to 70 per cent—Franco's foreign supporters were located in the political and business elite, who held de facto influence over government policy.<sup>64</sup> It was not until 1939, when the Republic was on the verge of defeat, that Roosevelt admitted to his ambassador to Spain: "We have made a mistake. You have been right all along [in opposing the non-intervention policy]".<sup>65</sup>

Thus, despite the international reach of the Republic's cause and its ability to mobilize actors from civil society, the press, the intelligentsia, and sectors of the government to defend it, Republican nationalism was unable to meaningfully alter foreign policy. Appeasement, the dominant policy of the 1930s remained the favoured approach. In the face of pressures of maintaining the status quo, the Republic mustered hundreds of outdated Soviet armaments sent grudgingly by Stalin, and approximately 50,000 international volunteers - which were forcibly disbanded by the League of Nations part way through the war.

However, the Republic's national vision influenced international relations in other ways: by compelling foreigners to live, work and even die for the Republic's cause in an age where total war had long shattered the romantic legend of volunteering in overseas conflicts the Republic provided the opportunity for vast networks of global activity to come into contact with each other. The rhetoric employed toward this endeavor was ultimately utilized by Allied leaders during World War II, long after the Republic had been defeated. On 4 June 1940, when Winston Churchill proclaimed that Britain "shall never surrender" to the "menace of tyranny" and "the odious apparatus of Nazi rule" it seemed to at last avenge the ghost of Miguel de Unamuno, who back in 1936 had told the Francoist general José Millán Astray that "you will win, but you will not convince."<sup>66</sup>

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58. "Authors Take Sides on the Spanish Civil War," *Left Review*, June 1937.

59. García, *The Truth About Spain!*, 206-15.

60. Matthews, *Half of Spain Died*, 7, 134-35.

61. Beevor, *The Battle for Spain*, 138.

62. García, *The Truth About Spain!*, 199-200; Minchom, *Spain's Martyred Cities*, 14.

63. García, *The Truth About Spain!*, 209-26

64. *Ibid.*, 203.

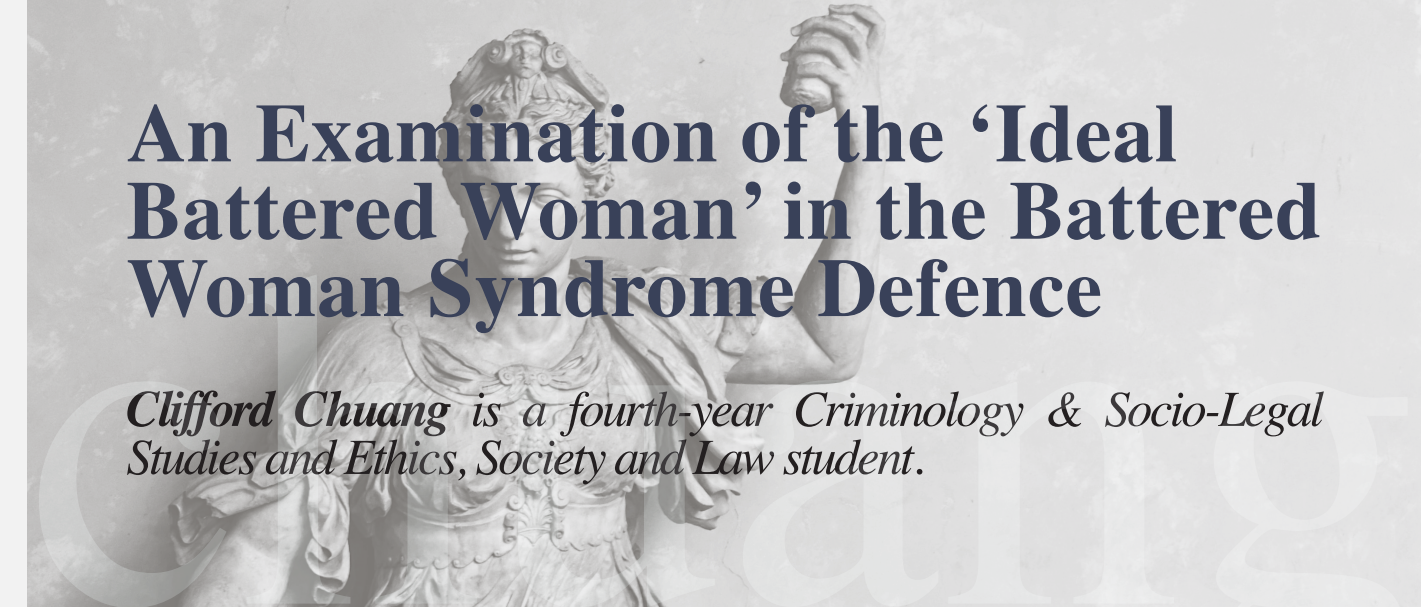
65. Preston, *We Saw Spain Die*, 364.

66. Winston Churchill, "We Shall Fight on the Beaches," (House of Commons, London, June 4, 1940); Luis Portillo, "Unamuno's Last Lecture," *Horizon: A Review of Literature and Art* 4, no. 24 (1941): 399-400.



## References

- “Authors Take Sides on the Spanish Civil War”. *Left Review*, June 1937.
- Anderson, Benedict. *Imagined Communities: Reflections on the Origin and Spread of Nationalism*. London: Verso, 2016.
- Beevor, Antony. *The Battle for Spain: The Spanish Civil War, 1936-1939*. London: Weidenfeld & Nicolson, 2006.
- Bolloten, Burnett. *The Spanish Civil War: Revolution and Counterrevolution*. 2nd ed. Chapel Hill: University of North Carolina Press, 2015.
- Buckley, Henry. *The Life and Death of the Spanish Republic: A Witness to the Spanish Civil War*. London: Hamish Hamilton, 1940.
- Churchill, Winston. “We Shall Fight on the Beaches”. Speech to the House of Commons, London, June 4, 1940.
- Cowles, Virginia. *Looking for Trouble*. New York and London: Harper & Brothers, 1941.
- Crossman, Richard, ed. *The God That Failed: A Confession*. New York: Harper & Brothers, 1949.
- Deacon, David. *British News Media and the Spanish Civil War: Tomorrow May Be Too Late*. Edinburgh: Edinburgh University Press, 2008.
- Delmer, Sefton. *Trial Sinister: An Autobiography*. London: Secker & Warburg, 1961.
- Fischer, Louis. *Men and Politics: An Autobiography*. New York: Duell, Sloan and Pearce, 1941.
- García, Hugo. *The Truth About Spain! Mobilizing British Public Opinion, 1936-39*. Brighton: Sussex Academic Press, 2010.
- Gellhorn, Martha. “Memory,” *London Review of Books*, December 12, 1996.
- Holguín, Sandie. *Creating Spaniards: Culture and National Identity in Republican Spain*. Madison, Wis: University of Wisconsin Press, 2002.
- Knightley, Phillip. *The First Casualty: The War Correspondent as Hero, Propagandist, and Myth Maker from the Crimea to Vietnam*. London: Andre Deutsch, 1975.
- Koestler, Arthur. *Spanish Testament*. London: V. Gollancz, 1937.
- Langdon-Davies, John. *Behind the Spanish Barricades*. London: Secker & Warburg, 1936.
- Matthews, Herbert. *Half of Spain Died: A Reappraisal of the Spanish Civil War*. New York: Scribner, 1973.
- . *The Education of a Correspondent*. New York: Harcourt, Brace and Company, 1946.
- Minchom, Martin. *Spain’s Martyred Cities: From the Battle of Madrid to Picasso’s Guernica*. Brighton: Sussex Academic Press, 2015.
- Orwell, George. *Homage to Catalonia*. London: Secker & Warburg, 1938.
- . *The Complete Works of George Orwell*, edited by Peter Davison, vol. 11. London: Secker & Warburg, 1998.
- Portillo, Luis. “Unamuno’s Last Lecture.” *Horizon: A Review of Literature and Art* 4, no. 24 (1941): 394-400.
- Preston, Paul. *¡Comrades! Portraits from The Spanish Civil War*. London: HarperCollins, 1999.
- . *We Saw Spain Die: Foreign Correspondents in The Spanish Civil War*. London: Constable, 2008.
- Sheean, Vincent. *Not Peace But a Sword*. New York: Doubleday, Doran & Company, 1939.
- Southworth, Herbert. *Guernica! Guernica! A Study of Journalism, Diplomacy, Propaganda, and History*. Berkeley: University of California Press, 1977.
- Stradling, Robert. *Your Children Will Be Next: Bombing and Propaganda in the Spanish Civil War, 1936-39*. Cardiff: University of Wales Press, 2008.



# An Examination of the ‘Ideal Battered Woman’ in the Battered Woman Syndrome Defence

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Traditional self-defence doctrine in Canada was enacted primarily to address male-on-male violence in a ‘bar room brawl’ setting.<sup>1</sup> By virtue of this, it was ill-suited for evaluating cases of male-female domestic violence characterized by prolonged abuse, lack of social support, and other circumstances that differ from a ‘bar room brawl’.<sup>2</sup> The battered woman syndrome (BWS) was thus introduced to accommodate for the unique situations of abused females killing their abuser. Drawing from Seligman’s theory of learned helplessness, as well as the cycle of violence theory, Dr. Lenore-Walker presents a comprehensive model explaining why women stay in abusive relationships and why they employ lethal force despite a lack of imminent danger.<sup>3</sup> However, the theory of BWS paints an unrealistic conception of the ‘ideal battered woman’ that many victims of abuse do not fit into, especially women who exhibit active resistance against their abusive partners. This paper considers the merits of a reformulated conception of battered woman syndrome that does not rely on the ‘ideal battered woman’ standard of passivity. It begins with a brief history of self-defence law in Canada, followed by the introduction of traditional BWS. This paper will then critically analyze the battered woman syndrome, identifying its shortcomings and proposing possible solutions to rectify the issue. It argues that a reformulated account of BWS combining elements from both psychological and socio-political understandings may be a possible solution.

## **Context**

The law regarding self-defence in Canada before the 1990s was very unforgiving to women. According to Sheila Noonan (1993), a finding of traditional self-defence requires assessing “whether the ordinary man in similar circumstances would have believed himself under threat of death or grievous bodily harm, and whether he further believed that self-preservation required him to deploy the amount of force he did”.<sup>4</sup> Yet the typical battered woman killed their partner at a time where harm was not imminent, and had multiple opportunities to leave the relationship. In the eyes of traditional self-defence doctrine, these women would not be successful in their claim of self-defence. In light of this, scholars criticized the traditional model as a highly gendered construction of self-defence that failed to take into account the unique circumstances of abused women.<sup>5</sup> Specifically, the doctrine was meant to address situations of a ‘bar-room brawl’, where two men of similar size and strength and no previous

1. Noonan, S. (1993). Strategies of Survival: Moving Beyond the Battered Woman Syndrome. In Conflict With The Law: Women and The Canadian Justice System, 247-270, 248

2. Shaffer, M. (1997). The Battered Woman Syndrome Revisited: Some Complicating Thoughts Five Years after R. v. Lavallee. The University of Toronto Law Journal, 1-33, 7

3. R. v Lavallee, 21022 (Supreme Court of Canada 05 03, 1990)

4. Noonan, S. (1993). Strategies of Survival: Moving Beyond the Battered Woman Syndrome. In Conflict With The Law: Women and The Canadian Justice System, 247-270, 249

5. Regehr, C. (1995). Battered Woman Syndrome in Canadian Courts. Canadian Journal of Psychiatry, 130-135, 130

conflicts engage in physical confrontation.<sup>1</sup> As such, not only is the difference in size and strength between the man and the woman disregarded, the psychological and emotional effects accumulated throughout the battering relationship is also unaccounted for.<sup>2</sup>

### ***Traditional Battered Woman Syndrome***

To provide a claim of self-defence for battered women, Dr. Lenore-Walker developed her theory of battered woman syndrome. BWS is based on the psychological view of the mind, where actions can be explained by the mind's inner workings. Using Seligman's theory of learned helplessness, Walker claims that abused women develop learned helplessness through the repeating cycles of violence that characterize abusive relationships. Seligman is credited with the conception of learned helplessness, which he developed through experimentation with dogs in electric cages. He found that when given enough unavoidable shocks, animals become passive in the face of trauma.<sup>3</sup> In the context of abusive relationships, Lenore-Walker argued that battered women go through repeated cycles of violence that result in the development of Seligman's learned helplessness. This cycle of violence consists of three repetitive stages. First is the 'tension building' stage, characterized by a buildup of tension through minor altercations.<sup>4</sup> Then the 'acute battering incident' occurs, where existing tensions explode into a fury of violence that places the woman at a high risk of injury.<sup>5</sup> Afterwards comes the 'period of loving-contrition', characterized by a decrease in tension due to the batterer exhibiting apologetic behaviour.<sup>6</sup> The woman then gives the batterer another chance, hoping that he will change his ways. This delusion effectively ropes her back into the relationship. After enough cycles, the woman develops learned helplessness, in which she feels trapped in the relationship due to the seemingly omnipotent nature of her batterer.<sup>7</sup> In addition to learned helplessness, the cycles of violence also explain why abused women, despite a lack of imminent danger, find that they have no choice but to use lethal force.<sup>8</sup> In general, Lenore-Walker's theory of BWS grants battered women a claim of self-defence by taking into account the psychological effects of prolonged abuse. This effectively alters the law by evaluating the abused woman's circumstances through the lenses of an 'ordinary battered woman' instead of an 'ordinary person'.

Despite its strengths, BWS contains a significant caveat: learned helplessness compels all battered women to conform to an 'ideal battered woman' standard of passivity.<sup>9</sup> In other words, battered woman syndrome paints an unrealistic and overly simplistic picture of abused women. It views the "woman as helpless, not one who is struggling".<sup>10</sup> Women who struggle both physically and emotionally thus fail in their claim of self-defence due to displaying "signs of initiative and agency that are inconsistent with BWS".<sup>11</sup> A clear example of this can be seen in *State v. Anaya*, where prosecutors exploited the fact that the abused woman stabbed her partner in a prior incident to undermine the psychologist's testimony that battered women react to abuse with passivity.<sup>12</sup> <sup>13</sup> By creating an assumption that abused women exhibit passivity in the face of prolonged danger, BWS excludes abused women who actively resist from a proper claim of self-defence.

1. Noonan, S. (1993). Strategies of Survival: Moving Beyond the Battered Woman Syndrome. In *Conflict With The Law: Women and The Canadian Justice System*, 247-270, 248

2. Ibid.

3. Seligman, M. E. (1972). Learned Helplessness. *Annual Review of Medicine*, 407-412, 408

4. Walker, L. E. (1979). Battered Woman Syndrome. *Annals New York Academy of Sciences*, 142-157, 146

5. Ibid.

6. Ibid.

7. Shaffer, M. (1997). The Battered Woman Syndrome Revisited: Some Complicating Thoughts Five Years after *R. v. Lavallee*. *The University of Toronto Law Journal*, 1-33, 4

8. Ono, E. (2017). Reformulating the Use of Battered Woman Syndrome Testimonies in Canadian Law: Implications for Social Work Practice. *Journal of Women and Social Work*, 24-36, 24.

9. Shaffer, M. (1997). The Battered Woman Syndrome Revisited: Some Complicating Thoughts Five Years after *R. v. Lavallee*. *The University of Toronto Law Journal*, 1-33, 25

10. Coleman, R. (2009). Battered Woman Syndrome. *The Georgetown Journal of Gender and The Law*, 333-349, 346

11. Champaign, L. (2010). Battered Woman Syndrome. *The Georgetown Journal of Gender and The Law*, 59-76, 72

12. Champaign, L. (2010). Battered Woman Syndrome. *The Georgetown Journal of Gender and The Law*, 59-76, 72

13. *State v. Anaya*, 438 A.2d 892 (Supreme Judicial Court of Maine 1981)



### ***The Socio-Political Model: A Potential Solution?***

To account for the exclusions seen in BWS, Sheila Noonan developed a solution rooted in socio-political understandings. According to Noonan, relying on the battered woman syndrome as a defence penalizes deviations from passivity “while the social factors that lead to violence against women remain unaddressed”.<sup>14</sup> She posits that the law should avoid pathologizing abused women by understanding their actions to be completely rational when taking into account the social context of abused women.<sup>15</sup> In Noonan’s view, women who actively resist do not stay in the relationship because of learned helplessness, but rather due to socio-political factors such as financial dependency and lack of social support.<sup>16</sup> This effectively rectifies the exclusions seen in the psychological model.

However, the socio-political model paints an overly rational picture of women, thus creating its own exclusions. For instance, it discounts the reasons for which women of high social status may stay in an abusive relationship, as well as women dealing with substance abuse. This is because the socio-political model completely rejects the presence of learned helplessness in an abusive relationship. By drawing the line too far from psychology, the socio-political model undermines the important psychological effects that prolonged abuse has on battered women.

### ***The Reformulated Battered Woman Syndrome***

The psychological and socio-political models both prevent a certain stratum of battered women from a proper claim of self-defence. By focusing too much on the impact of learned helplessness, the former model excludes women who do not fit the ‘ideal battered woman’ standard of passivity. On the other hand, the latter model excludes women of high social status due to a complete disregard of the possibility of learned helplessness. Both are polarizing models that do not adequately capture the complete circumstances of all abused women. This paper argues that a middle ground can be found by reformulating the battered woman syndrome. To do so, the requirement of learned helplessness in establishing BWS must be removed. This effectively abolishes the ‘ideal battered woman’ standard of passivity.

Contrary to traditional battered woman syndrome doctrine, battered women stay in abusive relationships for reasons other than learned helplessness. For instance, scholars like David Faigman and Ola Barnett agree with Noonan that women may stay for socio-political reasons, such as financial dependence or lack of social and legal support.<sup>17 18</sup> Julianne Leary notes other factors such as religious convictions, social stigma, and fear of violent reprisal from the abuser.<sup>19</sup> In addition, Katharine Baker points out reasons that lie beyond socio-political understandings: some women are emotionally bound to their partners, and simply do not wish to leave.<sup>20</sup> They wish to continue to live together with the man they love in hopes that the episodes of violence will eventually pass.<sup>21</sup> Yet not wanting to leave the relationship does not imply that the abuse was negligible: rather, it signifies that powerful forces can counterbalance the impetus to leave an abusive relationship; something that the law fails to take into account. By assuming that it is natural for abused women to leave, the law paints a robotic and anemic picture of relationships that does not do justice to the complex emotional intricacies that compel partners to stay committed even in the face of constant abuse.<sup>22</sup>

Regardless of the reasons for staying in the relationship, abused women still develop symptoms of battered woman syndrome due to the presence of the cycles of violence. According to Lenore-

14. Noonan, S. (1993). Strategies of Survival: Moving Beyond the Battered Woman Syndrome. In *Conflict With The Law: Women and The Canadian Justice System*, 247-270, 254

15. *Id.*, 255.

16. Noonan S. (1993). Strategies of Survival: Moving Beyond the Battered Woman Syndrome. In *Conflict With The Law: Women and the Canadian Justice System*, 247-270, 255.

17. Faigman, D. L. (1986). The Battered Woman Syndrome and Self-Defence: A Legal and Empirical Dissent. *Virginia Law Review*, 619-647, 645

18. Barnett, O. W. (2000). Why Battered Woman Do Not Leave. *Trauma, Violence & Abuse*, 343-372, 359

19. Leary, M. J. (1985). A Woman, A Horse, And A Hickory Tree: The Development of Expert Testimony on The Battered Woman Syndrome in Homicide Cases. *UMKC Law Review*, 386-410, 400

20. Baker, K. K. (2005). Gender and Emotion in Criminal Law. *Harvard Journal of Law & Gender*, 447-466, 457

21. *Id.*, 458

22. *Ibid.*

Walker, multiple iterations of the cycle can cause abused women to anticipate their death before the next acute battering incident arrives.<sup>23</sup> This leads to the belief that their lives are being threatened, thus compelling them to utilize lethal force at a time of non-imminence.<sup>24</sup> This phenomenon was illustrated and accepted in *R. v. Lavallee* (1990), where the defendant engaged in a physical and verbal argument with her partner. Before leaving the bedroom, her partner handed her a gun and declared that “wait till everyone leaves, you’ll get it then”, as well as something to the effect of “either you kill me, or I’ll get you”.<sup>25</sup> The defendant reported being so scared and, fearing her life is about to end, shot her partner once in the back of the head.<sup>26</sup> The Supreme Court of Canada accepted the expert testimony on battered woman syndrome, positing that for an abused woman to wait until an altercation ensues to defend herself would be the equivalent of “sentencing her to murder by installment”.<sup>27</sup>

Clearly, symptoms of battered woman syndrome do not hinge on the passivity of the abused women: at no point did Angelique Lavallee’s learned helplessness play a significant role in her decision to kill her abusive partner. In fact, Lenore-Walker herself stressed that the only conditions required to be considered a ‘battered woman’ is if the woman experienced the cycles of violence at least once.<sup>28</sup> As such, requiring abused women to fit into an ‘ideal battered woman’ standard of passivity is arbitrary to the extent of establishing battered woman syndrome. In light of these facts, the reformulated BWS suggests a more realistic depiction of abusive relationships: abused women may stay in a relationship for a number of reasons that are not limited to learned helplessness. By virtue of staying in the relationship, they are subject to the symptoms of battered woman syndrome through the recurring cycles of violence, thus prompting them to kill at a time where danger was not imminent. Therefore, by removing learned helplessness as a requirement for a plea of battered woman syndrome self-defence, while also acknowledging that it serves as one of the many reasons why women stay in abusive relationships, the reformulated BWS becomes open to accepting both psychological and socio-political testimony in explaining why women stay. This allows the reformulated model to account for the exclusions seen in both the psychological and socio-political models. Specifically, not only does it entitle women who do not fit the ‘ideal battered woman’ standard of passivity to a claim of self-defence, it also grants women of high social status – who may truly be suffering from learned helplessness – access to a proper self-defence claim.

A potential criticism for this reformulated BWS model may be that it stretches the boundaries of self-defence too wide. By getting rid of the ‘ideal battered woman’ standard of passivity, the model effectively provides all abused women a ‘free pass’ to kill their abusive partners so long as the cycles of violence are present. However, this criticism is misplaced. The law is obligated to consider all circumstances of abused women when assessing whether their conduct was reasonable; the reformulated model simply allows the law to fulfill that function. To be willfully blind to the lived experiences of abused women would be to deem insignificant the complete circumstances surrounding their abuse. This serves only to stagnate the progress liberal democracies have made in the advancement of gender equality. Rather than being seen as a weakness, this paper argues that the ability to grant all abused women a proper claim of self-defence is actually the main source of strength for the reformulated model, as it provides all abused women the capacity to make full answer and defence in a court of law

## **Conclusion**

For many years, the law has exhibited a male bias that treated women in abusive relationships unfairly. This is largely due to a failure to recognize the complete circumstances of abused women. Scholars and women’s rights advocates have done well over the years to champion a reformulation

23. Faigman, D. L. (1986). The Battered Woman Syndrome and Self-Defence: A Legal and Empirical Dissent. *Virginia Law Review*, 619-647, 627

24. *Ibid.*

25. *R. v Lavallee*, 21022 (Supreme Court of Canada 05 03, 1990)

26. *Ibid.*

27. *Ibid.*

28. Regehr, C. (1995). Battered Woman Syndrome in Canadian Courts. *Canadian Journal of Psychiatry*, 130-135, 132.

of self-defence doctrine regarding cases of battered women, but the results are far from ideal. Current conceptions of battered woman syndrome paint an unrealistic picture of abused women, effectively preventing women who do not fit the 'ideal battered woman' standard of passivity from a claim of self-defence. Sheila Noonan's socio-political model only offers a partial solution to the problem, and not without introducing its own exclusions. This paper suggests a reformulated conception of BWS that finds a middle ground by abolishing the 'ideal battered woman' standard of passivity. To do so, learned helplessness must be removed as a requirement when establishing battered woman syndrome. Contrary to traditional understandings of BWS, women who deviate from the 'ideal battered woman' standard and thus lack learned helplessness are still suffering from BWS due to the cycles of violence (Shaffer, 1997, p. 28). By recognizing that learned helplessness is only one of many reasons why battered women stay in abusive relationships, the reformulated model allows courts to accept both psychological and socio-political testimony to explain why battered women stay. Such a reformulation may be a key step towards a better future for abused women.

## References

- Baker, K. K. (2005). Gender and Emotion in Criminal Law. *Harvard Journal of Law & Gender*, 447-466.
- Barnett, O. W. (2000). Why Battered Women Do Not Leave. *Trauma, Violence & Abuse*, 343-372.
- Champaign, L. (2010). Battered Woman Syndrome. *The Georgetown Journal of Gender and The Law*, 59-76.
- Coleman, R. (2009). Battered Woman Syndrome. *The Georgetown Journal of Gender and The Law*, 333-349.
- Faigman, D. L. (1986). The Battered Woman Syndrome and Self-Defence: A Legal and Empirical Dissent. *Virginia Law Review*, 619-647.
- Leary, M. J. (1985). A Woman, A Horse, And A Hickory Tree: The Development of Expert Testimony on The Battered Woman Syndrome in Homicide Cases. *UMKC Law Review*, 386-410.
- Noonan, S. (1993). Strategies of Survival: Moving Beyond the Battered Woman Syndrome. *In Conflict With The Law: Women and The Canadian Justice System*, 247-270.
- Ono, E. (2017). Reformulating the Use of Battered Woman Syndrome Testimonies in Canadian Law: Implications for Social Work Practice. *Journal of Women and Social Work*, 24-36.
- R. v Lavallee, 21022 (Supreme Court of Canada 05 03, 1990).
- Regehr, C. (1995). Battered Woman Syndrome in Canadian Courts. *Canadian Journal of Psychiatry*, 130-135.
- Seligman, M. E. (1972). Learned Helplessness. *Annual Review of Medicine*, 407-412.
- Shaffer, M. (1997). The Battered Woman Syndrome Revisited: Some Complicating Thoughts Five Years after R. v. Lavallee. *The University of Toronto Law Journal*, 1-33.
- State v. Anaya, 438 A.2d 892 (Supreme Judicial Court of Maine 1981).
- Walker, L. E. (1979). Battered Woman Syndrome. *Annals New York Academy of Sciences*, 142-157.

# The Effects of Emancipation on the Administration of Justice and Incarceration on the Island of Jamaica: From the Slavery Abolition Act to the Morant Bay Rebellion, 1834-1865

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The emancipation of slaves across the British Empire was realized through the *Slavery Abolition Act*, an act proposed in August of 1833 which came into effect on August 1, 1834.<sup>1</sup> However, contrary to popular thought, emancipation did not result in total or immediate freedom for the formerly enslaved people of the British Empire, specifically on the Caribbean island of Jamaica. The institution of apprenticeship from 1834-1838 coupled with the pervasive influence of planter and elite interests on the island worked to thwart the progression and recognition of formerly enslaved people, especially within the legal and punitive realms. The declaration of emancipation had varying degrees of influence on the administration of justice and incarceration on the island of Jamaica. The post-emancipation period of 1834-1865 can be characterized by a brief period of reform, wherein adjudicative bodies were professionalized and penal theories and carceral structures were inspired by Enlightenment thought and modernity, preceded and succeeded by the dominance of planter and elite interests, degradation and social control, and racialized and class-based thought and policies. Through individual analyses of post-emancipation judicial systems and incarceration in Jamaica, this essay presents that emancipation did not truly result in true freedom for the formerly enslaved people of the island as the *Act* and later acts of legislation worked in opposition to their advancement as free peoples. The effect of emancipation on the judicial system in Jamaica are analyzed as a whole from 1834-1865. However, in order to demarcate the period of carceral reform from those of the apprenticeship period and the regression to callous corporal punishment and racialized policies, the analysis of incarceration is divided into three periods: 1834-1839, the early 1840s, and the late 1840s-1865.

There is a formidable amount of scholarship regarding the judicial institutions and incarceration on the period before emancipation and the years following the legislating of the

1. Natasha L. Henry, "Slavery Abolition Act," Encyclopedia Britannica, last modified July 25, 2019, <https://www.britannica.com/topic/Slavery-Abolition-Act>.



*Slavery Abolition Act*. The most comprehensive account of the period predating and following emancipation is Diana Paton's book *No Bond but the Law*. In this 2004 work, Paton provides historical accounts of the judicial and carceral structures from 1780-1870, with a heavy focus on the post-emancipation period. Paton examines how influences such as racism, economic interests, and class-based prejudices impacted the development of judicial and carceral reform. Moreover, Paton examines the post-emancipation carceral structures, in both the reformatory and regressive eras, utilizing theories of punishment, imprisonment, and morality to understand why the systems evolved as they did. Other scholarship includes a wide array of articles that focus on specific areas within the judicial and carceral realm. Jonathan Dalby covers the rise and fall of penal reform in his 2011 article "Luxurious Resting Places for the Idle and Vicious," while authors such as Adam Thomas and Noelle Chutkan explore the defects in the administration of justice and the consequences of unfair and inaccessible adjudication in their articles "Buckra Justice" and "The Administration of Justice as a Contributing Factor in the Morant Bay Rebellion of 1865," written in 2012 and 1996, respectively. Scholarly literature on post-emancipation judicial systems and incarceration in Jamaica has developed in an interesting manner. It is interesting to note how Paton's landmark comprehensive work has set about a trend of specializing in the research and analysis of specific areas of post-emancipation judicial systems and incarceration. Of course, as evidenced by Chutkan, there was scholarship on the topic prior to Paton's work; however, a lot of the scholarship is more recent and focuses on one of the many areas that Paton touches on.

The reformatory effect of emancipation on the judicial system in Jamaica was minor. The reforms that did occur after 1834 were progressive; however, the progressivism of these few reforms paled in comparison to the structural failures and the maladministration that characterized the system. The first change to the system was the abolition of slave courts and the creation of stipendiary magistrates.<sup>2</sup> Formerly enslaved people now had the ability to take cases to petty and quarter sessions and had the appointed and "apolitical" stipendiary magistrates, who were in place to safeguard former slaves from abuse by their employers and whom former slaves could go to if they needed to resolve a petty case.<sup>3</sup> The second change was the legislating of the 1840 "Act to make provision for the improvement of the administration of justice in the several courts [of Jamaica], and for other purposes," which led to the professionalization and establishment of predetermined salaries of the positions of Chief Justice, assistant judge, Clerk of the Peace, and quarter sessions judges.<sup>4</sup> This reformatory act appeared to signify a progressive turn in the judicial realm of post-emancipation Jamaica; however, it was merely an illusion to cover up the judiciary's failure to maintain the rule of law and provide accessible means of litigation to the population.

Between 1834 and 1838, the period of apprenticeship, there were many complaints of overworking made to Governor Sligo by the apprentices; however, these labour-based claims were to be raised in the petty sessions, which were headed by planter magistrates. Even though apprenticeship was abolished in 1838, planter magistrates were, according to Governor Sligo, "[unable] to divest themselves of prejudices acquired... during the existence of slavery."<sup>5</sup> Such resistance towards allowing complete access to means of obtaining justice to the formerly enslaved population continued well into the 1850s and 1860s and was cited as a cause of the Morant Bay Rebellion in 1865.<sup>6</sup>

2. Jonathan Dalby, "Buckra Justice: The Vicissitudes of the Court System and the Role of Judges in Post-Emancipation Jamaica (1834-1865)," *The Journal of Caribbean History* 46, no. 2 (2012): 156, 158.

3. Dalby, "Buckra Justice," 157.

4. *Ibid.*, 158.

5. *Ibid.*

6. Great Britain. Jamaica Royal Commission, 1866, "Report of the Jamaica Royal Commission, 1866 part ii, minutes of evidence and appendix," National Library of Jamaica Digital Collection, accessed April 6, 2020, <https://nljdigital.nlj.gov.jm/items/show/2590>.

Further examples of that exhibit the structural failures of the post-emancipation judicial system, fueled by the prioritization of planter's economic interests and racist sentiments, include partisanship and the failure of justices to show up to oversee court proceedings and the association of a particular crime with formerly enslaved people to degrade and dehumanize them. It was common for justices to fail to appear if the defendant was a planter and the plaintiff was a member of the free black majority. The association of a crime, specifically sexual deviance, with formerly enslaved people further exhibits the biased and defective nature of the judicial system. Prior to the year 1850, only 30 cases involving sexual offenses were uncovered by Jonathan Dalby to produce his article "Luxurious Resting Places for the Idle and Vicious?" However, in 1850, offenses of sexual nature comprised one-quarter of all assize cases tried and one-third of cases only three years later.<sup>7</sup> The dramatic increase in offenses of sexual nature is shocking; yet, it is quite easily explained. According to criminal statistician Vic Gattrel, it is to be expected that the number of offenses of any type would increase as the number of people who are being policed under a given system increases.<sup>8</sup> Moreover, this increase in recorded cases may also reveal that planters and elites had evaded prosecution for sexual offenses because of their status and the partisanship of the judiciary.<sup>9</sup> The increase in prosecutions for sexual offenses is evidence that the plantocracy extended their hegemony over the judicial system so that the rule of law would work in their favour and preserve their managerial and moral superiority over the formerly enslaved people.<sup>10</sup>

Financial barriers also blocked the way to justice for formerly enslaved people. In 1865, for example, the cost of taking a case to a petty sessions court would require approximately the whole week's pay of a wage labourer, and if the plaintiff wished to subpoena any witnesses, there were additional fees.<sup>11</sup> Moreover, there was no guarantee that if a plaintiff appealed the ruling of the lower court that it would be pursued in the higher courts, and if it was pursued, the trial was subject to many delays. With knowledge of how defective and biased the judicial system was in post-emancipation era Jamaica, it is evident that the judicial body's pursuit "of root[ing] out falsehood, pursu[ing] due process, and [upholding] the rule of law," was "underpinned by a visceral racism which expressed itself in courts as elsewhere."<sup>12</sup> With an understanding of the biases and partisanship that disadvantaged the former slaves and peasantry within the judicial realm, rebellion, as seen in Morant Bay on October 11, 1865, does not seem too radical of a response.<sup>13</sup>

Post-emancipation incarceration and the prison system went through more changes and stages when compared to the judicial system, and its development can be categorized into three periods: 1834-1839, the early 1840s, and the late 1840s-1865. The first period spans the period immediately after emancipation in which the apprenticeship labour system was in place. During this period, apart from the abolition of apprenticeship in 1838, there was very little active or effective reform tabled and the punitive mechanisms within prisons were brutish. The *Gaols Act* of 1834 was legislated in June of 1834, two months prior to emancipation; however, the Act, which gave planter magistrates the power to develop prison regulations,

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7. Jonathan Dalby, "Luxurious Resting Places for the Idle and Vicious? The Rise and Fall of Penal Reform in Jamaica in the 1840s," review of *No Bond but the Law: Punishment, Race, and Gender in Jamaican State Formation, 1780-1870*, by Diana Paton, *Small Axe* 15, March 2011, 156.

8. Dalby, "Luxurious Resting Places for the Idle and Vicious," 156.

9. *Ibid.*, 157.

10. Dalby, "Luxurious Resting Places for the Idle and Violent," 157; Adam Thomas, "Outcasts From the World: Same-Sex Sexuality, Authority, and Belonging in Post-Emancipation Jamaica," *Slavery and Abolition* 40, no. 3 (March 2019): 427.

11. Noelle Chutkan, "The Administration of Justice as a Contributing Factor in the Morant Bay Rebellion of 1865," *Jamaican Historical Review* 19, (January 1996): 10

12. David Lambert, *White Creole Culture, Politics and Identity During the Age of Abolition* (Cambridge: Cambridge University Press, 2005), 185; Dalby, "Buckra Justice," 177.

13. Verene Shepherd, "Gad Heuman, 'The Killing Time': The Morant Bay Rebellion in Jamaica," review of "The Killing Time": The Morant Bay Rebellion in Jamaica, by Gad Heuman, *Jamaican Historical Review*, January 1, 1996, 53

had effects that lasted well into the post-emancipation period.<sup>14</sup> During the first period of post-emancipation imprisonment, there was a sort of reformatory aspect to incarceration; yet, it was not to rehabilitate the wrongdoer to a state of respectable and moral individual. Rather, the purpose of incarceration was to have “[prisoners] emerge from confinement adjusted to their ‘station,’” which meant the return to the status of plantation worker for apprentices.<sup>15</sup> This sort of reformation was supported by anti-abolition publications, such as the *Cornwall Chronicle*, which urged corrections houses to install signs with “slogans” such as “Had they been industrious when free, they need not have drudged here like slaves” or “violence and knavery, are the road to slavery,” to reinforce the importance of work and the prisoners’ subordinate statuses.<sup>16</sup>

It was also during this time period, specifically between the years of 1834 and 1836 that the treadmill was installed within prisons across the island. Seen initially as an advantageous mechanism that would create a uniform form of punishment different from field labour.<sup>17</sup> The treadmill was also of benefit to the planter class. The installment of this modern torture device made prisons a “less eligible and more painful” place of subordination compared to the plantations where apprentices were obligated to work; thus, apprentices were less inclined to take flight from the plantations if they were aware of the torture they would experience if they were caught and jailed.<sup>18</sup> Overall, the period of 1834-1839 was characterized by the desire of the planter class to maintain social control and to instill fear within the apprentices and, after 1838, “free” the black population of Jamaica.

Following the period of fear tactics and mechanical punishment is the period of the early 1840s, wherein a great deal of prison and punitive reform took place. By 1840, the prison population of Jamaica was 1,170 inmates, up from 640 inmates in 1834; however, all of the inmates in 1840 were held under criminal law, a law that prevented “overt discrimination among people by race or former slave status.”<sup>19</sup> In the same year, whipping as a punishment was deemed to be degrading and was prohibited, and treadmills were removed from prisons on the island.<sup>20</sup> Moreover, the structure and purpose of prisons were being subject to scrutiny and rehabilitation. In 1840, construction of the General Penitentiary in Kingston commenced, suggesting a belief amongst colonial administrators that the “formerly enslaved [had the capacity] to improve themselves [and be improved] through industry, education, and religious instruction.”<sup>21</sup> The reform of the prison system was, to a degree, supported by the plantocracy. Planters supported the amelioration of prison structures and penal theory as these renovations and new ideologies would result in decreased autonomy for the prisoner, indirectly strengthening the social control of the elite.<sup>22</sup>

A year after the construction of the penitentiary began, John Daughtrey, a former stipendiary magistrate, was appointed as the first General Inspector of Prisons for Jamaica. Daughtrey was a determined individual who sought to reform and modernize the prison system and to rid it of structures and ideologies that linked it to the institution of slavery. His punitive ideologies focused on obtaining the will of the prisoner in order to enact reform within. Daughtrey expressed in his notes that he favoured a “less revolting [and] more reformatory” means of incarceration.<sup>23</sup> After trips to the United States for the purpose of gaining knowledge

14. Dalby, “Luxurious Resting Places for the Idle and Vicious,” 149.

15. Diana Paton, *No Bonds but the Law: Punishment, Race, and Gender in Jamaican State Formation, 1780-1870* (Durham: Duke University Press, 2004), 87.

16. Paton, *No Bonds but the Law*, 25.

17. *Ibid.*, 93.

18. Paton, *No Bonds but the Law*, 105.

19. *Ibid.*, 123.

20. Dalby, “Luxurious Resting Places for the Idle and Vicious,” 150.

21. *Ibid.*, 152.

22. Paton, *No Bonds but the Law*, 126.

23. Paton, *No Bonds but the Law*, 130.

on the various sorts of prisons, Daughtrey attempted to impose a hybrid of the silent prison system and separate prison system, which required a manufacture-based economy. Although a seemingly ingenious plan in theory, it did not do well in practice. A lack of fiscal resources and the agriculture-based economy within Jamaica resulted in the failure of Daughtrey's plan and change in discourse, resulting in the regression to brutish corporal punishment and labour leasing amenable to the forced labour of the apprenticeship period.<sup>24</sup>

After the failure of Daughtrey's reformed prison system in the early 1840s, the later half of the decade up until the year 1865 saw a regression back to class-based and racialized perceptions dominating social thinking that contrasted "European civility" with "African-rooted barbarity." Discourse on penal theory now centred on the failures of the rehabilitative approach and which crimes constituted flogging as punishment.<sup>25</sup> One such crime was sodomy. After reports of sodomy within the General Penitentiary, the *Whipping Act* of 1850 was passed. It was determined that whipping, a corporal punishment, was an appropriate punishment for a crime "intimately involving the body."<sup>26</sup> The regression of this period was furthered by the passing of the Penal Servitude Act in 1854. This act allowed for prisoners who had served half of their sentence to serve the remaining three-quarters of their sentence as a leased labourer.<sup>27</sup> Although the prisoner was able to escape the confines of the often crowded and decrepit prison, they faced subordination in their forced labour. It became clear after the passing of the Act that the days of prison reform had passed, and subordination had returned. Once again, the imprisoned population were subject to corporal punishments and were obliged to serve the plantocracy as they had for so long during the years of slavery.

The declaration of emancipation by British Parliament in August of 1834 would influence the administration of justice and incarceration on the island of Jamaica; however, its influence would not have long-lasting benefits for the formerly enslaved people of the island. Although reforms were instituted in both the judicial bodies and the prisons of Jamaica, their benefit was overshadowed by the arduous process to attain justice by formerly enslaved peoples, the partisanship and bias towards the planter elite that allowed for the continuance of these hardships, and the corporal punishments and race- and class-based politics and policies that preceded and succeeded the prison reform programme of the early 1840s. Emancipation did bring in changes; yet, it is necessary to reinforce that not all of these changes were salutary nor did they enact equality amongst the classes and races of people that inhabited the island of Jamaica. Reforms persisted; however, they were under the influence of the elite plantocracy and worked in opposition of bringing the formerly enslaved people to a state in which they could enjoy and engage their freedom legislated to them by the *Slavery Abolition Act*.

## References

- Chuktan, Nicole. "The Administration of Justice as a Contributing Factor in the Morant Bay Rebellion of 1865." *Jamaican Historical Review* 19, (January 1996): 9-16.
- Dalby, Jonathan. "Luxurious Resting Places for the Idle and Violent? The Rise and Fall of Penal Reform in Jamaica in the 1840s." Review of *No Bonds but the Law: Punishment, Race, and Gender in Jamaican State Formation, 1780-1870*. *Small Axe* 15, March 2011.
- Dalby, Jonathan. "Buckra Justice: The Vicissitudes of the Court System and the Role of Judges in Post-Emancipation Jamaica (1834-1865)." *The Journal of Caribbean History* 46,

24. Dalby, "Luxurious Resting Places for the Idle and Violent," 154.

25. Paton, *No Bond but the Law*, 139.

26. Dalby, "Luxurious Resting Places for the Idle and Violent," 157.

27. Paton, *No Bonds but the Law*, 144-145.



- no. 2 (2012): 154-182.
- Great Britain. Jamaica Royal Commission, 1866, "Report of the Jamaica Royal Commission, 1866 part ii, minutes of evidence and appendix," National Library of Jamaica Digital Collection , accessed April 6, 2020, <https://nljdigital.nlj.gov.jm/items/show/2590>.
- Henry, Natasha L. "Slavery Abolition Act." Encyclopedia Britannica. Last modified July 25, 2019, <https://www.britannica.com/topic/Slavery-Abolition-Act>.
- Lambert, David. *White Creole Culture, Politics, and Identity During the Age of Abolition*. Cambridge: Cambridge University Press, 2005.
- Paton, Diana. *No Bond but the Law: Punishment, Race, and Gender in Jamaican State Formation, 1780-1870*. Durham: Duke University Press, 2004.
- Shepherd, Verene. "Gad Heuman, 'The Killing Time': The Morant Bay Rebellion in Jamaica." Review of *'The Killing Time': The Morant Bay Rebellion in Jamaica*, by Gad Heuman. *Jamaican History Review*, January 1, 1996.
- Thomas, Adam. "Outcasts from the World: Same-Sex Sexuality, Authority, and Belonging in Post-Emancipation Jamaica." *Slavery and Abolition* 40, no. 3 (March 2019): 423-447.

# Humanities

02



REAL **KNOWLEDGE** IS TO KNOW THE  
EXTENT OF ONE'S **IGNORANCE.**

— CONFUCIUS

## Ideology, Identity, and Authority in the Context of Cyberpolarization

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As digital groups begin to develop greater power within social and political discourses, the online and offline intergroup conflicts they produce have rapidly increased. Given that social media users have the ability to filter the information they encounter based on their preferences and biases, users are less likely to engage with a diverse range of opinions, and are more likely to hold more radical beliefs. These tendencies increase the frequency and intensity of intergroup conflict. Legal scholar Cass Sunstein terms this phenomenon “cyberpolarization.” This paper will argue that cyberpolarization is harmful because it promotes conflict between groups with competing moral views by positioning their increasingly radical views as directly opposed to one another. I begin by showing how the homogeneity and ideological isolation observed within offline and online groups radicalize members’ beliefs. Next, I show that these groups’ views can be further manipulated by “moral entrepreneurs” within these groups, and often lead to additional conflicts. I then argue that the establishment of public education programs regarding group bias and intragroup dynamics has the potential to resolve many of the damaging effects of cyberpolarization. I conclude by asserting that cyberpolarization is not simply a negative phenomenon and can have the effect of benefitting social justice movements and members of marginalized groups.

Group polarization occurs when like minded individuals discuss their mutually held beliefs and as a result, they develop a more extreme collective view (Sunstein 68). Rather than discussing opposing beliefs members become stronger in their initial convictions, enabling them to identify their group membership with the ideology they shared with their peers. To illustrate this concept, Sunstein cites a study which assembled groups according to opposing political views (composed of either Republicans or Democrats), both groups reported more extreme political views than they had held going into the experiment, after discussing amongst peers. Sunstein believes this kind of group polarization occurs for three reasons. Firstly, group members are receptive to arguments made by fellow members (Sunstein 71). Secondly, group members have a desire to be perceived positively and accepted by others, especially the dominant members of the group (Sunstein 73). Finally, when individuals’ views are corroborated by peers, they can gain the confidence to introduce more extreme views (Sunstein 74). Since members of homogenous groups are unlikely to view their beliefs negatively, they tend to explore their common ground with other members—even when more extreme views are introduced—rather than critically examining opposing views (Sunstein 74).

Cyberpolarization is the manifestation of this phenomenon in online groups. Social media in particular intensifies cyberpolarization because these platforms facilitate the easy formation of ideologically homogeneous groups via content-filtering features like hashtags (Sunstein 80). While such features improve platform functionality by preserving subject-specific discussions and making them easily accessible, they also prevent users from thinking critically about their beliefs (Sunstein 81). Users can leverage these features to shield themselves from viewpoints contrary to their own. Their viewpoints transition from abstract, with subscribers scattered across borders, to tangible social groups with direction, even if that direction is opposed to another ideology. They can categorize and exclude others without familiarizing themselves with their beliefs at all.

Cyberpolarizations means that users do not normally encounter new ideas spontaneously, as they might have in a pre-Internet age. However, online groups tend to isolate themselves from

opposing viewpoints and therefore they do not encounter new ideas spontaneously. Sunstein refers to the spontaneous discovery of new ideas as serendipity; despite their variety, social networking sites create a limited argument pool that causes people to formulate a conception of society that does not match reality (Sunstein 79). A group's identity is formed in relation to other groups and therefore a lack of serendipity can create more social conflicts (Sunstein 80). The less users' views are challenged by opposing viewpoints, the more extreme their views can become. At the level of the group, cyberpolarization produces social conflict; that is, an intergroup competition concerning which group's views are superior and therefore deserve actualization (Oberschall 291). Groups are more likely to conflict when they see their views as clearly opposed (e.g., when groups are more homogeneous), when their views are more extreme, and when group members are uncritically attached to their beliefs. Thus, the ideology of a group is defined more as what it stands against than any positive values it stands for;

In turn, the actualization of a group's values within society grants that group moral authority. For example, groups who support government intervention concerning climate change will gain moral authority because their views are shown to be generally popular. People want their reality to confirm their beliefs and values; this is what causes conservatives to consume conservative media and voluntarily join cyber groups that support their beliefs (Sunstein 74). However, it is important to recognize that group polarization features moral undertones. Groups whose views prevail are not just empirically correct, they are morally superior to other groups (Oberschall 293). Therefore, the moral ideology of society as a whole is determined by which groups gain popular support.

Marxist definitions of ideology position it as the means through which groups maintain social control and dominance. The group whose views prevail in online and off-line discourses, in both offline discourse and on social media, is the "ruling intellectual force" (Augoustinos 297). In this paradigm, "ideology" is synonymous with falsity because it is the product of those in power creating and enforcing social rules and expectations, not some set of objective moral facts (Augoustinos 298). In the context of cyberpolarization, polarized groups can come to hold beliefs that are false, yet seem true within their group because the authorities of the group have made them seem so. If I run a popular "flat earth" conspiracy account on social media, I might be able to convince my followers that NASA footage of the Earth from space is photoshopped. Whether or not my claim is true does not matter to the group; as they already have beliefs that align with my claim, the group members are likely to accept my intellectual authority. This creates mistrust between groups; NASA might have nefarious reasons for concealing the truth. In turn, group members have no incentive to interrogate their views, and will accept false claims if they expect that they are perceived to be in the interest of the group.

Ideology plays an important role in cyberpolarization and group's views are informed by the power structures that affect them, including power structures within their own group (Augoustinos 302). Group members who are more confident in their beliefs can also lobby for the consideration of their views by the group and present arguments to persuade their peers to adopt these views. Such "moral entrepreneurs" can take on leadership roles within the group, even if their views are extreme relative to the group's initial positions, because moral entrepreneurs gain authority based on the approval of group members, not on the veracity of their views (Becker 169). Although these leaders may be spreading untrue information, they believe that they are helping others to better situate themselves within society. Even normative changes facilitated by a moral entrepreneur in the group are intended to create more "correct" moral conditions in the group (Becker 170). If someone on social media makes a statement about racial inequality directed towards their peers, it is because they believe that the views of their peers are in some way flawed and could benefit from a new moral perspective. As Sunstein explains, the ideology of a group is made to seem natural and real within the echochamber of



the group; this example would function the same way if the group in question was a white supremacist group (Sunstein 69).

Cyberpolarization is problematic because it can intensify social conflict between groups by radicalizing people's ideological values or by making that unfactual information seem factual because it was delivered via a moral authority. If the group gains social control, their ideology may better society, or else severely harm the groups that oppose them. Cyberpolarization enabled US President Donald Trump to use social media to win support from the Republican party, to the detriment of other social groups that expected he would deliver on his promises to build a wall or implement travel bans (Sunstein 83). This example demonstrates how cyberpolarization can have real impacts over who in society is afforded power and agency.

According to Sunstein we have a moral duty to protect serendipity. We should voluntarily expose ourselves to different ideologies in order to encounter them without conflict, prevent our own radicalization, and force ourselves to criticize our own beliefs and the authorities they come from (Sunstein 97). If we do not do this independently, social media might benefit from deliberately "depolarizing" groups, so that people can be made to tolerate political and ideological positions they do not themselves hold (Sunstein 91). For example, Youtube's algorithm would no longer select video suggestions solely based on my interests. However, as Sunstein observes, trying to correct the biases of social groups by exposing people to diverse media sources can increase rather than decrease polarization.

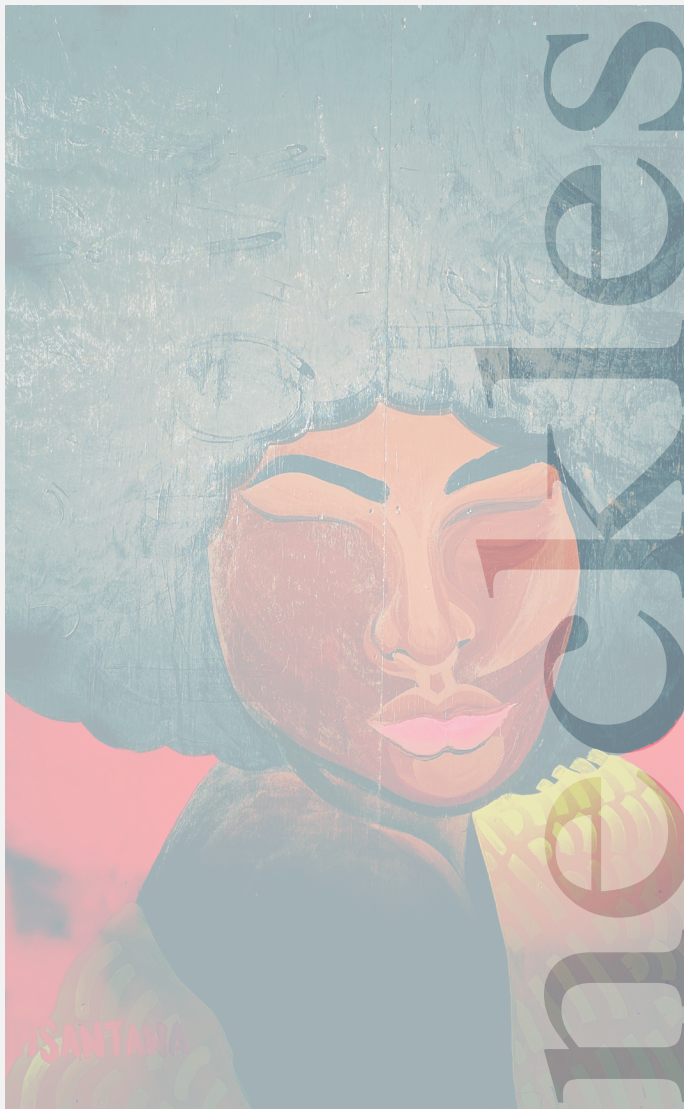
Some forms of polarization are just and can unite groups against threats from oppressive powers in society. People can be moved to polarization when their interests are threatened. For example, someone in the LGBTQ+ community has an interest in protecting same sex civil unions. When positioned in contention with a group who does not support LGBTQ+ rights, an individual might seek validation amongst members of their own group in order to reconfirm their rights as a member of society. In this way, it can be beneficial for members of a group to consume content related to their own ideology and filter out opposing views that threaten their personal security. Thus, we should not view cyberpolarization as necessarily harmful: social conflict of this kind can actually encourage moral progress within society.

One way to address cyberpolarization is by educating the public about how social media filters information and how this affects group dynamics in society. Instead of trying to persuade people towards more centrist positions through forced "serendipity", we ought to acknowledge our personal biases and create social standards that prioritize the formation of ideologies. Public education campaigns could include public service announcements and updated school curriculums around media literacy and skepticism. This would create public discourse around the harms of group polarization (CBC Radio). When people become aware of their personal biases and beliefs, they become more tolerant of opposing ideologies. Whether or not those ideologies are grounded in fact, tolerance enables groups to interact rather than isolate themselves.

Cyberpolarization can exacerbate social tensions and produce conflict by limiting group members' abilities to encounter a wide range of perspectives and by positioning groups as opposed to one another. When specific groups accept radicalized ideology within their group setting, they accept the moral authority of that ideology without interrogating their beliefs thoroughly. Individuals can engineer ideal moral conditions in their group whether or not their beliefs are justified. As I suggested, though, many of the harmful effects of cyberpolarization can be counteracted by public education efforts regarding social media literacy and the potential for radicalization within online groups. At the same time, we cannot unilaterally condemn cyberpolarization, as it can spur social movements that promote moral progress within society.

## References

- Augoustinos, Martha. "Ideology, False Consciousness and Psychology." *Theory & Psychology*, vol. 9, no. 3, 1999, pp. 295–312., doi:10.1177/0959354399093002.
- Becker, Howard S. "Moral Entrepreneurs." *Cultural Criminology*, 1963, pp. 169–170., doi:10.4324/9781315095202-2.
- Oberschall, Anthony. "Theories of Social Conflict." *Annual Review of Sociology*, vol. 4, no. 1, 1978, pp. 291–315., doi:10.1146/annurev.so.04.080178.001451.
- Sunstein, Cass R. "Polarization." *#Republic: Divided Democracy in the Age of Social Media*. E-book. Princeton University Press, 2017.
- The North American House Hippo Is Back - and Ready to Tackle Fake News | CBC Radio." *CBCnews*, CBC/Radio Canada, 4 Oct. 2019, [www.cbc.ca/radio/day6/trump-s-odds-for-re-election-house-hippos-are-back-empire-strikes-door-bahamas-tourism-after-dorian-more-1.5306553/the-north-american-house-hippo-is-back-and-ready-to-tackle-fake-news-1.5306562](http://www.cbc.ca/radio/day6/trump-s-odds-for-re-election-house-hippos-are-back-empire-strikes-door-bahamas-tourism-after-dorian-more-1.5306553/the-north-american-house-hippo-is-back-and-ready-to-tackle-fake-news-1.5306562).



## Foxy Brown: The Intersectionality of Black Womanhood

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Blaxploitation films have been a topic of contention amongst the African American community for almost 50 years. According to Ed Guerrero, “Blaxploitation” refers to “the sixty or so Hollywood films that centred on black narratives, featured black casts playing out various action-adventures in the ghetto, and were released roughly between 1969 and 1974” (70). Although some people praise these movies for their innovative representations of Black people, others denigrate the genre as regressive and stereotypical. Jack Hill’s *Foxy Brown* (1974) complicates this latter contention through the inclusion of a female protagonist, the film’s titular heroine. In this essay, I will argue that while *Foxy Brown* does contain stereotypical representations of Black culture, Foxy Brown is simultaneously presented as a heroine who takes revenge on her abusers. I argue that this revenge is ultimately liberating in that it is inspired by Black women’s historical mistreatment and presents the often overlooked female role in the fight for Black liberation.

Blaxploitation films must be understood within the broader history of African Americans’ identity in the United States. African Americans were enslaved under the Transatlantic Slave Trade, where they were subjugated under white masters and treated as property rather than as people. An enslaved person was deemed “no more a ‘reasonable being’ than a horse or [a] table” (Fehrenbacher 6). Despite the devaluation of enslaved people under these institutions, their labour was integral to the construction of the capitalist nation-state in which they resided. It was this “slave production of staple crops” that “dominated southern agriculture and eminently suited the development of a national market economy” (15). While this system of enslavement was abolished after the American Civil War via the 13th Amendment to the Constitution, the system of racial oppression was not dismantled. Racist attitudes towards Black people have persisted and, as such, are clearly reflected in film media (Zhang xii). Novotny Lawrence writes: “[C]onsidered inferior by the white majority, blacks were depicted as such in films,” and, therefore, “early film titles . . . reinforced prevalent racist attitudes” (1). Lawrence cites *The Birth of a Nation* (1915) as an infamous example of such a film. This film “outraged both African Americans and liberal whites alike” due to its “ludicrous portrayal of blacks” (1).

As Guerrero observes, Blaxploitation films “were made possible by the rising political and social consciousness of black people” (70). The 1960s in particular marked a period of unrest among African

Americans in response to both the Vietnam War and ongoing discrimination in the United States. Hall notes that in 1966 the Black Panther Party “demanded that all African Americans be exempted from military service,” stating that they “refused to ‘fight and kill other people of color who, like black people, are being victimized by the white racist government in America’” (1). The Civil Rights Movement of the 1960s, which responded to many of these tensions, was “a long and large-scaled popular social movement staged by African Americans” to fight for the “rights, privileges and immunities citizens are endowed with to get equally involved in social affairs in accordance with the law” (Zhang xii). These rights included “equal access to public buildings and facilities, the right to seek equal protection in civil and criminal cases, equal opportunities to be educated, and so on” (xii). Just as racist attitudes within the white majority were reflected in the films that they created, the increasing political and social consciousness of African Americans led to the rise of Blaxploitation films.

Despite their origins in civil rights activism, Blaxploitation films do not simply stand as an antidote to anti-Black representations in popular media. Many have argued that these films perpetuate racist stereotypes. As Guerrero notes, the emergent militant “Black Power rebellion . . . laid siege to the civil rights movement” by calling for “more human and complex representation of blacks on screen” (84). Blaxploitation films were condemned for setting their plots in “the romanticized confines of the ghetto or inner city, . . . gratuitous sex and drugs,” and “excessive violence” (Guerrero 94; Lawrence 14). *Foxy Brown* employs many of these stereotypes. The film is rife with drug use and sexual and physical violence. Foxy’s brother, Link, is directly involved with a drug syndicate, and Foxy also unwittingly involves herself therewith. Most shockingly, Foxy is the victim of physical torture and rape. However, I argue that these images should not be interpreted as endorsements of such practices so much as responses to their historical prevalence. As Guerrero observes, “Blaxploitation might as easily and accurately describe the cruel injustice of slavery or, for that matter, much of the historical sojourn of black folk in America” (70). As I will show, *Foxy Brown* attempts to combat the legacy of the historical oppression of Black people and, in particular, Black women.

Most critically, the depiction of Foxy in *Foxy Brown* deviates quite drastically from the typical representations of women—especially Black women—in mainstream Hollywood cinema. Foxy

differs from, for example, docile female characters like Hattie McDaniel’s Mammy in *Gone with the Wind* (1939), who perpetuates “Hollywood’s conservative ideology” (Guerrero 77). Foxy is not a damsel-in-distress who waits to be rescued; instead, she works to save both herself and others. When Foxy is first introduced in the film speeding down the street in her convertible to protect Link from a drug syndicate member bent on his demise. This introductory scene establishes Foxy as a powerful character, and this image of her remains in the mind of the viewers throughout the film. Here, Foxy is shown to be a woman who is not only saving a man, but saving a Black man from a white man.

Foxy takes on the role of saviour for the Black men in her life. The saviour of men who do not reciprocate this nurturing in turn during their time on-screen. This relationship allegorizes the position of African American women within the Civil Rights Movement. During the Civil Rights Movement, Black women “were foot soldiers in sit-in, pray-in, and stand-in campaigns” and “were crucial as grassroots and organizational leaders” (Glasrud and Pitre 1). However, Black women were rarely “quoted in the media or consulted by white politicians” regarding their participation in the Civil Rights Movement, and their work was often overlooked (1). Released in 1974, the same year that the Civil Rights Movement is generally acknowledged to have ended, *Foxy Brown* addresses this erasure: it draws attention to the role of Black women in the collective liberation of Black people by foregrounding Foxy’s role as a saviour. That the protection Foxy offers is not reciprocated in turn by the Black men whom she rescues speaks to the ways in which Black men have often forgotten the contributions of Black women to these movements, especially for the sake of attempting to approximate themselves to whiteness and power.

The dynamic *Foxy Brown* creates between white women and Black women is pertinent to Foxy’s intersectional identity. Critically, the binary nature of mainstream thinking regarding identity has often led to the exclusion of Black women from the definition of personhood, with femininity being conflated with whiteness. As Kimberlé Crenshaw, the scholar who originated the term “intersectionality,” observes, “the experiences of women of color are frequently the product of intersecting patterns of racism and sexism and . . . these experiences tend not to be represented within the discourses of either feminism or antiracism” (1243-44). In other words, feminist narratives tend to focalize white women, whereas anti-racist narratives tend to focalize Black



men. These tendencies uniquely disempower Black women, who hold neither the privilege of whiteness that white women do nor the privilege of maleness that Black men do. These dynamics also appear in *Foxy Brown*. Link, for example, is in an intimate relationship with a white woman and frequently privileges her time and feelings over his own sister's. More crucially, Kathryn, the leader of the drug syndicate that victimizes Foxy, is a white woman. The power that the film gives white women like Kathryn is a recognition of the power that white women possess because of their statusful womanhood. In fact, despite being murdered by members of the syndicate, Link's girlfriend is treated with more consideration by her murderers than Foxy is by her assailants, who are members of the same organization. After both Link and his girlfriend are murdered, one murderer comments that Link's girlfriend's death is a shame because of her beauty. The fragility that tends to be attributed to white womanhood, suggested here, creates a unique power dynamic. This is especially obvious given the film's characterization of Kathryn. While Kathryn appears relatively harmless despite being the leader of a drug syndicate, she is ultimately revealed to be even more sadistic than her male counterparts: Kathryn is typically responsible for the violence enacted upon Foxy.

The power dynamic and the stereotypical representations of Black people in Blaxploitation films is evident when Foxy is sexually and physically assaulted. These instances foreground the continued violence that Black women face in the real world. While Link, Link's girlfriend, and Foxy's boyfriend come to violent ends, their deaths are swift and, in the case of Link's girlfriend, are performed with some semblance of regret. By contrast, Foxy's abuse is protracted and decidedly more exploitative. Guerrero summarizes this abuse stating that Foxy is "tortured, then drugged and raped by two white sadists in a sequence that pointedly evokes memories of the black woman's plight under slavery, replete with a soundtrack of country banjo music and Foxy lashed with a bullwhip" (99). Foxy's abuse, then, alludes to the violence enslaved Black women experienced during the Transatlantic Slave Trade. As Danielle L. McGuire observes, "the sexual exploitation of black women by white men had its roots in slavery and continued throughout the better part of the twentieth century" (xviii). The gory and discomfiting images of Foxy being so shamelessly abused by her assailants thus speaks to the treatment that Black women did and continue to face. In turn, when Foxy is a victim of rape and is abandoned by the film's other characters

the filmmaker asserts that Black women have historically been disregarded in conversations about rape. As Crenshaw notes, "the primary beneficiaries of policies . . . concerned about rape tend to be white women," while "the primary beneficiaries of the Black community's concern over racism and rape [tend to be] Black men" (1269). Moreover, just as "African-American victims of rape are the least likely to be believed," while their rapists' punishments tend to be meagre if they are punished at all, Foxy escapes her situation due to her wit and will, not the assistance of other characters (1269).

Foxy single-handedly takes her revenge upon the drug syndicate that has caused her such hardship. *Foxy Brown* begins with Foxy begins saving others, and ends when she saves herself. Importantly, Foxy maintains that "her cause is not personal revenge but justice for all black people" (Guerrero 99). This line indicates that Foxy stands as the key to the liberation of her entire community. Just as Black women have played an invaluable role in improving the sociopolitical atmosphere of and for Black people while simultaneously being uniquely oppressed, Foxy emerges from her trauma in order to provide justice for her community. Importantly, Foxy enlists the help of "black militant brothers to join her fight" (99). The Black Power movement, then, is directly implicated in Foxy's journey of liberation, further extending the parallels between historical Black collective action and the story's narrative. As the film nears its end, "Foxy and her militant crew capture the film's chief white gangster and castrate him, after which Foxy personally delivers his private parts in a pickle jar to his girlfriend, the head of the organization" (99). The act of castrating this gangster and delivering the evidence to Kathryn is a direct response to the sexual abuse of Foxy: the body part that caused her trauma is severed and delivered to the person who orchestrated the events that led to this subjugation. While she is irreversibly altered by the trauma she has undergone, Foxy nonetheless emerges victorious.

*Foxy Brown* foregrounds its origin as a Blaxploitation film, featuring stereotypical images of Black people that draw on the continued exploitation of Black people in the United States. At the same time, though, Foxy's characterization—in particular, her identity as a Black woman—allows the film to foreground narratives of Black liberation in ways that are historically accurate and holistically presented. *Foxy Brown*, then, offers a more nuanced representation of the Black experience than might seem to be the case. In doing so, the film makes the case for Blaxploitation films as films of merit.

## References

- Crenshaw, Kimberlé. "Mapping the Margins: Intersectionality, Identity Politics, and Violence against Women of Color." *Stanford Law Review*, vol. 43, no. 6, July 1991, p. 1241-1300. *HeinOnline*, <https://heinonline.org/HOL/P?h=hein.journals/stflr43&i=1260>.
- Fehrenbacher, Don Edward. *The Slaveholding Republic: An Account of the United States Government's Relations to Slavery*. Oxford UP, 2005.
- Glasrud, Bruce A., and Merline Pitre. *Southern Black Women in the Modern Civil Rights Movement*. Texas A&M UP, 2013.
- Guerrero, Ed. "The Rise and Fall of Blaxploitation." *Framing Blackness: the African American Image in Film*, Temple UP, 1993, pp. 69–111.
- Hall, Simon. *Peace and Freedom: The Civil Rights and Antiwar Movements of the 1960s*. U of Pennsylvania P, 2006.
- Lawrence, Novotny. *Blaxploitation Films of the 1970s: Blackness and Genre*. Routledge, 2012.
- McGuire, Danielle L. *At the Dark End of the Street: Black Women, Rape, and Resistance: A New History of the Civil Rights Movement from Rosa Parks to the Rise of Black Power*. Knopf, 2011.
- Zhang, Ai-Min. *Origins of the African-American Civil Rights Movement*. Routledge, 2016.

# Coyote, Christianity, & Colonialism in Sheila Watson's *The Double Hook*

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Sheila Watson

*the Double Hook*

Sheila Watson's Coyote from *The Double Hook* is heavily influenced by the trickster figure in Indigenous lore and is crafted through the perspective of the white settler (Goldman, "Coyote's Children" 53). Scholars such as Leslie Monkman argued that Coyote serves as a "Satanic opposition" to the "Old Testament Jehovah", whereas Steven Putzel argues that Coyote is more aligned with Jehovah in the Old Testament (Monkman 71, Putzel 13). Marlene Goldman contends that Coyote is a ghost of an Indigenous past; a ghost who is roaming a land that has been invaded by settlers ("Coyote's Children" 55). Watson paints Coyote as a God-like figure by drawing on biblical phrases and themes in the narration and Coyote's dialogue from the first page of the novel. The portrayal of Coyote in *The Double Hook* mirrors the cultural assimilation that Indigenous people in Canada have experienced through forced adoption of white settlers' values and beliefs (Spielberger 615). The human characters that Coyote oversees are primarily white settlers as well, and Coyote as the God of the valley has adapted to their beliefs. Coyote in *The Double Hook* plays a God-like role over the human characters in the novel which is demonstrated by the text's narration, the biblical language spoken by Coyote, and his actions. In doing so, Coyote both illustrates and critiques cultural assimilation and the treatment of Indigenous people in Canada altogether.

A notable hierarchy is immediately established between coyote and the human characters of *The Double Hook*. The characters within the community of the novel are said to be living "under Coyote's eye"; this ultimately

suggests that Coyote is omnipresent to the humans (Watson 3). To be “under...the eye(s) of” is to maintain the “observation” or “attention” of another (“eye, n.1”). Therefore, Coyote is the ultimate overseer and deity for the community in *The Double Hook*. Likewise, the Christian God oversees the activities of the earth and is universally regarded as the supreme deity for that faith. The expression “the eyes of the lord” occurs throughout The Bible and often sees that of both “good” and “evil”, occurring in Proverbs 15:3 as the “eyes of the Lord” are “in every place” (*Authorized King James Version*, Genesis 6:8). *The Double Hook* alludes to this when Ara references “God’s eye” (Watson 7). Moreover, “Under Coyote’s eye” recalls the language used in Proverbs 15:3 which both positions Coyote as the supreme deity in the valley and introduces a possible connection between the Native’s deity and the Christian’s God (Watson 3).

The connection between Coyote and the Christian God is further highlighted in *The Double Hook* through the language that Coyote uses. Throughout the novel, Coyote speaks in a poetic manner that contrasts the prose that comprises the majority of the story. More specifically, Coyote’s poetic voice echoes various lines in the Old Testament. As Coyote cries “my left hand is on her head / my right hand embraces her,” his words reflect the Song of Solomon 2:26 where The Bible reads, “His left hand is under my head, and his right hand embraces me!” (Watson 75, Song of Solomon 2:6). Watson creates a hybrid deity of both the Indigenous Coyote and the Christian God who is equipped to watch over the settler community of *The Double Hook*. While the “God” that the characters speak of is virtually absent from the text, his presence exists through Coyote (Watson 66). Given that Coyote is an Indigenous figure whose dialect includes remnants of the Christian Bible that brought to Canada by European Settlers, he mirrors the assimilation that the Indigenous communities endured through the Residential school system in Canada (“residential school, n.”). The Residential school system focused on the “substitution of Christian ideals” for Indigenous beliefs (“residential school, n.”). Watson has spoken against the Residential school that the children of Dog Creek had attended and commented on how the children were “released” into a community in which “language and culture- religious and social- had been destroyed” (Flahiff 39). She later notes that this was “not completely” obliterated, and that hope is illustrated through Coyote’s animal form (Flahiff 39). Watson was both aware and vocal about the horrors of the Residential school system in Canada,

and specifically British Columbia. As such, Coyote’s adoption of the language in the Old Testament indicates his God-like role in relation to the human characters in *The Double Hook*. In doing so Watson’s knowledge of the impacts of colonialism and the Residential school system in Canada is made evident.

In *The Double Hook*, the figure of Coyote is comparable to the Christian God of the Old Testament in that they both have the power to bring death and “forgetting” (Watson 14). Coyote tempts the human characters in *The Double Hook* by claiming that in his “mouth” is “forgetting” and in his “darkness” is “rest” (Watson 14). This promise mirrors the lines in the Old Testament in which it is stated that “God” has the ability to make someone “forget” their “toil” (Genesis 41:51). In both cases, the two deities can grant humans peace by “forgetting” their turmoil (Watson 14). Moreover, one of the protagonists Kip saw the Coyote “carry” the old lady, James Potter’s mother who was murdered by her son, away in his “mouth” revealing how Coyote “got the old lady at last” (44-45). This passage draws a strong link between Coyote’s “mouth” and death (Watson 44). Similar to Watson’s Coyote, the Christian God is associated with a peaceful afterlife as well through the concept of “Heaven” (Genesis 1:1). The line “got the old lady at last” from *The Double Hook* is similar to the concept introduced in the Old Testament about Enoch’s death and how “God took him” (Genesis 5:14). In short, Watson’s Coyote resembles the Christian God, the Old Testament Jehovah, in the promises they make to their children and their ability to bring death.

Watson’s Coyote resembles a God-like role of an absent Christian God in relation to the human characters in *The Double Hook*. Practices of Christianity are central within the community of *The Double Hook* as evidenced in the recurrent mentions of God. Ara reveals that her perception of “God” is one that would come after “you with a whip” until you “face him” (Watson 66). The Widow repeats the words “Dear God” and further mentions that “God” would “judge” her (Watson 55, 69). God does not seem to meddle in the lives of these characters, nor does he make a physical appearance at any time in the novel. Instead, Coyote takes on this role. Coyote, however, is an Indigenous deity and the characters in the valley are primarily European, Christian settlers. This is highlighted when William refers to Coyote as the “Indian’s Coyote” (Watson 66). That said, Coyote’s people have been displaced because of Canada’s colonial past and they now live in the “Indian reservation” that James visits upon leaving the valley (Watson 81). For that reason, Coyote is



left to watch over the settlers rather than his own people. Consequently, Coyote's language and actions are influenced by Christianity because those are the values held by the European settlers for whom he plays God. Coyote transforming into God is not unlike the depiction of Coyote in Indigenous lore as he is known as a "shape-shifter" (Robinson, "Trickster"). Rather than shapeshifting his appearance, Coyote in *The Double Hook* alters his behavior and choice of words to reflect the culture of his humans. The prominent religion practiced by the human characters in *The Double Hook* is Christianity due to Canada's colonial past and the displacement of Coyote's people from their land to "Indian reservations" (Watson 81). The "God" that the characters refer to throughout the novel is missing because the land that this story takes place in belongs to Coyote (Watson 66). Under these circumstances, Coyote, as the "God" of this community, begins to adopt the Christian language and behaviors of their deity (Watson 66).

The Indigenous figure of Coyote and the Christian God share many similarities, but they are ultimately still separate beings in *The Double Hook*. An alternative way of understanding Coyote's role in the novel is through the lens of comparative mythology which aims to compare the "myths" from a "wide variety of cultures" (Littleton 32). Using this theory, one may argue that Coyote adopts the language of the Old Testament and behaves like Jehovah because they are the same deity. Doing so however, would ignore another example of comparative mythology as Monkman's analysis claims Coyote could be the "satanic opposition" to Jehovah (71). This leads to an overarching argument that Christianity is the superior belief because Watson's Coyote painted Indigenous lore in a negative and satanic light. This path of logic does not seem to align with Watson's values, considering her opposition to the mistreatment of Indigenous people in Canada (Goldman, "Ethics" 206). In fact, in a letter to Emily Carr, Watson even shared that "too much is being lost of the spirit that is Native to British Columbia" (Goldman, "Ethics" 206). Therefore, it is likely that Watson's argument in *The Double Hook* would be in favour of preserving British Columbia's Indigenous lore. However, this reading overlooks the power dynamic between the two mythologies. Christianity is regarded as the "dominant" religion in the world and was introduced to Canada by European settlers who later worked to force the assimilation of Indigenous people ("residential school, n."; "Christianity, n."). Given this power dynamic Christianity has more power than Indigenous lore. Suggesting that the two deities

are merged would disregard this dynamic and the atrocities that have occurred because of it. Watson's *The Double Hook* is concerned with the implications of colonialism, and an analysis of Coyote that takes on a comparative mythologies approach would contradict that message.

Sheila Watson's *The Double Hook* is rooted in religion. The novel features both subtle and explicit elements of Christian and Indigenous lore. In the case of the figure of Coyote, Watson directly combines the two traditions to highlight the implications of colonialism on one particular community in British Columbia. From the very beginning of the novel, Coyote is established as a God-like figure who watches over the human characters. Not only does Coyote take on a God-like role, but he adopts similar characteristics of the Old Testament Jehovah as well. Coyote has taken on these Christian attributes as a result of displacement and cultural assimilation of Indigenous people in Canada due to colonialism. Consequently, Coyote is playing God for a white settler community. While it is important to be aware of Watson as a white settler herself writing about Indigenous lore, she is ultimately against the way Indigenous people have been treated in Canada. The figure of Coyote in Sheila Watson's *The Double Hook* is consequential to the novel as a whole, not only because of the God-like role he plays in relation to the human characters, but because his presence sheds light on the negative impacts of colonialism in British Columbia and all of Canada.

## References

- "Christianity, n." *OED Online*, Oxford University Press, June 2020, [www.oed.com/view/Entry/32458](http://www.oed.com/view/Entry/32458). Accessed 15 June 2020.
- "eye, n.1" *OED Online*, Oxford University Press, May 2020, <https://www-oed-com.myaccess.library.utoronto.ca/view/Entry/67296?rskey=Wuh6LC&result=1#eid>. Accessed 25 May 2020.
- Flahiff, F.T. *Always Someone to Kill the Doves: A Life of Sheila Watson*. Vancouver, NeWest Press, 2005.
- Goldman, Marlene. "Coyote's Children and the Canadian Gothic: Sheila Watson's *The Double Hook* and Gail Anderson-Dargatz's *The Cure for Death by Lightning*." In *Unsettled remains: Canadian Literature and the Postcolonial Gothic*. Edited by Turcotte, Gerry and Sugars, Cynthia. Wilfrid Laurier University Press,

- 2009, 51-74.
- Goldman, Marlene. "Ethics, Spectres, and Formalism in Sheila Watson's *The Double Hook*." *English Studies in Canada*, vol. 33 no. 1, 2007, 189-208.
- Littleton, C. Scott. *The New Comparative Mythology*. Los Angeles, University of California Press, 1973.
- Monkman, Leslie. "Coyote as Trickster in *The Double Hook*." *Canadian Literature Quarterly*, no. 52, 1972, 70-76.
- Putzel, Steven. "Under Coyote's Eye: Indian Tales in Sheila Watson's *The Double Hook*". no. 108, *Canadian Literature Quarterly*, 1984, 7-16
- "residential school, n." *OED Online*, Oxford University Press, June 2020, [www.oed.com/view/Entry/163570](http://www.oed.com/view/Entry/163570). Accessed 14 June 2020.
- Robinson, Amanda. "Trickster". *The Canadian Encyclopedia*. <https://www.thecanadianencyclopedia.ca/en/article/trickster>. Accessed 15 June 2020.
- Spielberger, Charles. *Encyclopedia of Applied Psychology*. New York Academic Press, 2004.
- The Bible*. Authorized King James Version, Intellectual Reserve, Inc., 2013.
- Watson, Sheila. *The Double Hook*. Penguin Random House Canada, 1959.

# Something Happens: Tsai Ming-Liang's Transformative Stasis

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“The ideology of speed, like the inescapable car advertisements on our multimedia screens, has become the mainstay of modern consciousness,” (4) laments Song Hwee Lim in his introduction to *Tsai Ming-liang: A Cinema of Slowness*, a love letter to both his favourite director and the beauty of slowness. Lim’s book is a eulogy to a more leisurely existence, something he believes grows increasingly extinct in the hustle of modern-day society. The text highlights slow cinema as one of the last vestiges of a more meditative lifestyle. Slow cinema, a subgenre of the art film, is a minimalist form, defined by long takes, and de-prioritization of the narrative. Undeniably, it is not for everyone.

In a notorious *Sight & Sound* article published in 2010, Nick James confessed his concerns over the rise of slow cinema and its dominance over many festival circuits. He insists that slow cinema draws “on your stoic patience and the fascination in your gaze [...] Such films are passive-aggressive in that they demand great swathes of our precious time to achieve quite fleeting and slender aesthetic and political effects” (James, “Passive Aggressive”). For James, slow cinema is inactive storytelling. Creating meaning becomes the task of the spectator rather than the obligation of the filmmaker. For James, slow cinema is “passive-aggressive” in its reluctance to help the viewer, instead of indulging in the deliberately alienating style of stillness. Much of slow cinema revolves around this idea of stillness, which is a general resistance to the fast-paced editing and narrative movements of Hollywood filmmaking. Stillness is perhaps best exemplified by the works of Taiwanese slow cinema filmmaker Tsai Ming-liang.

Tsai’s films often embody absolute stillness. His camera lingers on static bodies with few movements or cuts, exhibiting stasis through narrative,





camerawork, and blocking of performers. Alternately, many of Tsai's slow cinema contemporaries, such as Béla Tarr or Lav Diaz, frequently rely on long takes, shot handheld, as the camera follows walking figures. Though Diaz and Tarr avoid conventional narrative development, their "slow cinema" is nonetheless kinetic and full of movement. They exhibit stillness in the narrative only. Tsai's movies, however, are fully devoted to physical inaction, telling stories about slow-moving or motionless bodies through fixed camera angles. Inaction becomes the cornerstone of his storytelling and his instrument for emotional expression. In this essay, I argue that, in Tsai's cinematic, emotional arcs unfold through inaction, revealing the transformative powers of stasis. Using three of his movies (*Journey to the West*, *The Wayward Cloud*, and *Stray Dogs*), I will outline how each of them creates emotional arcs through stillness rather than motion. First, I will analyze how stasis shifts *Journey to the West*'s tedium into comedy. Then, I will explore how stasis performs the opposite task in *The Wayward Cloud*, transforming a tone of absurd comedy into one of seriousness and despair. Finally, I will express how *Stray Dogs* uses the stasis to establish an emotional bond between spectators and the on-screen action.

André Bazin makes a classic distinction between "filmmakers who put their faith in the image and those who put their faith in reality" (Bazin 88). Naturally, Tsai belongs in the latter group, a camp populated by silent-era auteurs like Erich von Stroheim and Robert Flaherty. Bazin highlights the impact of putting faith in reality by analyzing the hunting scene from Flaherty's *Nanook of the North*:

Flaherty simply *shows us* the wait. The length of the hunt is the very substance of the image, its true subject. In the film, this episode is thus composed in only one shot. Can anyone deny that it is much more moving as a result than a montage of attractions would have been? (Bazin 91) Similarly, in regard to von Stroheim's cinema, Bazin believes that "his *mise-en-scène* is simple: if you look at the world closely and insistently enough it will end up revealing its cruelty and ugliness" (Bazin 92). Power rests in the prolonged act of looking. For both Flaherty and von Stroheim, emotion and meaning emerge through the camera's uninterrupted gaze. Tsai follows in their tradition, using stillness to document reality and broadcast gradual change to the audience.

The transformative powers of stasis are on full display in *Journey to the West*, Tsai's sixth addition to his *Walker* series: an eight-film saga about a Buddhist monk who walks through populated streets at a glacial

pace. The movie is an ode to slowness, capturing the monk's almost unnoticeable movements in extended wide shots. Gradually, the monk descends one of two parallel stone staircases. The stairwell is crowded. Bodies are consistently hurrying up and down the steps. The monk's slow pace, however, prevents anyone from passing him. As a result, all the traffic segregates to the left staircase, leaving the monk alone on the right side.

The shot continues as described for fourteen minutes. However, what begins as monotonous, if not peaceful, becomes increasingly comedic. The scene remains static as the flow of bodies continues. Still, the monk proceeds with his descent, entirely unaware of his surroundings. Tsai's reluctance to offer narrative interruption or relief in the form of a cut produces ironic humour: a comedy that seems to contradict spectators' expectations and desires. Something which is initially humourless becomes funny through prolongment and absolute dedication to a non-joke. This approach marks a more subversive style of comedy, reminiscent of Jerry Lewis's bizarre, anti-humour slapstick. Lewis's *Smorgasboard* devotes an entire six minutes to a gag involving Lewis skidding across the surface of a slippery floor. At first, Lewis's tripping is hardly funny. However, the humour eventually emerges through the unrelenting dedication to a humourless act. As the scene unfolds with no change in narrative, Lewis's sheer rejection of audience pleasure paradoxically sparks its own form of ironic comedy.

On the surface, images like a man repeatedly tripping or a monk slowly descending a staircase should not be funny. Yet somehow these antithetical means produce comedy. To grasp what makes these moments funny requires an understanding of, fundamentally, where humour spawns from. For Sigmund Freud, humour emerges when effect is withdrawn:

[The viewer] sees that other person in a situation which suggests that he is about to produce the signs of an affect; he will get annoyed, complain, express pain, be startled or frightened, perhaps even show despair, and the viewer or listener is prepared to follow him in this, and allow the same emotional impulses to arise in himself. But this emotional readiness is disappointed, the other party is not in fact expressing an affect, but making a joke; the saved emotional expenditure on the part of the listener now becomes the pleasure of humour. (Freud 561) and character, transitioning from monotony to comedy through stillness.



Tsai showcases a vastly different sense of humour. For Freud, the pleasure of comedy arises when a spectator is not expected to share an affect with the subject they observe. In *Smorgasbord*, the viewer is not intended to empathize with Lewis as he tumbles down over and over; the audience is entirely disconnected from his pain and, as a result, finds comedy in his suffering. Similarly, in *Journey to the West*, the spectator is not included in the monk's meditative practice. The viewer is not expected to share his peace of mind; the film deliberately depicts his behaviour as alienating. With that, Tsai emphasizes the audience's exteriority to the events on-screen, sparking laughter through the absence of empathy.

*Journey to the West's* staircase scene is difficult to watch, hinging on a single joke: the passersby self-designating to the left staircase, which remains unblocked by the monk. Like with Lewis, stasis becomes a means for comedy, using the lack of development to inflate a not-so-funny joke until it bursts, achieving comedy through the absence of aesthetic variation. *Journey to the West* dwells on the disconnect between the spectator in *The Wayward Cloud*, his absurdist sex-comedy. The film is far more bombastic than *Journey to the West*; a final-act music number follows a man dressed as a phallus as he is pursued by women wearing buckets over their heads and mini-toilet plungers over their breasts. Nonetheless, *The Wayward Cloud* still relies on stillness to reveal tonal shifts and emotional arcs.

The movie, a quasi-sequel to Tsai's *What Time Is It There?*, is a deranged and semen-soaked rom-com-musical set during a Taiwanese water shortage. The absence of water sends the population into a watermelon frenzy, inciting a period of fruit worship reminiscent of the mango mania of Mao's China. Watermelon becomes everything. The protagonists, Hsiao-kang and Shiang-chyi, guzzle it, play with it, and, in Hsiao-kang's case, even fuck with it. The movie follows their love affair through the draught, as Hsiao-kang tries to conceal his secret career as an adult film star from her. Unfortunately, his draining work as a pornstar makes him incapable of sharing physical intimacy with Shiang-chyi.

In the movie's unforgettable final scene, Hsiao-kang's pornographer employers instruct him to rape an unconscious woman while they film. Shiang-chyi watches on through a window as her lover reveals his true identity. Rather than express disgust, however, Shiang-chyi begins to moan, simulating sounds of arousal, as if to trade places with the unconscious woman. The harrowing moment is abruptly disrupted when—a second before ejaculation—Hsiao-kang

leaps away from the unconscious woman and sticks his penis through the window, climaxing into Shiang-chyi's mouth. The ejaculation is outrageous, a kind of sexually ostentatious display largely absent from Slow Cinema. Tsai presents it as a romantic impulse, like something out of a Hollywood romantic comedy. It recalls the genre's grand, climactic declarations of love, like Harry sprinting through the streets of New York to tell Sally he loves her at the end of *When Harry Met Sally...* Tsai's X-rated perversion of this romantic narrative convention is purely absurd. The film shifts from an act of disturbing sexual violence perpetrated against one body to, suddenly, a comedically outrageous sexual declaration of love offered to another.

After the suddenness of the orgasm, the film turns to stillness, washing away absurdity with the gravity of human despair. For the next few minutes post-ejaculation, Tsai's camera lingers on Hsiao-kang and Shiang-chyi's bodies, locked cock-to-mouth. He examines their features in extreme close-up. Hsiao-kang's bare ass clenches in and out, rivulets of sweat drizzling down his skin. The next shot is a tight, 27-second close-up of his face. The frame is static, and while Hsiao-kang's mouth hangs ajar, he expresses no clear, discernable emotion. Tsai follows it up with a shot of Shiang-chyi, her mouth still frozen around Hsiao-kang's penis. This 84-second shot focuses on her eyes since her mouth is obscured by his pubic hair. Nothing happens during these shots. Their bodies remain essentially static. Tsai's camera films Hsiao-kang and Shiang-chyi in an unnaturally frozen position. They're locked in a state of intimacy, flaccid penis to mouth: a strange position to remain in motionlessly. Tsai's camera lingers on their bodies, emphasizing inaction. Given that so much of contemporary cinema is fast paced, speeding constantly from Point A to Point B, stasis feels jarring. The absence of motion, especially when fixed in a vulnerable post-fellatio position, suggests something is deeply wrong.

Reality comes crashing down, eschewing romantic fantasies as stasis gives the characters a moment to reflect. Impulse and adrenaline fade away, leaving them to ponder the question: *what have we done?* The crushing reality slowly weighs down as they realize their romantic idealism holds no chance of survival in the real world.

*The Wayward Cloud's* stillness is explicitly juxtaposed against the abruptness of the ejaculation. Sudden motion is followed-up by prolonged stasis. This tonal whiplash encourages the spectator to, much like Hsiao-kang and Shiang-chyi themselves,

reflect. When Hsiao-kang unloads into Shiang-chyi's mouth, he also unloads an entire film's dramatic tension. The subsequent stillness steepens itself in catharsis, transitioning absurd sexual exhibitionism to silent meditation. Tsai's camera uses static shots to film static bodies, emphasizing the human reaction to these ostentatious romantic-comedy style declarations of love. The absurdity slowly subsides, shifting the movie into the real world of consequences. These ramifications include Shiang-chyi's revelation that her lover has deceived her and, not only is he a porn star but also now a rapist. As this fact sinks in, the romanticism of the blowjob dissipates, replaced by the burden of reality. In *Journey to the West*, Tsai morphs tedium into comedy through stasis. However, in *The Wayward Cloud*, stasis performs a vastly different function, transitioning absurdist comedy into emotional desperation and tragedy. When Tsai finally cuts to black, after four minutes of motionless bodies, stasis has replaced all comedy with a gaping wound of sadness.

Tsai lingers on his images, forming meaning unavailable through a single glance. The extended length of his shots asks the viewer to consider their own relationship with the film. It is no coincidence that many of his movies involve scenes that emphasize the act of spectatorship. Tsai's *Stray Dogs* often captures static bodies engaged in the act of watching. The film follows an unnamed, homeless and alcoholic father negligently raising his two kids. His children meet a woman working as a likewise unnamed grocery clerk who takes them under her wing. The film is complex, with a deliberately scrambled narrative offering little explicitly causal linkage between scenes. Tsai uses an increasingly incoherent structure to represent poverty as something that strips its victims from their place and time, tossed into a whirlwind of disorder. The film's confusing and deliberately obscure narrative is disorienting to its audience. Jonathan Rosenbaum analyzes this relationship between *Stray Dogs* and its viewers in his short essay "Performing Spectators: The Audience as Stray Dogs":

If Tsai's films typically qualify as questions rather than answers, foremost among the questions is how we perform as *spectators*—a question that we're obliged to pose in relation to all the materials offered. It's hardly coincidental that the longest take in *Stray Dogs*—the penultimate shot, almost 14 minutes long—is of two characters looking at something offscreen (Rosenbaum, "Performing Spectators: The Audience as Stray Dogs").

The shot begins as a long shot, with the father and the woman moving towards the camera. When

they arrive in the foreground, now in close-up, their movement stops, and they stare forward, their eyes locked on a mural out of frame. Tsai rests on their gaze for nearly fourteen minutes. As a result, the shot's prolonged length compels the viewer to reflect on the very concept of spectatorship. A shorter shot would not grant time for such meditations.

*Stray Dogs*' characters achieve a parallel with the viewer, engaged in a state of silent observation. Cinema is a medium of prolonged looking; filmgoers do little more than stare at a screen for a duration of time. *Stray Dogs*' stasis allows the viewer to reflect on their own relationship with cinema, offering a space—specifically, a fourteen minute one—to meditate. Despite the ambiguity of the shot, *Stray Dogs*' ending nonetheless strives to carefully guide the viewer's emotions. It is important to contextualize the shot within the movie's bleak and unsentimental story. At this point in the film, reality has broken down. Truth and dreams are no longer distinguishable from each other. The father has lost everything: his health, his children, and even his sanity. Yet, somehow, in the midst of his complete decline, he manages to become absorbed in something: a work of art.

The viewer is just like the father, finding refuge in images. Initially, it seems peculiar that *Stray Dogs*' characters stare at an object for fourteen minutes. However, such conclusions are, ultimately, hypocritical. As the scene unfolds, the spectator's own actions in the present moment mirror the characters in *Stray Dogs*. The audience is also transfixed in a state of spectatorship, staring forward motionlessly. Tsai creates parallelism between viewer and character. For the father, the mural he fixates on is, at the very least, a distraction from his inevitable doom. For the viewer, the mural represents cinema: an experience embarked on as a digression, leaving life behind to rest in a state of stillness. Whether cinema offers transcendence or simply distraction depends on the specific viewer. But regardless, it is an escape from reality. In this sense, the viewer and the father are united through this stillness, allowing them to share an emotional connection.

In many ways, *Stray Dogs*' form of stillness is the polar opposite of how it is used in *Journey to the West*. In *Journey to the West*, Tsai's stasis creates a disconnect between the spectator and the on-screen events. The movie, dwelling on moments devoid of any affect, produces humour. Yet in *Stray Dogs*, Tsai uses stillness to create a bond between the world of his film and the world his spectators inhabit. Here, stasis breaches the barrier between art and reality, allowing the viewer to create an emotional bond with

the film's images.

The emotional arcs in Tsai's films unfold through stillness rather than motion. In *Journey to the West*, stasis strips the scenes of affect, extracting humour from monotony. *The Wayward Cloud* does the reverse, using stillness to move away from comedy, finding emotional gravity through inaction. With *Stray Dogs*, Tsai's stasis draws parallels between spectator and character, crafting an emotional connection between the two parties. Film viewers like Nick James, who criticize slow cinema as inactive, ignore the complexity of what directors like Tsai accomplish, creating intense tonal transformations without motion. Tsai's transitions are gradual, unfolding invisibly through the images. His cinema is a sensory cinema, broadcasting directly into our emotions and tapping into our own distinct experiences as spectators of art.

### References

- Bazin, André. *What is Cinema?*. Caboose, 2009.
- Freud, Sigmund. *The Penguin Freud Reader*. Penguin, 2006.
- James, Nick. 2010. "Passive Aggressive." *Sight & Sound*.
- Lim, Song Hwee. *Tsai Ming-liang: A Cinema of Slowness*. University of Hawai'i Press, 2014.
- Ming-liang, Tsai. *The Wayward Cloud*. DVD, Strand Releasing Home Video, 2005.
- Ming-liang, Tsai. *Journey to the West*. DVD, Cinema Guild, 2015.
- Ming-liang, Tsai. *Stray Dogs*. DVD, Cinema Guild, 2015.
- Rosenbaum, Jonathan. "Performing Spectators: The Audience as Stray Dogs." Jonathan Rosenbaum, September 6, 2018.



# Surface, Pigment, Image, Light: How Technology and Convention Jointly Function to Create the Illusion of Medium

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In quotidian thought, one does not have trouble discerning a news report from a film, a film from a photograph, or a photograph from a painting. The ontological question of the medium is, therefore, firstly philosophical. Works that ostensibly belong to the same categorical medium, when observed more closely, are substantially heterogeneous. What factors, then, hold together certain sets of works into the categorical containers we call “mediums?” This paper addresses the illusion of medium in two dimensions. Firstly, I will discuss which sorts of material and technology underlie different mediums and allow for their mechanical functioning, as well as the ways in which material technology itself impacts the effect of different mediums. Secondly, I will explore the conventions that are adopted with prevalence by each medium. I will analyze Mark Rothko’s painting “No. 13” and Paul Strand’s photograph “Stairs” to discern how each media object makes use of their technology and which conventions they exhibit. The effects of a medium are constituted by the technology as well as the empirical conventions popular in each type of media. Mediums appear to be discreet, categorical entities but this discreteness is only the illusory effect of both the technology and the artistic conventions that underpin each work.

According to Stanley Cavell, “a medium is something through which or by means of which something specific gets done or said in particular ways” (32). Based on this definition of the term “medium,” Cavell’s “by means of which” category stands as one way to consider the question of medium (32).



The phrase “By means of which” refers to the actual material or technology used to support the “specific” thing “done” or “said” (32) or, in other words, the raw material or technology being used. For example, painting uses some type of pigment or paint applied by an artist, typically with a brush, to some kind of base, often canvas, and non-digital photography uses mirrors and lenses to automatically capture light and image. Walter Benjamin, in his essay “The Work of Art in the Age of its Technological Reproducibility,” asserts two major categorical distinctions based on the raw materials or technology through which art is produced: technologically reproducible art, and non-technologically reproducible. Technologically reproducible works are artworks where there exists no original; endless copies can be produced, such as photography. Non-reproducible artworks have one original that is the “true” work and cannot be proliferated into endless copies. Benjamin, in this essay, details at length the contemporary advent of widespread reproducible art and what the ramifications of this might be on politics, culture, and social life. However, an important feature of his analysis is how technology affects perception. Painting is an example of non-reproducible art. For Benjamin, painting is an art form that has “cult value,” while photography is an art form that has “exhibition value” (104). “Cult value” (104) references what Benjamin describes as the “ritualistic” (105) way in which non-reproducible art functions. Non-reproducible art functions “foremost as an instrument of magic” (107), and is created with a higher entity in mind. An example of this extremely intricate style of art can be found on the ceilings of cathedrals but it is so detailed that it cannot be appreciated by the human eye from so far away. Benjamin writes, “The elk depicted by Stone Age man on the walls of his cave is an instrument of magic, and is exhibited to others only coincidentally; what matters is that the spirits see it” (Benjamin, 106). While art created from non-reproducible materials is ritualistic and has cult value, reproducible art is mass art with exhibition value. For Benjamin, the logical culmination of ritualistic art made from non-reproducible materials is human sacrifice, while the logical culmination of mass-art or technologically reproducible art is the aeroplane: a machine capable of being flown without human involvement at all (107). Benjamin posits this assertion literally and pinpoints the paramount difference between reproducible and non-reproducible art as the extent to which they realize the capacities made available by the human body.

Additionally, non-reproducible art relies on

and utilizes the human body, while reproducible art attempts to distance itself from the human body and all its available capacities. The modernist is verily occupied with the notion of automation and delights in the automatic quality of photography. Benjamin expresses many of these same ideas such as the modernist notion that automation ensures objectivity and is democratic. This can be understood in that the medium of photography itself is democratic. Amateurs and professionals are conflated, eroding the distinction upheld by classical, non-reproducible art altogether. Holding up a camera and taking a photograph requires no training or specialized set of skills, unlike those which are required of a painter. What is important to recognize in Benjamin’s essay—as well as in the changing attitudes toward materiality that accompanies modernism—is that both material technology that impacts the perceiver and the prevalence of particular material mediums have profound implications for cultural and social life. This culture change is brought about, according to Benjamin, through a shift in medium—the paramount feature of this medium being whether or not it is technologically reproducible. Therefore, material technology itself is one dimension through which mediums do differentiate certain art forms.

Returning to our definition of “medium,” having considered Benjamin’s understanding of “by means of which,” let us now consider the question of medium in terms of the “particular ways” it does or says something (Cavell 32). The “particular ways” (32) something is done or said will be interpreted here as a reference to the conventions that are prevalent with each medium. Conventions are practices taken for granted by artists working within a medium. They may seem inherent to a material or a restraint of its physical capabilities, but conventions are merely practices so common that they appear to be intrinsic to the material itself. One reason that mugshots or passport photographs, and graffiti or murals, do not spring to mind when one mentions photography or painting in the context of art, is that they do not make use of the same conventions as “serious art.” Therefore, these types of photographs and paintings are in a grey area in regards to their medium, even though they make use of the same technology.

Furthermore, conventions contribute to the illusion that mediums exist concretely. Both Rothko’s painting “No. 13” and Strand’s photography “Stairs” exemplify many conventions specific to their respective mediums as modernist pieces of art. For Rothko, the use of convention is evident in the minimalism of his painting, which is an attempt to

move away from representation. Rothko's "No. 13" has a background coat of paint, the darker yellow, and then more work on top of this background work. For there to be one base coat or background colour is a common convention. Rothko's painting is oil and acrylic paint on canvas, conforming to the conventional use of certain material/technology. Strand's piece is similarly minimalist, with the main attraction of the photo being the ways in which light and shadow manipulate lines. Strand's photograph likewise makes use of conventions specific to what one imagines the medium of photography to be, such as the slightly canted angle. A straight shot is associated with photographs taken for unartistic purposes, while Strand's careful framing and angle seem as though they are expressing something specific about the subject. Therefore, these works demonstrate certain conventions specific to their medium.

The conventions and technology behind works allow for their ostensible belonging to one single medium, supporting the effect of each art piece. Rothko's "No. 13" is an abstract piece, and as such it highlights the ability for painting to represent that which is not physically there in the world. Conversely, photography can only represent what is physically available to us. Even when photos are manipulated, they can only be manipulated to the extent that the viewer believes something similar could exist. In this way, photographs are more culturally stateful objects. Unlike paintings, photographs can be used for things such as crime scene investigations, which are shown in courtrooms because they are considered to acknowledge reality, in a way that a painting does not. Therefore, in terms of how both forms relate to their subject matter, paintings are expressions and photographs are acknowledgments. This distinction stands as both the impact and the effect of their medium.

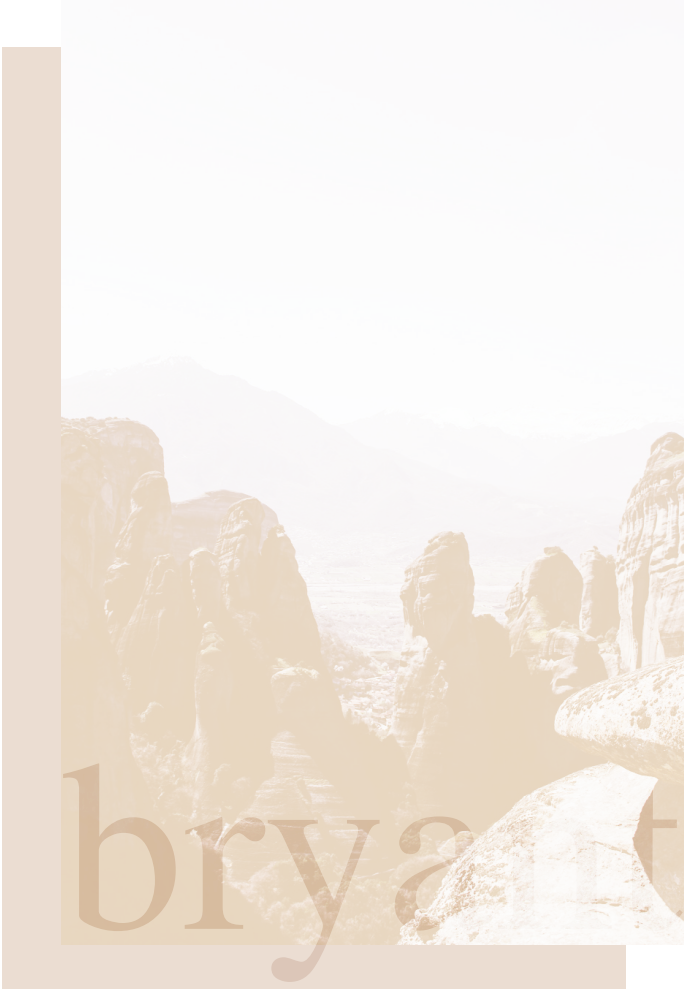
Cavell states that only when painting "was forced to forgo likeness" could it achieve a higher sense of reality (Cavell 21). In this way, asserts Cavell, "painting freed photography to be invented" (21). When painting abandoned its "obsession with likeness," the paintings became a portal into the artist's presence in reality (21). Cavell states, "our subjectivity became what is present to us, individuality became isolation" (22). He furthermore asserts that photography overcame subjectivity with automation (23). After painting had matured past its "obsession with likeness," it focused on our presence in the outside world (21). This preoccupation with presence was mauled by photography, given that "photography is always haunted by death and historicity," remarking

on the same diachronic, mirror-like quality of the photograph that represents what was once real, but no longer is (Doane 222). Rothko's painting and Strand's photography exemplify these qualities. Rothko's painting is abstract expressionism, and is emotive, remarking on subjectivity and one's presence in the world. Whereas Strand's photograph captures reality as it truly existed, but no longer does. Both conventions and technology support the effect of these individual artworks.

The way in which technology and convention are utilized in specific works allows the viewer to ascribe to them a specific medium and to internalize the idea that mediums are separate entities—if they exist at all. Essentially, technology and convention are combined to create the illusion of medium. These two capacities allow for different mediums to move us differently. Therefore, mediums appear to be discreet, separate categories because different technologies and conventions have different effects on the perceiver.

## References

- Benjamin, Walter. "The Work of Art in the Age of its Technological Reproducibility, 2nd Version."  
Cavell, Stanley. *The World Viewed*. Harvard University Press, 1979.  
Doane, Mary Ann. "Information, Crisis, Catastrophe."



One of the defining features of the Antique Mediterranean civilization was its remarkable urbanity.<sup>1</sup> Radiant rural communities<sup>2</sup> of the Hellenic Classical Period had centralized socio-cultural, ecclesiastic, and political authority in planned, orthographic environments. The Hellenic and following Roman empires further disseminated their cultural and urban influence through conquest and trade to influence the extra-Mediterranean cities in Western Asia and Arabia. Throughout multiple empires, many of these cities syncretized the Antique and Christian traditions that were built into their urban landscapes. The introduction of Islam in the 6<sup>th</sup> and 7<sup>th</sup> centuries propelled social change in areas that were once culturally dominated by Mediterranean empires. Cities such as al-Fustat (which later became Cairo) began to synthesize, rather than syncretize, new foundations for their urban environments. The conditions that created al-Fustat provide a working example of the so-called “young” cities that were not built on an existing city or following a specific organizational authority, but the uniquely combined military, historic, and cultural infrastructures.<sup>3</sup> These foundations created the socio-cultural developments which later allowed al-Fustat to weave its Antique inheritances with Arabian-Islamic influence.

However, navigating the earliest stages of al-Fustat’s development proves challenging, simply on account of its age. The earliest ‘layers’ of the city remain covered by extant urban development, not to mention their planned destruction around the 11<sup>th</sup> c. CE, which further drained the pool of possible archaeological evidence. As such, many features of this paper apply evidence from the larger cultural sphere of post-Antiquity Islamic urbanity. Nevertheless, archaeological evidence, commentary, and case studies give an understanding of al-Fustat in the 8th century CE, and of the conditions which created its unique urban environment.

Though each condition that created the environment worked concurrently in influencing al-Fustat, a portion of it pre-dated the site and passively affected the conditions which would eventually create the city. Al-Fustat “recycled the monuments”, and customs, “of... earlier [periods]” in shaping its identity; the sources of these historic contexts vary.<sup>4</sup> Arab Muslims “Islamized” many pre-Islamic cities by first transforming public spaces (i.e. forums,

1. Hugh Kennedy. “From polis to Madina: urban change in late antique and early Islamic Syria.” *Past and Present* 106, no. 1 (1985): 3–4. <https://doi.org/10.1093/past/106.1.3>

2. Kennedy, “From Polis”, 3-4.

3. Vorderstrasse et al. 2015. *A Cosmopolitan City: Muslims, Christians, and Jews in Old Cairo*. Chicago: University of Chicago Press. 6.

The quoted language is specific to the Introduction of Vorderstrasse et al.

4. Vorderstrasse et al. “Cosmopolitan”, 5.

# “Unplanned” by Design: Al-Fustat, Islamic Urbanity, and the Influences of the Antique Mediterranean

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theatres, gardens, etc.) to allow for prayer while maintaining their original purposes.<sup>1</sup> From Antiquity, monumental building projects disappeared from Islamized cities, later replaced by the *hammam* - urban baths - and the mosque.<sup>2</sup> Public baths themselves, however, lasted uninterrupted from Antiquity to the present with the first monument in al-Fustat being the Mosque of ‘Amr ibn al-‘As, followed shortly thereafter by public waterworks which included baths.<sup>3</sup> As the population of Muslims grew, al-Sayyad notes that eventually a mosque would be built, shifting the centres of cultural influence. Public theatre and professional sporting events ended in the early 7<sup>th</sup> century with the Persian invasions. The theatre had been in decline for the better part of the Mediterranean Classical period.<sup>4</sup> Certainly, al-Fustat developed outside of this direct influence and as a result, never built either dedicated sports fields or theatres. Al-Sayyad also notes that when a city’s culture would saturate or capitulate under Arab Muslim influence, buildings which proselytized other faiths would be assumed either financially or forcefully by the inhabitants and torn down or transformed into non-religious administrative or civic buildings.<sup>5</sup> Al-Sayyad makes it clear that orthodox Islam did not prescribe these urban changes; changes in Arab Muslim *culture* led to the development of these urban fabrics.<sup>6</sup> Heba Mostafa corroborates al-Sayyad with her discussion on the development of mosque microarchitecture in the 7<sup>th</sup> century: namely, the placement and use of the *maqṣūra* and *minbar* as expressions of gradual Muslim cultural evolution rather than a religious mandate.<sup>7</sup> Just as in the mosque, Muslims began to use space differently, melding pragmatic needs for governance, education, and commerce into religious tenants – “complementary yet contradictory”.<sup>8</sup> Religion ostensibly created these conditions, yet the population played an integral role in reshaping these urban centres through Islam’s lens of law and administration.<sup>9</sup> Al-‘As founded al-Fustat in the midst of this cultural wave, resulting in its seemingly “non-Antique” urban design. Gideon Avni’s case study in Caesarea Maritima - which contains distinct layers of appropriated change from Antiquity - corroborates the graduation in adopting these “inheritances” (Appx. III).<sup>10</sup> Jarash (Gerasa) (Appx. II), describes an Islamized settlement that continued to use its past Christian and pre-Christian facilities, while Beth Shean (Scythopolis) - a smaller settlement with fewer extant Antique sources - corroborates this movement in the Byzantine context (Appx. I).<sup>11</sup> Each of these contemporaries to al-Fustat provides a baseline contrast for the namely pre-Islamic influences which affected larger Muslim society, and thus, al-Fustat’s founding. Admittedly, the urban landscape of al-Fustat followed alongside these developments, and as a result, exemplifies their culmination. Nonetheless, these conditions created and allowed its settlement by ‘Amr ibn al-‘As and the military traditions he embedded within the urban landscape, both of which featuring cultural holdovers from the Antique world.

The military tradition that grounded al-Fustat’s founding principles affected its urban environment. Unlike other founder-contemporaries (Appx. I-III), ‘Amr ibn al-‘As did not ‘plan’ Al-Fustat, but instead granted agency to each soldier’s ‘tribe’ in creating and maintaining their own *khitta*.<sup>12</sup> While his central authority did apply some regulation, for the most part

1. Nezar al-Sayyad. “Urban transformation in early Islam: Arabization or Islamization of existing cities”. 1991. *Cities and caliphs: on the genesis of Arab Muslim urbanism*. 110.

2. Kennedy, “From Polis”, 5.

3. Kennedy, “From Polis”, 8.

4. Kennedy, “From Polis”, 7-8.

5. al-Sayyad, “Urban transformation”, 110-111.

6. al-Sayyad, “Urban transformation”, 109.

7. Heba Mostafa. “The Early Mosque Revisited: Introduction of the Minbar and Maqṣūra.” *Muqarnas Online* 33, no. 1 (November 14, 2016): 1, 11. [https://doi.org/10.1163/22118993\\_03301P002](https://doi.org/10.1163/22118993_03301P002)

8. Mostafa, “The Early Mosque”, 12.

9. Kennedy, “From Polis”, 27.

10. Gideon Avni. “‘From Polis to Madina’ Revisited – Urban Change in Byzantine and Early Islamic Palestine.” *Journal of the Royal Asiatic Society* 21, no. 3 (July 2011): 315-319. <https://doi.org/10.1017/S1356186311000022>.

11. Avni, “From Polis... Revisited”, 303-308, 312-315.

12. Jamel Akbar. “Khaṭṭa and the Territorial Structure of Early Muslim Towns.” *Muqarnas* 6 (1989): 28. Accessed April 2, 2020. doi:10.2307/1602277.



these *khatta* self-governed and privately operated as a result.<sup>13</sup> The inhabitants of Al-Fustat crafted its image of urbanity without a central authority as a direct result of its military heritage unlike urban developments of the Antique Mediterranean which highly centralized urbanity (Appx. IV). As such, ‘public’ spaces fared much differently, as every part of the city including the roads, was under the private ownership of a *khitta* and its agent.<sup>14</sup> Al-‘As, too, built his mosque, the first in Egypt, on the outskirts of his tent-city fortification and the fortress, which he besieged.<sup>15</sup> The word *fustat*, George Scanlon notes, even comes from Byzantine Greek and Latin words for encampment.<sup>16</sup> In nomenclature and action, militarism contributed heavily to the creation of al-Fustat. These preliminary structures remained folded into the design of the city until the Crusades, with some roads and structures dated to the 7<sup>th</sup> century with periodized glassware, coinage, and pottery in continuous use throughout.<sup>17</sup> Scanlon notes that al-‘As’ original plans were built upon the bedrock shelf of the Muqattam hills, which provided the structure’s ability to maintain the infrastructure that would later support incredibly dense habitation, sanitation, and water delivery.<sup>18</sup> Militarism shifted into an endemic and chronic political factor for al-Fustat as a garrison town that became the later-centre of an empire.<sup>19</sup> The influences and needs of the military shaped the physical and cultural foundation of al-Fustat<sup>20</sup> and its social, legal, and political systems. This militarism—no doubt also influenced by the militaries and fortification of the Romans and Byzantines—formed the core infrastructure that would become necessary to its later development. This military “inheritance” forms the second rung of al-Fustat’s influences with social conditions that affected the area’s population further underpinning this foundation.

The social conditions that affected North Africa and Western Asia influenced al-Fustat’s unique synthesis. Shifts in cultural influence and the needs of a population will affect the urban landscape in kind; certainly, religion itself does not create the impetus for urban change, but rather the cultural carryovers which instead change its population.<sup>21</sup> Even before ‘Amr ibn al-‘As laid the foundations for al-Fustat, the Egyptian identity frequently reconciled its dynastic history with monotheistic powers. Folk legends and tales notably feature the assumption of Egyptian monumentality into Coptic, and later Islamic, urban environments.<sup>22</sup> Distinct layers of influence highlight the cultural array of Egyptian heritage from stories about the “old woman and the wall”, the Coptic Queen Dalūka, to reasons for weaving Egyptian, and Christian *spolia*.<sup>23</sup> Judith McKenzie highlights this with the auditoria of Kom el-Dikka in Alexandria, which changed, firstly due to Christianization, and then later Islamization.<sup>24</sup> While most parts of the building saw continued use, including the theatre (albeit for non-theatrical purposes), later Islamization saw the building fall into abandonment and disrepair by the 8<sup>th</sup> century.<sup>25</sup> McKenzie points out that Alexandria did not, in fact, lack intellectual pursuits or influence regarding this site’s dilapidation, as some posit, but that shifting cultural habits re-centred intellectual life around the mosque and market.<sup>26</sup> Even as ruins, these buildings still lived alongside the new intellectual hubs of Alexandria, and the Kom el-Dikka acted as a

13. Akbar. “Khaṭṭa”, 29.

14. Akbar. “Khaṭṭa”, 30.

15. Scanlon, “Al-Fustat”, 188.

16. Scanlon, “Al-Fustat”, 188.

17. Scanlon, “Al-Fustat”, 190.

18. Scanlon, “Al-Fustat”, 189.

19. Vorderstrasse et al., “Cosmopolitan”, 46.

20. Vorderstrasse et al., “Cosmopolitan”, 46.

21. Tomasz Derda, Tomasz Markiewicz, and Ewa Wipszycka. “The auditoria and the city”. 2007. Alexandria: auditoria of Kom el-Dikka and late antique education. Warsaw: Journal of Juristic Papyrology. 79-82.

22. Petra M. Sijpesteijn. “Building An Egyptian Identity.” In *The Islamic Scholarly Tradition*, edited by Asad Q. Ahmed, Michael Bonner, and Behnam Sadeghi. BRILL, 2011: 86-101. <https://doi.org/10.1163/ej.9789004194359.i-386.22>.

23. Sijpesteijn, “Building”, 100-101.

24. Derda, Markiewicz, and Wipszycka, “The auditoria”, 79-81.

25. Derda, Markiewicz, and Wipszycka, “The auditoria”, 79-81.

26. Derda, Markiewicz, and Wipszycka, “The auditoria”, 81-82.

supplementary museum, classroom, and forum at least into the Medieval Period.<sup>27</sup>

Contrary to the generalizing model applied by Kenney, Gideon Avni claims that the process of transition for many cities in North Africa and Western Asia cannot be compared. As each underwent specific socio-cultural and religious conditions, they were forced to adapt to likewise economic and political stress.<sup>28</sup> The specific stresses of the Justinian Plague in the 6<sup>th</sup> century CE, for example, caused a number of sociological differences, but ultimately came to define the Egyptian labour force.<sup>29</sup> Workers saw increased rights drawn for them on account of their scarcity. This favourable relationship stimulated economic and social growth in the following centuries, and especially as al-Fustat came to be founded.<sup>30</sup> The later cultural shift from Alexandria to al-Fustat created a wave of changes, including the mass-migration of artisans, which built up the city's foundation as a capital.<sup>31</sup> There is evidence to suggest that this change continues well into the Crusades, especially by the early Medieval period, which saw al-Qahira and al-Fustat become centres of trade and industry rivalled by no other place in the Islamic world.<sup>32</sup> That intersection of occurrences led al-Fustat to develop a rich, urban labour diversity.

The cities that survived the transition from Antiquity to the first Caliphates—Justinian Plague or not—did so due to the robustness and flexibility of their economic system, rather than simply the 'potency' of their religious affiliation.<sup>33</sup> Avni rests their argument upon the same tenants as al-Sayyad and Mostafa: long-term socio-economic transitions created the conditions for these transitions.<sup>34</sup> Islamization did not occur overnight but as the result of a careful gradation which repurposed Antiquity for contemporary, commercial, and urban purposes (Appx. I-III).<sup>35</sup> The development of the caliph, for example, created a political entity with "far-reaching political, linguistic, religious, artistic and legal consequences" which became the keystone policy in Islamization. However, the authors stipulate that even this characteristically Muslim style of leadership maintains a foundation in Mediterranean administrative ethos, much like 7<sup>th</sup> century papyri discusses the notion of Roman *res publica* from the authors.<sup>36</sup> Even then, most documents needed to be drafted trilingually at the time of al-Fustat's creation; the influences of the Mediterranean embed themselves deep into the core of this city.<sup>37</sup> All of the above created the conditions and factors which built the conception of al-Fustat, alongside its military 'heritage' and other pre-Antique influences.

Whether it was through Antique 'inheritances' that affected its social conditions, military tradition that allowed for the use of those inheritances and further development, or the social conditions that played into both factors at once, the settlement of al-Fustat represents a complex weave of early urban Islam. The social and political factors found in the Rashidun Caliphate, as well as holdovers from previous empires and the environments which hosted them, created the unique environment where al-Fustat synthesized its past into a future by design. Kennedy claims that al-Fustat represents an "[unordered] urban environment" with a distinctly "chaotic plan of the sixth-century town".<sup>38</sup> Al-Fustat does not have a disordered plan, but one which differs in its urban and social design from contemporaries in Hellenic-Roman spheres of influence. Al-Fustat was, perhaps, the first instance of a truly Arabic-Muslim

27. Derda, Markiewicz, and Wipszycka, "The auditoria", 82.

28. Avni, "From Polis... Revisited", 327.

29. Vorderstrasse et al., "Cosmopolitan", 49-52.

30. Vorderstrasse et al., "Cosmopolitan", 49-52.

31. Vorderstrasse et al., "Cosmopolitan", 22.

32. Vorderstrasse et al., "Cosmopolitan", 51-52.

33. Avni, "From Polis... Revisited", 327-329.

34. Avni, "From Polis... Revisited", 328-329.

35. Avni, "From Polis... Revisited", 327-329.

36. Vorderstrasse et al., "Cosmopolitan", 47.

37. Vorderstrasse et al., "Cosmopolitan", 44.

38. Kennedy, "From Polis", 27.

settlement, unique from the influences which affected other settlements in Northern Africa and Western Asia. Its synthesis of the Antique world allowed it to improve its settlement patterns and adapt socially to the rapid changes occurring in the 6<sup>th</sup>, 7<sup>th</sup>, and 8<sup>th</sup> centuries CE, eventually leading to its place as a capital of multiple empires and a world leader in finance, trade, and culture. The continuing success of the culture and population of al-Fustat is a direct result of the foundations laid by ‘Amr ibn al-‘As, as well as the heritage which allowed for its creation.

### Appendix

Figure I

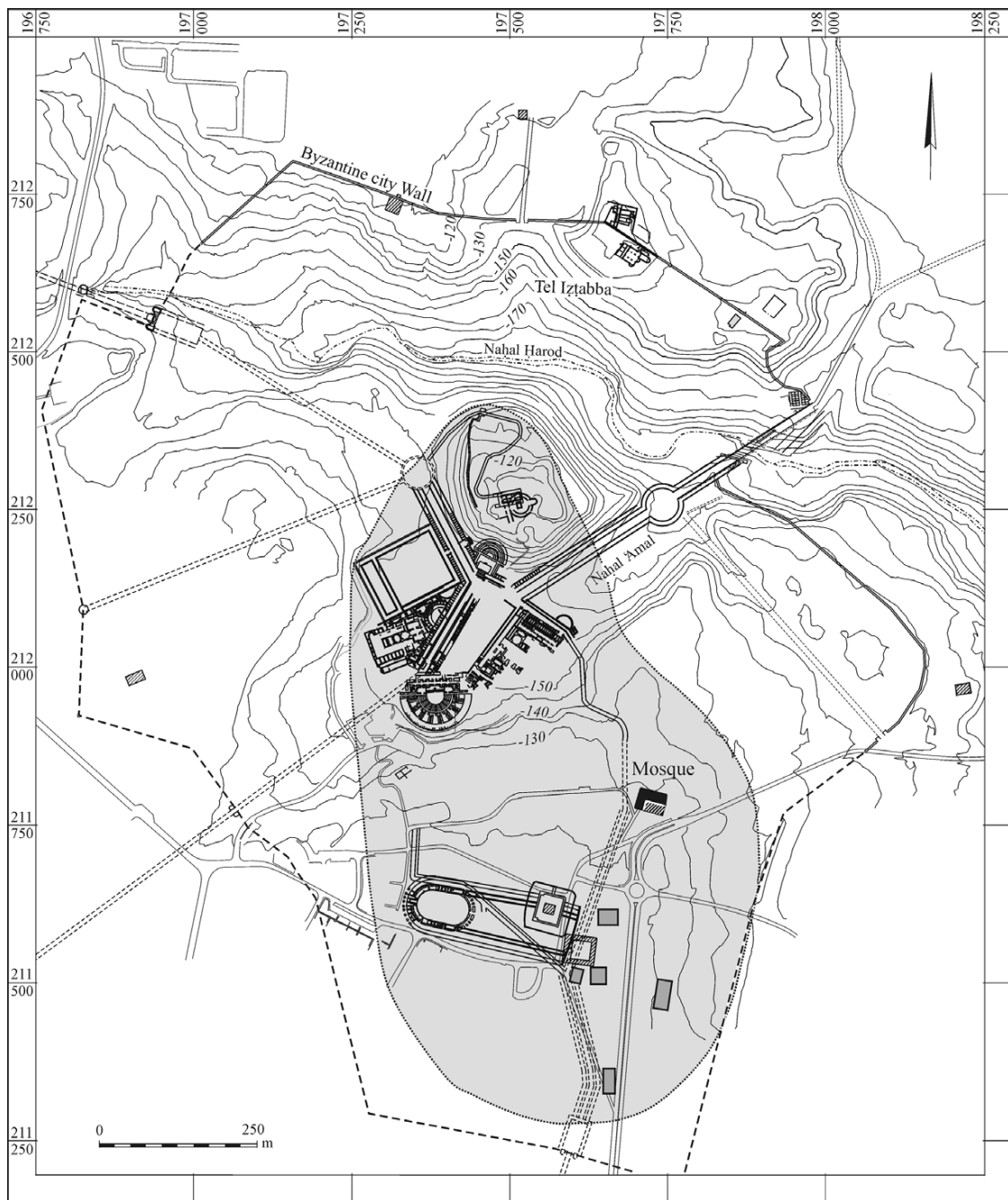


Figure II

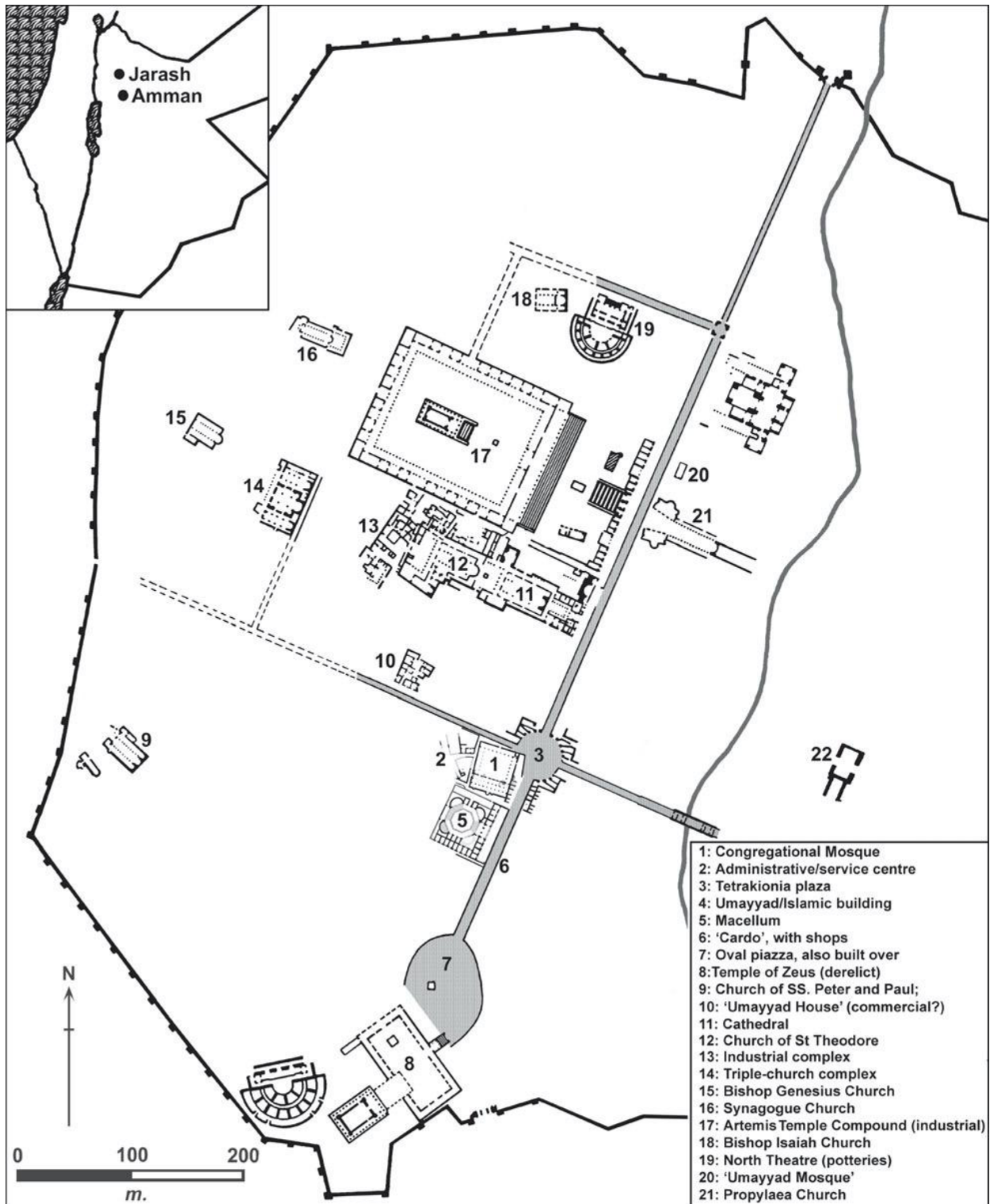




Figure III

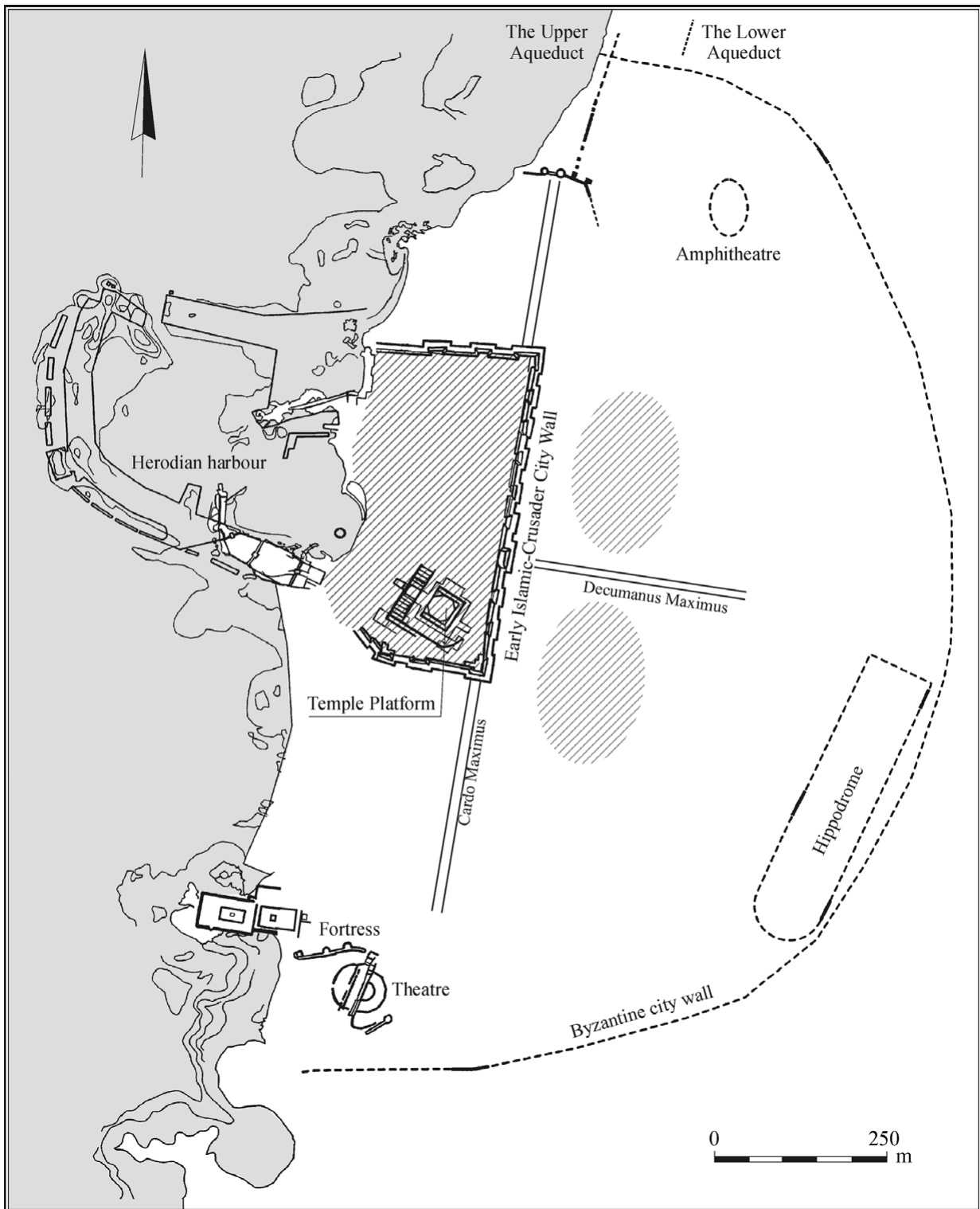
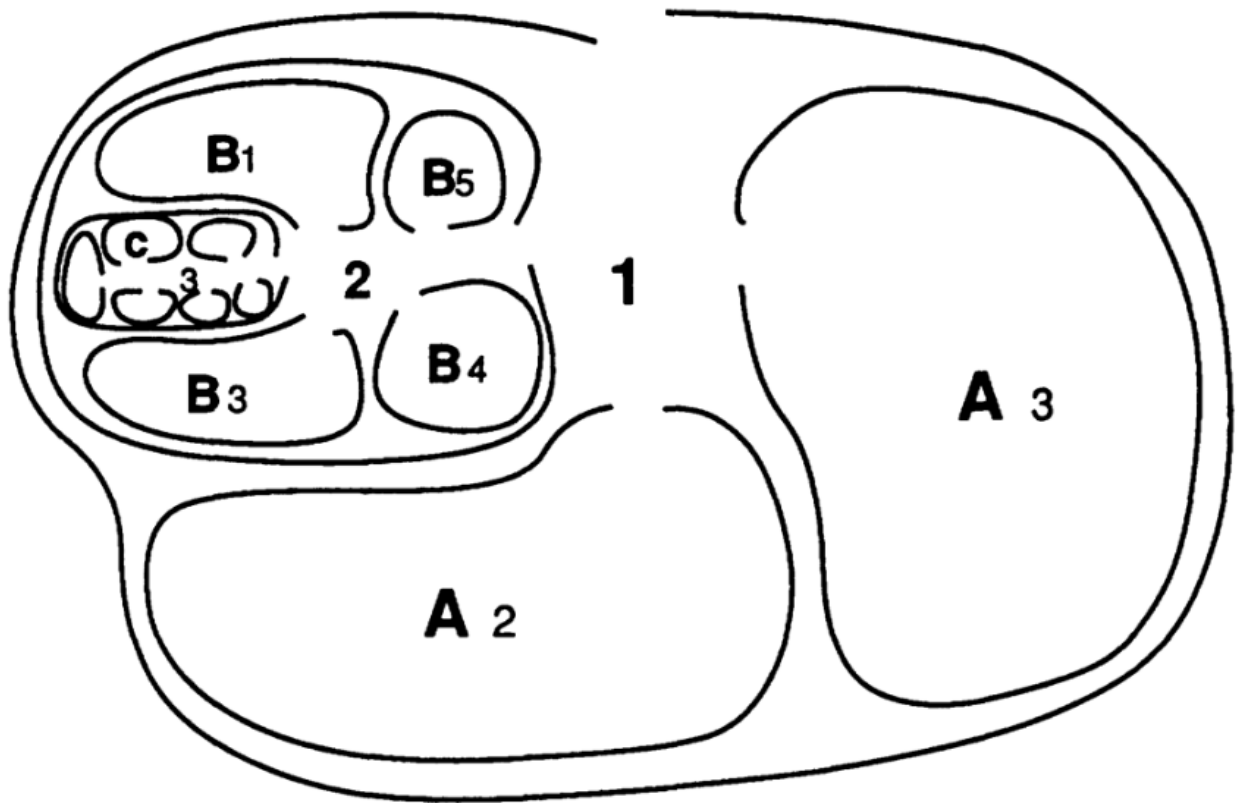


Figure IV



1. Territorial structure of the early Muslim garrison town. Letters refer to group (A), subgroup (B), and private holdings (C); numbers refer to vacant or shared space.

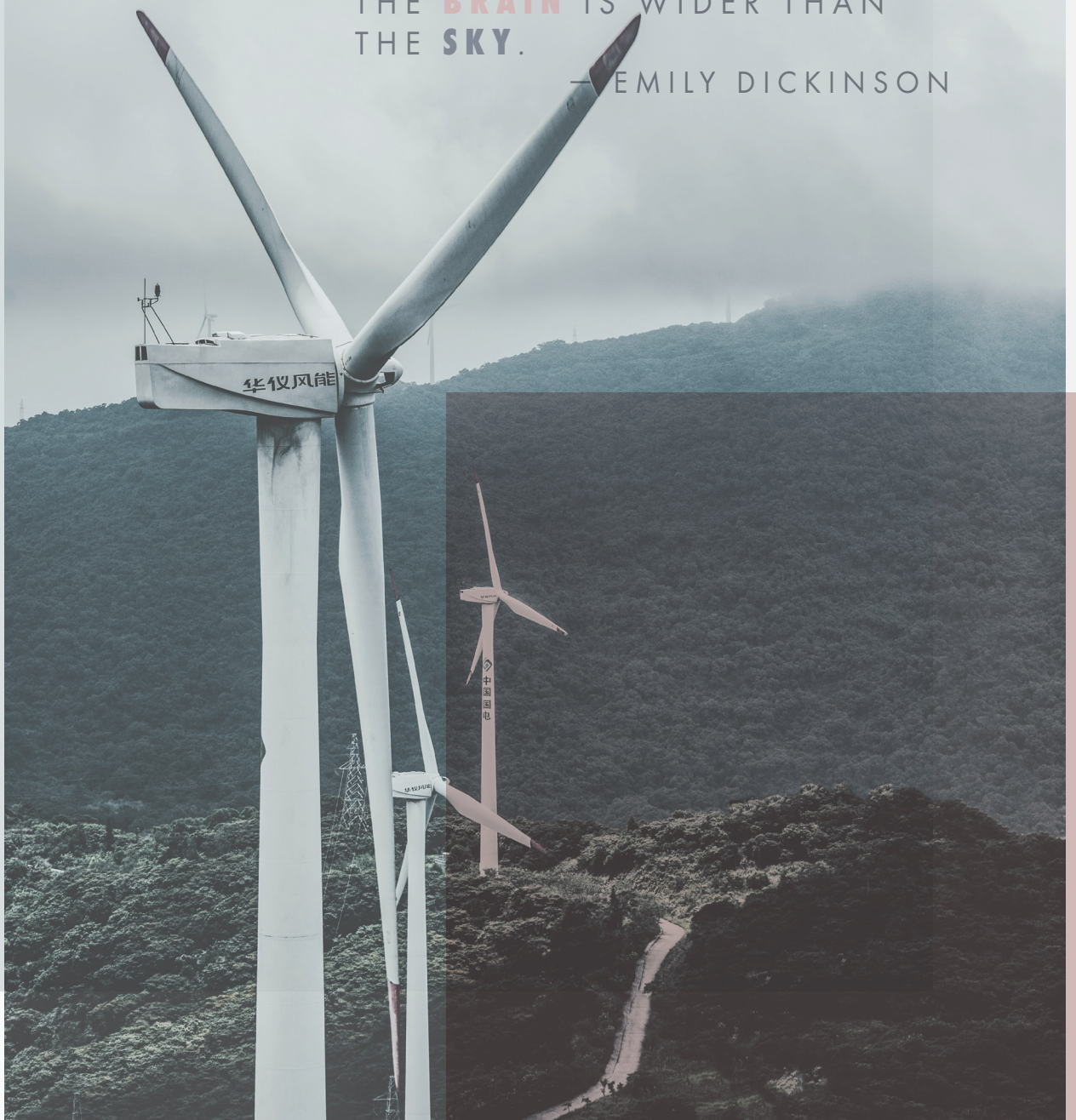
## References

- Akbar, Jamel. "Khaṭṭa and the Territorial Structure of Early Muslim Towns." *Muqarnas* 6 (1989): 28-30. Accessed April 2, 2020. doi:10.2307/1602277.
- al-Sayyad, Nezar. "Urban transformation in early Islam: Arabization or Islamization of existing cities". 1991. *Cities and caliphs: on the genesis of Arab Muslim urbanism*. 109-111.
- Avni, Gideon. "'From Polis to Madina' Revisited – Urban Change in Byzantine and Early Islamic Palestine." *Journal of the Royal Asiatic Society* 21, no. 3 (July 2011): 327–29. <https://doi.org/10.1017/S1356186311000022>.
- Derda, Tomasz, Tomasz Markiewicz, and Ewa Wipszycka. "The auditoria and the city". 2007. *Alexandria: auditoria of Kom el-Dikka and late antique education*. Warsaw: *Journal of Juristic Papyrology*. 79-82.
- Kennedy, Hugh. "From polis to Madina: urban change in late antique and early Islamic Syria." *Past and Present* 106, no. 1 (1985): 5, 7-9, 27. <https://doi.org/10.1093/past/106.1.3>.
- Mostafa, Heba. "The Early Mosque Revisited: Introduction of the Minbar and Maqṣūra." *Muqarnas Online* 33, no. 1 (November 14, 2016): 1, 11-12. [https://doi.org/10.1163/22118993\\_03301P002](https://doi.org/10.1163/22118993_03301P002)
- Scanlon, George T. "Al-Fustat and the Islamic Art of Egypt," n.d. 188-190.
- Sijpesteijn, Petra M. "Building An Egyptian Identity." In *The Islamic Scholarly Tradition*, edited by Asad Q. Ahmed, Michael Bonner, and Behnam Sadeghi. BRILL, 2011: 86-101. <https://doi.org/10.1163/ej.9789004194359.i-386.22>.
- Vorderstrasse, Tasha, Tanya Treptow, Anna R. Ressler, and Kevin Bryce Lowry. 2015. *A Cosmopolitan City: Muslims, Christians, and Jews in Old Cairo*. Chicago: University of Chicago Press. 5, 22, 44, 46-47, 49, 52 .

# sciences

THE **BRAIN** IS WIDER THAN  
THE **SKY**.

— EMILY DICKINSON





## A Literature Review of Transgender Mental Health Care

*Keleila Handelman-Kerman is a fourth-year Psychology and Sexual Diversity Studies student.*

Within the last decade, transgender issues have garnered increased public awareness. This increased attention has contributed to the growing conversation around transgender rights and concerns. Transgender is an identity used by individuals whose gender identity “differs from what is typically associated with the sex they were assigned at birth” (Jaffee, Shires, & Stroumsa, 2016, p. 1010). In contrast, cisgender refers to “those whose gender identity aligns with their gender assigned at birth” (Veale, Watson, Peter, & Saewyc, 2017, p. 2). A variety of experiences and identities exist under the transgender umbrella and conversations within the transgender community about language and terms are continuous and evolving. Many more identities are being utilized now than ever before. For example, non-binary is a term used to “describe people who identify outside the binary gender construct ... People who have a fluid gender identity may identify as bigender, gender fluid, or gender flux ... Some people may feel they have no gender and identify as agender, gender neutral, non-gendered, or genderless.” (Jones, Bouman, Haycraft, & Arcelus, 2019, p. 251). While these examples are not exhaustive, it elucidates the complex and transforming nature of the transgender experience. Moreover, transgender individuals have unique health care needs, and considering these factors, it is important to investigate the quality of transgender health care. One particular area of interest is transgender mental health care. Upon conducting a literature review, three key themes emerged: the mental health disparity between transgender and cisgender people, the historical pathologizing of transgender people in mental health settings, and the lack of clinical knowledge and competency among health care providers.

### ***Mental Health Disparity***

There is a notable mental health disparity between transgender and cisgender people. One study found that non-binary transgender individuals scored significantly higher on measures of psychological functioning than binary transgender individuals, but significantly lower than cisgender individuals (Jones et al., 2019). A retrospective observational cohort study from Boston found that transgender youth were more likely to access mental health services and have negative mental health outcomes when compared to cisgender youth. Additionally, transgender youth disproportionately endorsed suicide ideations, suicide attempts, and self-harm without lethal intent compared to matched controls (Reisner et al., 2015). Similar results have been observed in Canada, as the Canadian Trans Youth Health Survey found that transgender youth, aged 14-18, had five times the risk of suicidal thoughts compared to controls, with two-thirds having seriously considered suicide in the past year. In addition, transgender youth, aged 19-25, had an over 16 times increased risk of attempting suicide in the past year. Non-binary youth reported lower levels of overall mental health, higher incidence of self-harm in the past year and consistently reported more mental health concerns on average (Veale et al., 2017).

These are only a few of the studies that have documented the substantial disparity between the mental health of transgender and cisgender people. However, there are conflicting results regarding the mental health of non-binary and binary transgender people. It is possible that non-binary transgender individuals experience less gender dysphoria which may contribute to improved mental health. Contrastingly, societal pressures to conform to the gender binary may be a cause for distress. This also illustrates that binary and non-binary transgender individuals

face different pressures and may require different mental health care. It is worth noting that discussion around LGBTQ+ mental health tends to focus on sexual orientation minorities over gender identity minorities; these populations have vastly distinct needs. Unfortunately, none of the aforementioned studies can explain why these discrepancies occur, which highlights the importance of continued research on the topic.

### ***Pathologizing of Transgender Identity***

Transgender individuals were historically pathologized in mental health settings. Non-cisgender identities were, and in some cases still are, considered disordered in North America and were diagnosable as Gender Identity Disorder (GID). Additionally, there was little clarification between gender dysphoria and gender role nonconformity in the DSM-IV. Considering that gender roles are socially constructed, these diagnostic criteria were culturally influenced. Additionally, transgender health care has focused on the body, with mental health providers acting as the gatekeeper for individuals to access transition-related care. A survey of Australian transgender individuals found that satisfaction ratings for psychiatrists were significantly lower than surgeons, general practitioners and psychologists (Ho & Mussap, 2017). Survey data found that 25% of transgender individuals accessed mental health services solely to obtain a “gender letter” for the purposes of transitioning (Austin & Goodman, 2018). Individuals may be willing to provide stereotypical transgender narratives and downplay concerns to improve their chances of obtaining a “gender letter.” However, participants on average disagreed that they had to provide untrue information for access to care (Ho & Mussap, 2017). Interviews of mental health providers in Nebraska found that they had mixed feelings about the necessity of letters and, while they recognized it as gatekeeping, they felt that there was no clear path to removing it (Holt et al., 2019).

With the release of the DSM-5 in 2013, GID was replaced with Gender Dysphoria as a step away from pathologizing transgender people. This was an important movement towards removing barriers to care for transgender individuals. Austin and Goodman (2018) explained that barriers can be overt like provider insensitivity and ignorance, or systematic like the structural oppression towards transgender clients in health care settings. In a survey of transgender individuals’ experiences with health care providers, higher quality of care was associated with fewer barriers to access (Salkas et al., 2018). Additionally, health care settings should be a place free of social stigma, where individuals are able to receive appropriate care without fear of discrimination. However, being non-discriminatory is not all that transgender patients need. Veale et al. (2017) expressed that health care providers need to be transgender-competent not just transgender-friendly. The heterogeneity of the transgender experience means that not every patient will require the same care; thus, health care professionals should be educated to address and assist with a diverse array of concerns. Additionally, clinicians should be cognizant of the realities of institutional discrimination and contextualize patient problems through the lens of social prejudice and ignorance, rather than pathology alone, especially when considering the compounding effect of other forms of discrimination. Results from the 2015 United States Transgender Survey indicate that transgender people of colour are up to three times more likely to be living in poverty and have an unemployment rate four times higher than the U.S. population (James et al., 2016). Benson (2013) explained that the DSM’s focus on pathology has failed to address the significant impact of transphobia and other discrimination, this therefore means that it is up to clinicians to account for this factor.

### ***Lack of Clinical Knowledge and Competency***

Mental health providers are not always well versed in treating transgender clients, many

may not even receive formal education on the topic. A study surveying 96 mental health nurses in Australia found that only 19.8% had received specific training. Additionally, it was found that professionals who had less experience working with transgender clients had significantly less positive attitudes and clinical knowledge (Bartholomaeus & Riggs, 2016). Data from the United States Transgender Discrimination Survey showed that 55% of respondents indicated that they needed to teach their health care providers in order to receive appropriate care (Jaffee et al., 2016). Similarly, interviews of 7 transgender individuals who have received mental health care found that there was a common belief that therapists learned from their transgender clients. Additionally, many individuals shared their concerns about being stereotyped or misunderstood (Benson, 2013). If transgender individuals do not feel comfortable with their health care providers, they may hesitate to be completely honest, especially in mental health settings where the fear of feeling judged may be heightened.

The onus should be on the health care providers to be trained and educated, not on transgender patients to be the educators. Formal education on treating LGBTQ+ patients should be a requirement, with a special focus on transgender affirming care. Training must include more than sensitivity, addressing applicable and relevant skills. In addition, experience working first-hand with transgender patients is crucial, as textbook knowledge alone is insufficient.

### ***Conclusion***

Ultimately, there are likely many factors contributing to the mental health disparity observed between transgender and cisgender people. However, based on the studies included in this literature review, it is not possible to ascertain the specific cause, which emphasizes the importance of continued research in this field. Transgender individuals are often excluded from research, and research dedicated to investigating transgender issues can be difficult to find. Without a thorough understanding of the needs and concerns of transgender individuals, improvements to their mental health care cannot be made.

The studies outlined in this review elucidate several ways in which transgender mental health care can be advanced. It is integral that health care providers make transgender patients feel secure and comfortable. Benson (2013) found that mental health providers who overtly state that they work with LGBTQ+ patients and that their practices are transgender friendly, signify safety to transgender participants. Additionally, there are easily integrated changes that health care providers can make which are significant to transgender individuals. For example, including preferred names and pronouns in collecting patient information as well as utilizing gender-inclusive language. It is also pertinent that mental health care providers are educated and knowledgeable about treating transgender patients. Continued medical transgender education should be offered to providers who have completed their training, and should be added to the curriculum for future providers.

Considering the striking mental health disparity between transgender and cisgender individuals, patients with transgender identities should be recognized as higher risk for mental health concerns and thus should be carefully screened and evaluated. On a broader scale, national mental health policies should focus on transgender youth as an extreme risk population. It is imperative that attention and awareness is brought to this issue so that more can be done to combat this ongoing and serious disparity.

## References

- Austin, A., & Goodman, R. (2018). Perceptions of transition-related health and mental health services among transgender adults. *Journal of Gay & Lesbian Social Services, 30*(1), 17–32. <https://doi.org/10.1080/10538720.2017.1408515>
- Bartholomaeus, C., & Riggs, D. (2016). Australian mental health nurses and transgender clients: Attitudes and knowledge - Damien W Riggs, Clare Bartholomaeus, 2016. *Journal of Research in Nursing, 21*(3). <http://journals.sagepub.com/doi/10.1177/1744987115624483>
- Benson, K. E. (2013). Seeking Support: Transgender Client Experiences with Mental Health Services. *Journal of Feminist Family Therapy, 25*(1), 17–40. <https://doi.org/10.1080/08952833.2013.755081>
- Ho, F., & Mussap, A. J. (2017). Transgender Mental Health in Australia: Satisfaction with Practitioners and the Standards of Care. *Australian Psychologist, 52*(3), 209–218. <https://doi.org/10.1111/ap.12188>
- Holt, N. R., Hope, D. A., Mocarski, R., Meyer, H., King, R., & Woodruff, N. (2019). The provider perspective on behavioral health care for transgender and gender nonconforming individuals in the Central Great Plains: A qualitative study of approaches and needs. *American Journal of Orthopsychiatry*. <http://dx.doi.org.myaccess.library.utoronto.ca/10.1037/ort0000406>
- Jaffee, K. D., Shires, D. A., & Stroumsa, D. (2016). Discrimination and Delayed Health Care Among Transgender Women and Men: Implications for Improving Medical Education and Health Care Delivery. *Medical Care, 54*(11), 1010–1016. <https://doi.org/10.1097/MLR.0000000000000583>
- James, S., Herman, J., Rankin, S., Keisling, M., Mottet, L., & Anafi, M. (2016). *The Report of the 2015 U.S. Transgender Survey*. <https://ncvc.dspacedirect.org/handle/20.500.11990/1299>
- Jones, B. A., Bouman, W. P., Haycraft, E., & Arcelus, J. (2019). Mental health and quality of life in non-binary transgender adults: A case control study. *International Journal of Transgenderism, 20*(2–3), 251–262. <https://doi.org/10.1080/15532739.2019.1630346>
- Reisner, S. L., Veters, R., Leclerc, M., Zaslow, S., Wolfrum, S., Shumer, D., & Mimiaga, M. J. (2015). Mental Health of Transgender Youth in Care at an Adolescent Urban Community Health Center: A Matched Retrospective Cohort Study. *Journal of Adolescent Health, 56*(3), 274–279. <https://doi.org/10.1016/j.jadohealth.2014.10.264>
- Salkas, S., Conniff, J., & Budge, S. L. (2018). Provider quality and barriers to care for transgender people: An analysis of data from the Wisconsin transgender community health assessment. *International Journal of Transgenderism, 19*(1), 59–63. <https://doi.org/10.1080/15532739.2017.1369484>
- Veale, J. F., Watson, R. J., Peter, T., & Saewyc, E. M. (2017). Mental Health Disparities Among Canadian Transgender Youth. *Journal of Adolescent Health, 60*(1), 44–49. <https://doi.org/10.1016/j.jadohealth.2016.09.014>



# Future Treatment of IFN- $\alpha$ -induced Depression with Exercise



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**ABSTRACT:** Shortly after beginning interferon-alpha (IFN- $\alpha$ ) therapy, patients battling certain infectious diseases and forms of cancer developed neuropsychiatric symptoms often seen in clinical depression. Though the exact mechanism underlying IFN- $\alpha$ -induced-depression remains to be elucidated, it is likely that dysregulated levels of pro-inflammatory cytokines and brain derived neurotrophic factor (BDNF) play a key role in its emergence. Exercise has been found to have protective effects in numerous illnesses, but its implication in IFN- $\alpha$ -induced-depression has yet to be investigated. Furthermore, the mechanism through which exercise exerts its effects is not well understood, although it is thought to use a cytokine-mediated pathway that influences BDNF expression. In research conducted by Callaghan, Rouine and O'Mara (2017), the IFN- $\alpha$  model of depression was used to assess the effects of treadmill running on mood and cognition in rats. Anxiety-like behavior in the open field test was reduced following exercise and, in forced swim tests depressive-like behavior also improved. In addition, treadmill running was found to have protective effects against deficits in spatial memory during object exploration tasks. Improved performance was observed in parallel with restored BDNF levels in the hippocampus and prefrontal cortex, which suggests that BDNF is involved in mediating the therapeutic effects of exercise. Given dysregulated levels of pro-inflammatory cytokines observed in the IFN- $\alpha$  model of depression, research by Callaghan et al. (2017) addresses the link between inflammation and BDNF in the development of depression and provides insight into the efficacy of exercise as a future treatment option.

**Key words:** IFN- $\alpha$ , depression, cytokines, inflammation, exercise, BDNF, mood, cognition

### ***Background***

Clinical depression is a mental illness that severely limits one's ability to engage in everyday life. It affects a wide range of individuals and has been identified as the leading cause of disability worldwide by the World Health Organization (WHO, 2017). Despite its high prevalence, the pathogenesis of depression has yet to be fully understood.

One of the mechanisms that may underlie the onset of depression is prolonged immune dysregulation (Wohleb, Franklin, Iwata, & Duman, 2016). Research has shown that pro-inflammatory cytokine markers, such as tumor necrosis factor (TNF)- $\alpha$  and interleukin-6 (IL-6), are present at higher concentrations in blood samples from individuals diagnosed with major depression (Dowlati et al., 2010). Coinciding with these findings, a certain form of depression has been reported in patients undergoing interferon-alpha (IFN- $\alpha$ ) therapy for the treatment of hepatitis C virus infections and various types of cancer (Felger, Haroon, Woolwine, Raison, & Miller, 2016; Miller, Maletic, & Raison, 2009). Patients often present with various neuropsychiatric symptoms such as fatigue, anhedonia and social withdrawal (Lotrich, 2009). IFN- $\alpha$ -induced depression models are therefore used in animal studies to identify compromised biological pathways in inflammation-associated depression.

A potential mechanism underlying the IFN- $\alpha$  model of depression is impaired cytokine regulation of growth factors such as brain derived neurotrophic factor (BDNF). BDNF serves important roles in the survival of differentiated neurons and synaptic plasticity in the brain (Park & Poo, 2013). Animal models of depression show a decline in BDNF expression that is most notably seen in the hippocampus and prefrontal cortex, areas of the brain that are critical for memory and cognition (R. S. Duman & Monteggia, 2006). Research by Tong, Balazs, Soiapornkul, Thangnipon, & Cotman (2008) found that BDNF expression was particularly impaired with experimental treatment of the pro-inflammatory cytokine interleukin-1beta (IL-1 $\beta$ ). IL-1 $\beta$  is commonly implicated in the pathobiology of neurodegeneration. Rats treated

with IFN- $\alpha$  showed elevated levels of IL-1 $\beta$  alongside disrupted hippocampal neurogenesis (Kaneko 2006). IFN- $\alpha$  is thus thought to indirectly compromise the neuroprotective action of BDNF through a cytokine-mediated mechanism.

Although there are many pharmacological interventions available for the treatment of depression, many patients struggle with the side effects and high relapse rates persist with continued use of maintenance antidepressants (Bockting et al., 2008). Complementary or alternative measures to treating depression are crucial for individuals that are unsatisfied with their prescriptions as well as for those who do not seek medical treatment. Exercise was proposed as an alternate means of treating depression as it has shown to have protective effects for cognitive and behavioral symptoms in both animal models and human studies (Cotman, Berchtold, & Christie, 2007). The benefits of physical activity have yet to be evaluated as a treatment of patients with IFN- $\alpha$ -induced depression. New treatment recommendations would be of great importance to avoid discontinuing IFN- $\alpha$  therapy once neuropsychiatric symptoms begin to emerge.

While the precise mechanism through which exercise improves mood and cognition remains to be elucidated, IFN- $\alpha$  models present an opportunity to further investigate the neuroimmunological basis of its effects. IFN- $\alpha$ -induced depression may emerge from IL-1 $\beta$  dysregulation of BDNF (Kaneko et al., 2006) and recent literature suggests that exercise may exert antidepressant effects through the same pathway. Brains of exercised rats were found to exhibit increased BDNF expression (Bechara, Lyne, & Kelly, 2014) and Nichol et al. (2008) found that exercise reduced IL-1 $\beta$  levels in transgenic models of Alzheimer's disease in rats. However, whether pro-inflammatory cytokines directly regulate BDNF to mediate the neuroprotective effects of exercise remains unknown.

### ***Major Results***

Callaghan et al. (2017), injected rats either with IFN- $\alpha$  or a saline control prior to running on shock-delivering treadmills or remaining sedentary. This procedure was repeated three times a week in order to investigate the effects of exercise on the IFN- $\alpha$ -induced depression model. After one month, exercise was found to reverse the changes induced by IFN- $\alpha$  on mood, cognition, and BDNF levels (Callaghan et al. 2017). Exercised rats treated with IFN- $\alpha$  exhibited reduced anxiety-like behavior in an open-field test with greater exploration of the center, as well as higher climbing scores in a forced swim test, revealing a decline in depressive-like behavior. In an object exploration task that assessed cognitive deficits induced by IFN- $\alpha$ , exercise was also found to improve spatial memory through discrimination of novel and displaced objects. Importantly, Callaghan et al.'s (2017) findings demonstrate that exercise may alleviate cognitive and behavioral symptoms of IFN- $\alpha$ -induced depression.

To further investigate the underlying mechanism at which this occurs, Callaghan et al. (2017) measured BDNF levels in tissue samples harvested from the hippocampus and prefrontal cortex. BDNF expression increased following exercise treatment, coinciding with improvements in the behavioral paradigms of depression. This suggests that BDNF is likely to play a role in mediating the effects of exercise. The collective findings of Callaghan et al. (2017) provide evidence for the efficacy of exercise as a future treatment option of IFN- $\alpha$ -induced depression.

### ***Conclusions & Discussion***

Major findings from Callaghan et al. (2017) include reduced BDNF levels, seen in parallel with impaired mood and cognition in IFN- $\alpha$ -treated rats. This relationship remained consistent after an exercise intervention improved both BDNF expression and behavioral deficits.

Callaghan et al.'s (2017) research provides further evidence that BDNF plays an important role in antidepressant action and suggests that exercise could effectively treat symptoms of IFN- $\alpha$ -induced depression. It is well-understood that BDNF function is compromised in depression (R. S. Duman & Monteggia, 2006) and that exercise was found to induce changes in BDNF (Bechara et al., 2014); however, several pro-inflammatory cytokines are implicated in IFN- $\alpha$  treatment and are thought to disrupt BDNF. Findings from Callaghan et al. (2017) expand on existing literature by demonstrating that the benefits of exercise on behavior and BDNF persist in the context of IFN- $\alpha$ -induced cytokine dysregulation. Although exercise has already been explored as an effective means of treating depression, Callaghan et al.'s (2017) research suggests that the benefits of exercise can also be applied to IFN- $\alpha$  induced depression and provides insight into the underlying neurobiology of its effects. Their findings serve as a starting point to better understand BDNF as a link between inflammation and depression.

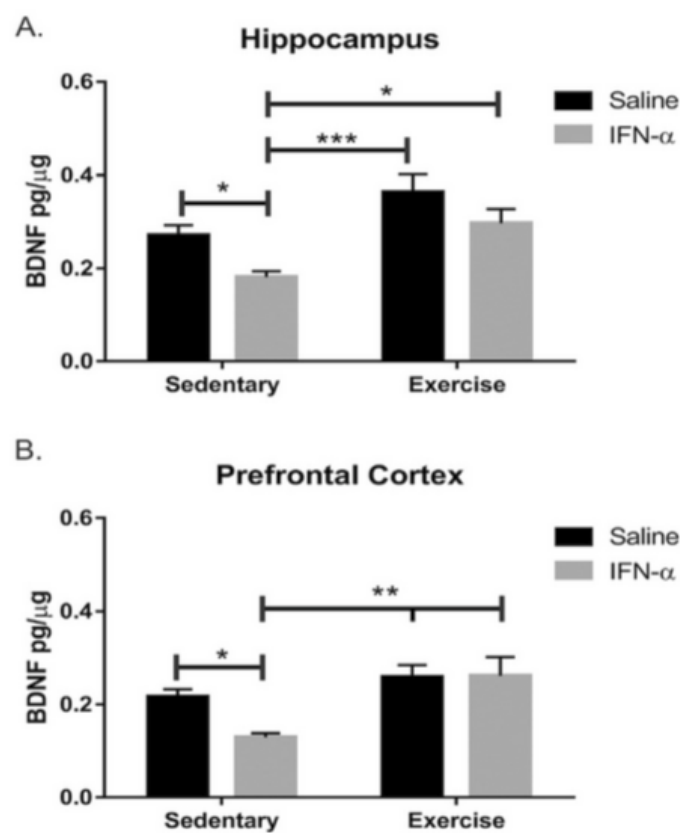


Figure Adapted from Callaghan et al. (2017). *Physiology & Behavior*, 179, 377-383.

**Figure 1.A.** Exercise protects against the reduction in hippocampal BDNF levels induced by IFN- $\alpha$  when compared to sedentary IFN- $\alpha$ -treated control rats. **B.** Protective effects of exercise on BDNF in IFN- $\alpha$ -treated rats are additionally observed in the prefrontal cortex.

### Critical Analysis

Findings from Callaghan et al. (2017) demonstrate therapeutic effects of exercise on cognition, behavior and BDNF levels in a novel context of IFN- $\alpha$ -induced depression. Given evidence from this study, that also confirms research from Fahey, Hickey, Kelleher, O'Dwyer



and O'Mara (2007), human recombinant IFN- $\alpha$  induces neuropsychiatric symptoms in rats that accurately reflect those seen in human patients undergoing IFN- $\alpha$  therapy. The IFN- $\alpha$  model serves as a useful tool for directly studying the efficacy of exercise in a human-like form of depression. Findings from Callaghan et al. (2017) thus have great relevance for extending the treatment options for IFN- $\alpha$ -induced depression with regular exercise.

Callaghan et al. (2017) proposed that immune dysregulation from IFN- $\alpha$  treatment may contribute to changes in BDNF, however, they could have gone further as to determine whether exercise also influences BDNF through this exact pathway. Since IFN- $\alpha$  is thought to suppress BDNF expression through fluctuations in pro-inflammatory cytokines (Tong et al., 2008), the researchers should have used ELISA assays to measure cytokine levels alongside BDNF and monitor the immune response induced by treadmill running.

Although exercise improved anxious and depressed behavior in IFN- $\alpha$ -treated rats, it failed to exert the same effects on mood in healthy controls treated with saline (Callaghan et al. 2017). This is not consistent with other research where exercised controls also demonstrate improved performance in behavioral paradigms of anxiety and depression when compared to sedentary controls (C. H. Duman, Schlesinger, Russell, & Duman, 2008). The authors attribute their results to frequent transferring of sedentary controls outside their home cages to have access to stationary treadmills (Callaghan et al. 2017). Although this suggests that excess stimulation from handling sedentary controls obscures the effects of treadmill running, exercise was still found to benefit spatial memory; exercised saline-treated controls demonstrated improved cognitive performance in the object exploration task (Callaghan et al., 2017). The discrepancy between the effects of exercise on mood and cognition in healthy controls could have been further investigated with increased experiment trials as this was not consistent with task performance in IFN- $\alpha$ -treated rats.

In order to prevent the formation of negative associations between exercise and treatment injections, exercised rats were introduced to treadmill running two weeks prior to the first IFN- $\alpha$  or saline treatment (Callaghan et al. 2017). This eliminated confounding factors of the exercise protocol and allowed more accurate conclusions to be drawn from the beneficial effects of exercise on IFN- $\alpha$ -induced depression. However, Callaghan et al. (2017) used a forced exercise intervention where motorized treadmills delivered electric shocks to ensure rats continuously ran throughout the one-hour sessions. Mandatory running was found to negatively impact stress levels by inducing greater release of corticotropin-releasing hormone in the amygdala of rats (Hand et al., 2002). Since forced exercise has the potential to act as a stressor and may obscure results of behavioral adaptation in depressed subjects, voluntary wheel running provides an alternative method to studying the effects of exercise. Voluntary physical activity, with access to a running wheel, improved depressive-like behavior in a maternal separation animal model and reduced hippocampal expression of inflammatory-associated genes; neither outcome was observed in rats assigned to a forced treadmill running intervention (Sadeghi, Peeri, & Hosseini, 2016). In research by Leasure & Jones (2008), rats that were free to run at their own discretion showed reduced anxiety-like behavior in an open field test when compared to those forced to use motorized treadmills. Although forced exercise was shown to benefit mood and cognition in Callaghan et al. (2017), research suggests that forced and voluntary exercise impact animal behavior at varying degrees and may have implications for the effects of exercise in the IFN- $\alpha$ -induced depression model.

### ***Future Directions***

The observed improvements in mood, cognition and BDNF levels of IFN- $\alpha$ -treated rats after treadmill running have important implications for future research. Findings

from Callaghan et al. (2017) further elucidate the role of BDNF in the development of IFN- $\alpha$ -induced depression and suggest that it may also be important in mediating the therapeutic effects of exercise in this form of inflammation-associated depression. Future studies that monitor fluctuations in pro-inflammatory cytokines alongside changes in BDNF could reveal whether the effects of exercise are dependent on this pathway. If ELISA assays indicate a decline in pro-inflammatory cytokine levels after exercise, observed alongside restored BDNF levels, it would suggest that a cytokine-mediated regulation of BDNF may be involved in the antidepressant effects of exercise. Alternatively, if cytokine levels are unchanged in exercised subjects that exhibit increased BDNF, this would demonstrate that physical activity likely influences BDNF through other biological pathways. The exact mechanism through which exercise influences BDNF levels remains to be elucidated and further research in IFN- $\alpha$  models will provide insight on the interplay between cytokines, BDNF and exercise.

As mentioned in the critical analysis, Callaghan et al. (2017) observed beneficial effects of exercise only in IFN- $\alpha$  treated rats, and not in healthy controls, when evaluating the results from behavioral paradigms of anxiety and depression. To eliminate concerns that frequent handling and exposure to a stationary treadmill obscures the results of exercise, future studies should include sedentary cage controls along with treadmill controls. If controls that have access to a stationary treadmill perform significantly better than sedentary controls housed in cages, it could indicate that exposure to an exercise enriched environment may contribute to the therapeutic effects of treadmill running. Future research should distinguish whether stimulation from a novel environment rather than physical exertion is responsible for the observed effects of exercise as this could have clinical implications for treatment recommendations of IFN- $\alpha$ -induced depression.

However, it is also possible that stress induced by forced treadmill running contributed to the lack of consistent results following exercise. Future studies that employ the use of both motorized treadmills and voluntary wheel running would be able to conclude whether there is a significant difference between the two forms of exercise in IFN- $\alpha$ -induced depression. If rats assigned to the voluntary condition have improved performance in behavioral paradigms, it might indicate that internal motivation to exercise contributes to its effectiveness. Since both protocols are currently used in research on depression, it would be important to determine whether it is accurate to compare results across studies that have used different models of exercise.

Despite the areas of improvement for future methodology, findings from Callaghan et al. (2017) may provide a basis for further studies comparing the efficacy of exercise to antidepressant medications. Since exercise would ultimately be considered a treatment option for patients undergoing IFN- $\alpha$  therapy, evidence that its effects are comparable to those produced by antidepressant drugs may be re-assuring for those questioning the efficacy of exercise. In addition, future studies should also investigate whether synergistic effects are observed when used in conjunction. If the combination of both medication and exercise is shown to have greater effect in alleviating symptoms, it may further expand treatment options for patients that develop depression during IFN- $\alpha$  therapy. Continued research may reveal the precise mechanism by which exercise improves IFN- $\alpha$ -induced depression and can therefore promote it as a means of treating depression.

## References

- Bechara, R. G., Lyne, R., & Kelly, A. M. (2014). BDNF-stimulated intracellular signalling mechanisms underlie exercise-induced improvement in spatial memory in the male Wistar rat. *Behavioural Brain Research*, 275, 297–306. <https://doi.org/10.1016/j.bbr.2013.11.015>
- Bockting, C. L. H., ten Doesschate, M. C., Spijker, J., Spinhoven, P., Koeter, M. W. J., & Schene, A. H. (2008). Continuation and maintenance use of antidepressants in recurrent depression. *Psychotherapy and Psychosomatics*, 77(1), 17–26. <https://doi.org/10.1159/000110056>
- Callaghan, C. K., Rouine, J., & O'Mara, S. M. (2017). Exercise prevents IFN-alpha-induced mood and cognitive dysfunction and increases BDNF expression in the rat. *Physiology & Behavior*, 179, 377–383. <https://doi.org/10.1016/j.physbeh.2017.07.018>
- Cotman, C. W., Berchtold, N. C., & Christie, L.-A. (2007). Exercise builds brain health: key roles of growth factor cascades and inflammation. *Trends in Neurosciences*, 30(9), 464–472. <https://doi.org/10.1016/j.tins.2007.06.011>
- Dowlati, Y., Herrmann, N., Swardfager, W., Liu, H., Sham, L., Reim, E. K., & Lanctot, K. L. (2010). A meta-analysis of cytokines in major depression. *Biological Psychiatry*, 67(5), 446–457. <https://doi.org/10.1016/j.biopsych.2009.09.033>
- Duman, C. H., Schlesinger, L., Russell, D. S., & Duman, R. S. (2008). Voluntary exercise produces antidepressant and anxiolytic behavioral effects in mice. *Brain Research*, 1199, 148–158. <https://doi.org/10.1016/j.brainres.2007.12.047>
- Duman, R. S., & Monteggia, L. M. (2006). A neurotrophic model for stress-related mood disorders. *Biological Psychiatry*, 59(12), 1116–1127. <https://doi.org/10.1016/j.biopsych.2006.02.013>
- Fahey, B., Hickey, B., Kelleher, D., O'Dwyer, A.-M., & O'Mara, S. M. (2007). The widely-used anti-viral drug interferon-alpha induces depressive- and anxiogenic-like effects in healthy rats. *Behavioural Brain Research*, 182(1), 80–87. <https://doi.org/10.1016/j.bbr.2007.05.005>
- Felger, J. C., Haroon, E., Woolwine, B. J., Raison, C. L., & Miller, A. H. (2016). Interferon-alpha-induced inflammation is associated with reduced glucocorticoid negative feedback sensitivity and depression in patients with hepatitis C virus. *Physiology & Behavior*, 166, 14–21. <https://doi.org/10.1016/j.physbeh.2015.12.013>
- Hand, G. A., Hewitt, C. B., Fulk, L. J., Stock, H. S., Carson, J. A., Davis, J. M., & Wilson, M. A. (2002). Differential release of corticotropin-releasing hormone (CRH) in the amygdala during different types of stressors. *Brain Research*, 949(1–2), 122–130. [https://doi.org/10.1016/s0006-8993\(02\)02972-4](https://doi.org/10.1016/s0006-8993(02)02972-4)
- Kaneko, N., Kudo, K., Mabuchi, T., Takemoto, K., Fujimaki, K., Wati, H., ... Kanba, S. (2006). Suppression of cell proliferation by interferon-alpha through interleukin-1 production in adult rat dentate gyrus. *Neuropsychopharmacology : Official Publication of the American College of Neuropsychopharmacology*, 31(12), 2619–2626. <https://doi.org/10.1038/sj.npp.1301137>
- Leasure, J. L., & Jones, M. (2008). Forced and voluntary exercise differentially affect brain and behavior. *Neuroscience*, 156(3), 456–465. <https://doi.org/10.1016/j.neuroscience.2008.07.041>
- Lotrich, F. E. (2009). Major depression during interferon-alpha treatment: vulnerability and prevention. *Dialogues in Clinical Neuroscience*, 11(4), 417–425.
- Miller, A. H., Maletic, V., & Raison, C. L. (2009). Inflammation and its discontents: the role

- of cytokines in the pathophysiology of major depression. *Biological Psychiatry*, *65*(9), 732–741. <https://doi.org/10.1016/j.biopsych.2008.11.029>
- Nichol, K. E., Poon, W. W., Parachikova, A. I., Cribbs, D. H., Glabe, C. G., & Cotman, C. W. (2008). Exercise alters the immune profile in Tg2576 Alzheimer mice toward a response coincident with improved cognitive performance and decreased amyloid. *Journal of Neuroinflammation*, *5*, 13. <https://doi.org/10.1186/1742-2094-5-13>
- Park, H., & Poo, M. (2013). Neurotrophin regulation of neural circuit development and function. *Nature Reviews. Neuroscience*, *14*(1), 7–23. <https://doi.org/10.1038/nrn3379>
- Sadeghi, M., Peeri, M., & Hosseini, M.-J. (2016). Adolescent voluntary exercise attenuated hippocampal innate immunity responses and depressive-like behaviors following maternal separation stress in male rats. *Physiology & Behavior*, *163*, 177–183. <https://doi.org/10.1016/j.physbeh.2016.05.017>
- Tong, L., Balazs, R., Sojampornkul, R., Thangnipon, W., & Cotman, C. W. (2008). Interleukin-1 beta impairs brain derived neurotrophic factor-induced signal transduction. *Neurobiology of Aging*, *29*(9), 1380–1393. <https://doi.org/10.1016/j.neurobiolaging.2007.02.027>
- WHO | Depression and Other Common Mental Disorders. (2017). *WHO*. Retrieved from [https://www.who.int/mental\\_health/management/depression/prevalence\\_global\\_health\\_estimates/en/#.XddroY-KaBs.mendeley](https://www.who.int/mental_health/management/depression/prevalence_global_health_estimates/en/#.XddroY-KaBs.mendeley)
- Wohleb, E. S., Franklin, T., Iwata, M., & Duman, R. S. (2016). Integrating neuroimmune systems in the neurobiology of depression. *Nature Reviews. Neuroscience*, *17*(8), 497–511. <https://doi.org/10.1038/nrn.2016.69>





## **Mood and Social Judgement**

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The Fundamental Attribution Error (FAE) or the attribution effect refers to a person's tendency to explain other people's behaviour using dispositional attributes (Ross, 1977). This is when a person effectively negates situational or contextual factors in explaining behaviour and relies on personality-based attributes while making social judgements about other people. The FAE is classically studied with two participants, where one is assigned to ask questions while the other is asked to respond to the questions (Van Boven, Kamada, & Gilovich, 1999). In a study where a questioner told the responders how to answer the questions, questioners still rated the responder as selfish if they gave selfish answers and altruistic if they gave more altruistic answers. This shows the focus of the questioner on the disposition of the responder rather than the situational effect of being coerced into answering in a particular way (Van Boven et al., 1999). Attributions depend on a number of factors, such as the mood of an individual making the attribution (Forgas, 1998). Mood refers to transient feelings of affect that are long-lasting and of low-intensity (Isbell & Lair, 2013). Mood is thought to affect the way people process social information. We make social judgements in our everyday lives, and this is influenced by the affective state(s) one is experiencing. These states may be positive (such as when one is happy or elated), negative (when one is sad or feeling low), or neutral (where the participant is not temporarily induced into a negative or positive mood state). Hence, this paper aims to explore the research question: "How do negative or positive moods influence social judgements of familiar and unfamiliar others (targets)?"

Social judgement of others could be measured by looking at instances of people committing the Fundamental Attribution Error (FAE) while forming impressions of other people. Temporary moods, or affective states induced by the experiment temporarily, are shown to influence the instances of the FAE. Previous research on the FAE by Forgas (1998) has shown that positive moods such as being happy or elated increase the instances of the fundamental attribution error while negative moods such as being sad or feeling low decrease the instances of the fundamental attribution error. There are two broad explanations for this effect. Bower (1981) proposed the associative network theory which suggests that the mood being experienced activates material in memory that is congruent with the mood itself, and this is used to interpret incoming information. In other words, people who are put in a positive mood experience the environment more positively or optimistically, because their positive mood activates associative networks in the mind that are congruent with their mood. The mood, according to this model, has a priming effect on the individual. In order to maintain this optimistic outlook of our social world, we engage in affect maintenance strategies. Thus, we process information less deeply and use lesser cognitive resources when we encounter information in our social world if we are in a positive mood in order to maintain the optimistic state we have been primed with. This leads to top-down processing, wherein we rely on factors that are already stored in our associative memory networks, in turn causing a biased attribution of the social world around us and engaging in the FAE (Fiedler, Asbeck, & Nickel, 1991; Fiedler, Pampe, & Scherf, 1986). On the other hand, when we experience negative moods, we activate associative networks congruent with this negative mood and engage in bottom-up processing, or a deeper level of processing of the environment. Thus, we are less likely to engage in the FAE when put into a negative mood because our perception of the environment is less biased.

A more functional explanation has been proposed by Schwarz and Clore (2007) through their affect-as-information (AAI) model, which explains that people depend on their affective states as a source of information regarding the overall status of the world around them (Schwarz, 1990). In other words, experiencing a positive mood indicates that their environment is safe and certain while a negative mood informs them that their environment is

troublesome or uncertain. As a method to get rid of the uncertainty in the environment, people engage in more complex information processing or mood repair. Hence, people in unpleasant moods are more likely to search for and use information to explain and repair their affective state than are people in pleasant moods (Clark & Isen, 1982; Forgas, 1991; Sedikides, 1994).

Possible limitations of the associative network theory and the AAI indicate that it may not be mood but instead features of the target that affect the social judgement of the target. Whether or not the target is similar to oneself or not influences processing of the target. This was demonstrated in a study by Forgas (1995), where participants were more affected by their temporary mood state on the dispositional judgement of others when the target in question was typical, or prototypically similar to the participant(s). Atypical targets likely required more in-depth processing of their situational and dispositional attributes, and hence, people in a positive mood also tended to think more deeply about targets dissimilar to them. This can be explained by how the brain spends less time processing information in-line with our schemas, and more time processing information that is atypical with what we already know.

Furthermore, other reasons for the FAE could be the salience of contextual restraints of the target. This implies that when people are made aware of the contextual limitations of why a target is behaving the way they are, people from different cultures respond and commit different levels of the FAE. In a study by Choi and Nisbett (1998), American and Korean university students were both given essays written by a target that were either truly in support of a participant's view on capital punishment or were coerced views of targets about capital punishment. The university students were made aware of the fact that these views may not be the author's true views. Yet, it was seen that both groups of participants committed the FAE by attributing the attitudes in the essay to the person's dispositional beliefs rather than the situation (being forced into writing from a certain viewpoint). This, however, was changed when salience of contextual restraints of a target was improved. This means the participants were now given essays to write but were either told that they had no choice but to write about the views they were presented with (contextually limiting) or that they were free to write their own opinions. Their instructions now mirrored those of the target. The Korean participants, or those from more collectivistic cultures, now focused more on the situation due to being made aware of the situational constraints on them. They were less likely to commit the FAE. The American participants, who were from a more individualistic culture, still preferred dispositional explanations and went on to commit the FAE more often than the Korean participants. This provides insight on the role of culture in the commitment of the FAE, when salience of contextual limitations of target is increased. Nonetheless, there could be speculation on how much FAE was found when participants wrote in first-person or in third-person. This is known as self-distancing from the target and it affects rates of FAE.

The notion that self-distancing influences rates of the FAE was cleverly demonstrated in a study by Goldberg (2011) where participants read a pro-Obama essay. As in the previous study, they were informed that the writers of the essay had not been given a choice and were told to explicitly write an essay supporting Obama. The participants were then asked to gauge the author's true beliefs about Obama. Before doing so, however, the participants were divided into two groups and wrote the essay themselves as well—one wrote the essay in third person (self-distance group) and one wrote it in first person. After writing the essay, participants rated the author's true position on Obama. It was seen that participants in the self-distanced group showed lesser instances of the FAE compared to the group who wrote in first person. This could be due to how having a more removed perspective may allow people to be more attentive to situational factors providing alternative explanations for behavior, thereby reducing the effect of the FAE. Adopting a distanced perspective is also typically harder for people to do, so

the cognitive difficulty of the task could help eliminate the FAE as negative affective states influence people to think more objectively and consider the circumstances when the cognitive challenge is greater.

Hence, these features of the target, such as the salience of the target, self-distance from the target or similarity of the target to the person in question, moderate the effects of mood influencing the FAE. An important factor that has not been covered in the literature is the effect of familiarity of the target on affective states and FAE. This paper hypothesizes that if a target is more familiar, there will be lesser instances of the FAE even when the participant is in a positive affective state. Familiarity would likely decrease the amount of FAE because it causes people to think more about the totality of circumstances of a known target. In other words, when we are familiar with someone, we are more likely to consider their circumstances rather than when we are unfamiliar with them because we do not know much about the circumstances in this condition. This prediction has far-reaching implications, because any negative behaviour in one's in-group is likely attributed to situational factors, and may lead to the halo-effect. On the other hand, negative behaviour by an out-group may lead to incorrect dispositional biases and stereotyping.

## *Method*

### *Participants*

Participants signed up through volunteer sampling using an online advertisement of the study (with a set age criteria) and were compensated for their participation. There was a total of 300 participants from different cultural backgrounds and the age range of participants was between 19 and 25 years. The age of the confederate was roughly matching with the participant to prevent participants from making a personality judgement of their partners based on age rather than dispositional or situational factors. There were 150 male and 150 female participants in the experiment.

### *Design*

*Independent variables:* The independent variables are the induced mood (positive, negative or control) and the familiarity of the partner (familiar or unfamiliar). The experiment follows a 3 X 2 complete between-subjects design.

*Dependent variable:* In the social perception task, participants made personality judgements about their partner and rated their global impressions about their partner on six scales, which included terms such as likeable-dislikeable and competent-incompetent (Forgas, 1998). The dependent variable is the instances or rate of the fundamental attribution error committed, measured through the number of positive or negative judgements participants made about their partner.

### *Procedure*

Participants were made to take part in two seemingly unrelated studies as part of this experiment, and were unaware that their biases in attribution were being tested. The first study comprised a set of spatial ability tasks, and the second was a study in social perception, or the attribution task, followed by a shorter spatial ability task. The study comprised a total of two sessions of an hour each, completed over two consecutive days. For the first part of the study on the first day of the experiment, participants were paired with a confederate and worked together in their pair to solve a set of spatial ability tasks, adapted from the Stanford Binet Intelligence Scale (Rauscher, Shaw and Ky, 1993). The spatial reasoning tasks comprised a



pattern analysis test and a multiple-choice paper-folding and cutting test.

Participants and confederates spent approximately an hour together solving various tasks, so they had the chance to talk and interact with one another. The second study took part on the next day, where participants were told that their partner (actually the confederate) was late, and no explanation was given for their tardiness. The time of 15 minutes was chosen as it was enough to get participants slightly bothered or irritated about their partners lateness, but it was not too long such that it would make them hostile towards their partner. Thus, any subsequent judgements about their partner were to be a result of the irritation they felt due to their partner's tardiness. The participants waited for their partners in three waiting rooms that had monitors with either a sad clip (negative mood group), a happy clip (positive mood group) or a neutral clip (control group) playing while participants waited for the period of 15 minutes. The participants were divided into these groups randomly, which means there was no set criteria for admission into any of the groups. Each of the groups waited for their partners separately. The video clips were meant to put participants temporarily into one of the three mood groups.

The confederates then walked in and some participants in each group were paired again with their original confederates (familiar other) while some were paired with new confederates they had never met before (unfamiliar other).

The second task, also known as the attribution task, involved participants first making personality judgements about their partner and then rating them on six 7-point bipolar scales (Forgas, 1998). The scales had terms such as likeable-dislikeable and competent-incompetent, with the positive adjectives (such as likeable) on the lower end of the scale and negative adjectives (such as dislikeable) on the upper end of the scale. Hence, if participants selected more of the negative adjectives on the upper end of the scale, they committed more instances of the FAE because they attributed the lateness of the confederate to their disposition (to the confederate always being late and being a 'tardy person' rather than considering the situation). On the other hand, if participants chose more positive adjectives on the lower end of the 7-point scale, this meant that they did not attribute the lateness of the confederate to their disposition and think of the confederate negatively, but made situational attributions and thought of the confederate positively. Thus, selecting more positive adjectives from the lower end of the scale meant that participants committed less of the FAE. The second part of the same task was solving similar spatial ability tasks as the previous day so as to make sure participants were not explicitly aware of the aim of the experiment.

### ***Results***

The results of the social perception task showed support for the hypothesis, as seen in Appendix A. Overall, people displayed significantly more instances of the FAE with unfamiliar confederates compared to familiar confederates. Moods also influenced the instances of FAE, where participants in a positive mood displayed more FAE than participants in a neutral or negative mood. The most significant rates of the FAE were seen when a person was in a positive mood and interacted with an unfamiliar other. The lowest rates of the FAE were displayed when the participant was put into a negative mood and interacted with a familiar other.

### ***Discussion***

The results above can help explain the formation of stereotypes for particular out-groups. In other words, due to the unfamiliarity of an out-group member, people often tend to attribute behaviours to the disposition of the person and not situational factors. These could then get reinforced if exposure to the outgroup is minimal as unfamiliarity increases.

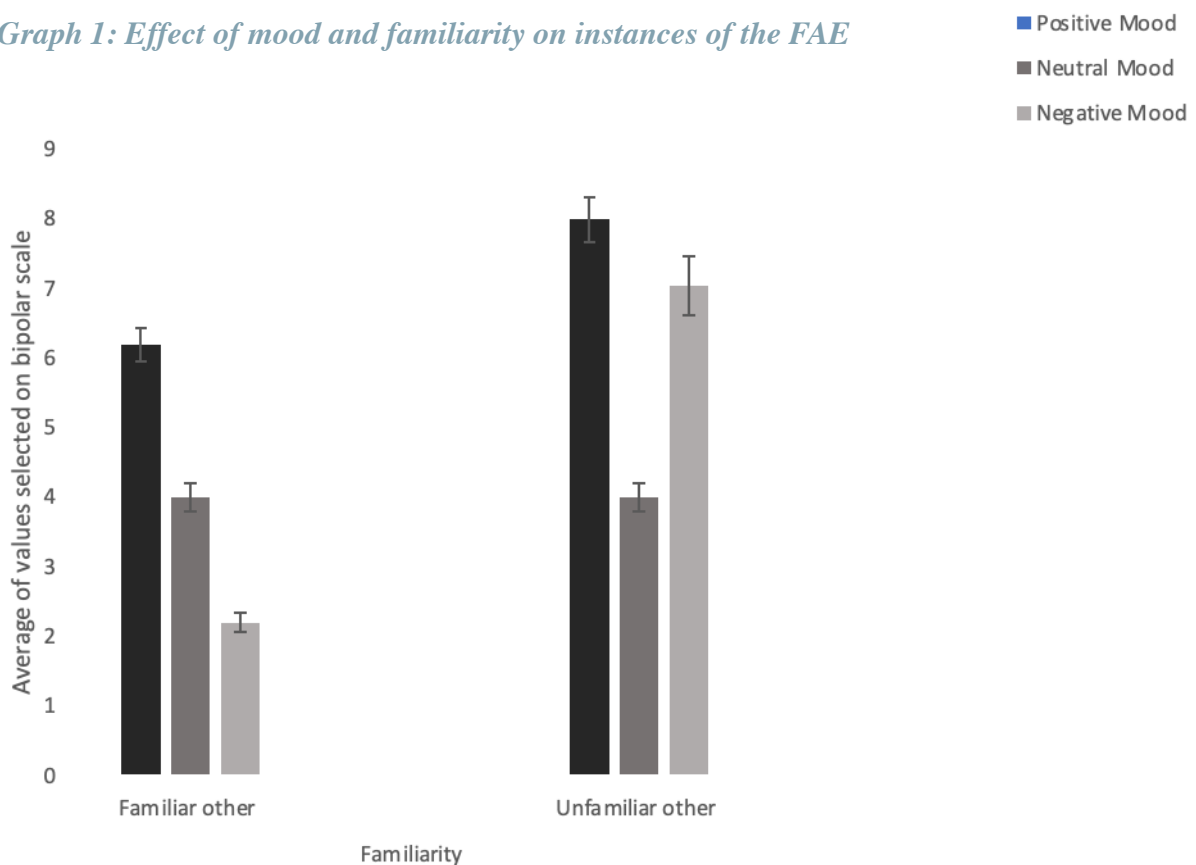
Even when the behaviour elicits negative feelings in an individual, these stereotypes may be formed because, as predicted, unfamiliarity leads to the FAE even when the mood is negative. However, this effect is lesser than when the mood is positive. This could have implications for the criminal justice system, as members of the jury may make preliminary judgements about an unfamiliar suspect and attribute their actions to their disposition, causing a preliminary judgement of guilt.

One possible limitation of this study is that it does not take into account whether the participant and confederate are of the same race or of different races. The cross-race effect states that people are more likely to identify individuals from their own race due to higher exposure to these individuals. Hence, when participants are paired up with an unfamiliar other, but both are of the same race, there may be a feeling of familiarity compared to those participants who are paired with people of different races. Also, it may not be familiarity but racial stereotypes that influence attributional judgements of people. One way to rule this out would be recruiting participants from the same race, but this would in turn limit generalisability of results. Another limitation of this study is that the age range of participants in the study was very narrow (19-25 years) and this also limits the generalisability of the results to a larger population.

Future research should explore the ways in which this bias towards unfamiliar and familiar others could be reduced, for example, by finding methods to put people in a neutral mood before making important attributional decisions, such as jurors' decisions. Also, other moderating effects on familiarity could be explored, such as the effect of gender on making attributional decisions for familiar and unfamiliar others.

## Appendix A: Graph of Results

*Graph 1: Effect of mood and familiarity on instances of the FAE*



## References

- Choi, I., & Nisbett, R. E. (1998). Situational salience and cultural differences in the correspondence bias and actor-observer bias. *Personality and Social Psychology Bulletin*, 24(9), 949-960.
- Clark, M. S., & Isen, A. M. (1982). Toward understanding the relationship between feeling states and social behavior. *Cognitive social psychology*, 73, 108.
- Fiedler, K., Asbeck, J., & Nickel, S. (1991). Mood and constructive memory effects on social judgement. *Cognition & Emotion*, 5(5-6), 363-378.
- Fiedler, K., Pampe, H., & Scherf, U. (1986). Mood and memory for tightly organized social information. *European Journal of Social Psychology*, 16(2), 149-164.
- Forgas, J. P. (1995). Strange couples: Mood effects on judgments and memory about prototypical and atypical relationships. *Personality and Social Psychology Bulletin*, 21(7), 747-765.
- Forgas, J. P. (Ed.). (1991). *Emotion and social judgments* (Vol. 23). Taylor & Francis.
- Forgas, J. P. (1998). On being happy and mistaken: Mood effects on the fundamental attribution error. *Journal of personality and social psychology*, 75(2), 318.
- Forgas, J. P., & Moylan, S. J. (1991). Affective influences on stereotype judgements. *Cognition & Emotion*, 5(5-6), 379-395.
- Goldberg, A. (2011). *Effects of a self-distancing perspective on the fundamental attribution error: An attempt at de-biasing* (Doctoral dissertation).
- Isbell, L. M., & Lair, E. C. (2013). 21 Moods, Emotions, and Evaluations as Information. *The Oxford handbook of social cognition*, 435-485.
- Rauscher, F. H., Shaw, G. L., & Ky, C. N. (1993). Music and spatial task performance. *Nature*, 365(6447), 611-611.
- Ross, L. (1977). The intuitive psychologist and his shortcomings: Distortions in the attribution process. In L. Berkowitz (ed.), *Advances in Experimental Social Psychology*, 10, 173-214.
- Schwarz, N., & Clore, G. L. (2007). Feelings and phenomenal experiences. *Social psychology: Handbook of basic principles*, 2, 385-407.
- Van Boven, L., Kamada, A., & Gilovich, T. (1999). The perceiver as perceived: Everyday intuitions about the correspondence bias. *Journal of Personality and Social Psychology*, 77(6), 1188.

# Cryonic Life Extension for Terminally-Ill Patients: Permissible or Not?



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The power of contemporary medicine is limited; one in four Canadians will die from cancer, and others will die from non-cancer related terminal illnesses (Canadian Cancer Society, 2015). Rather than choosing traditional burial or cremation, an increasing number of patients are opting for cryonics. Cryonics describes the low-temperature preservation of individuals who cannot be treated by current medicine in anticipation of potential resuscitation and repair by future medical advancements. Preservation begins immediately after legal death (Moen, 2015). Respiration and circulation is artificially restored, and the body is cooled to 0°C-10°C (Best, 2008; Moen, 2015). Via vitrification, the body's cell fluids are replaced with cryoprotectants, which are antifreeze solutions that prevent ice-crystal formation and fracturing when the body is lowered to cold temperatures (Moen, 2015). The body is then submerged in liquid nitrogen at -196°C and held in cryogenic storage until resuscitation (Moen, 2015). The caveat is the lack of a resuscitation protocol; thus, individuals are stored indefinitely until a reversal procedure is established.

Cryonics hinges on a non-traditional definition of death: information-theoretical death. An individual is not information-theoretically dead until the neural structures that govern one's personhood, like memories and personality, are damaged or degraded beyond repair such that restoration to an emotionally intact individual becomes impossible (Doyle, 2012; Moen, 2015). A cryonically-preserved individual is legally and physically dead (heart stopped, brain dead), but is not information-theoretically dead as the cryogenic process preserves brain tissue and information (Doyle, 2012). While it is a promising technology that offers a lifeline to terminally-ill patients, cryonics usage should not be ethically permissible because the benefits of its usage are outweighed by the uncertainty of resuscitation and cure development and the negative social implications associated with the post-resuscitation period.

From a deontological view, reanimating a dead individual is ethically immoral as it alters the meaning of death and defies the natural life cycle. Should a successful reanimation procedure be established, the legal socially-accepted definition of death will be challenged as preserved individuals may no longer be categorized as dead but instead existing in a temporarily suspended state during the transition to revival. Two classifications of death would be necessary: the legal definition of death for individuals that die naturally and information-theoretical death in regards to the cryopreserved. Furthermore, reviving a subset of the population disrupts the balance of nature. Death is inevitable for all organisms. Limited time enriches one's life experience by forcing individuals to prioritize and do what makes them happy. Granted, terminal-illnesses spontaneously arise and prematurely shorten one's lifespan before he or she can accomplish their goals. Yet, resuscitating and extending the lifespan of select individuals defies the current social norms of behavior and disregards the natural order; therefore, it should not be ethically permissible.

Principlists argue that patient autonomy is the most important factor with regards to healthcare decisions. Cryonics is an elective procedure, and terminally-ill patients have the right to preservation should they desire it. Patients will be informed that a thawing protocol may not be developed for numerous years, if ever. Healthcare providers must respect the wishes of patients that understand and accept the gamble.

The utility of cryonics preservation depends on the age of the patient. If he or she is young, such as a child, the beneficence principle argues that cryonics should be permissible because it provides the individual the opportunity to resume the life that illness took away from them. Conversely, most patients with terminal illnesses tend to be of older age. Resuscitation may not grant older individuals many additional years given their fragile state pre-death, and thus, there is low utility for older individuals to use cryonics. Anti-aging technology may be developed by the time individuals are thawed out, granting resuscitated elderly longer

lifespans. However, there is no indication of when or if this technology will be developed.

In terms of justice, cryonics companies reason that cryonics is not an “indulgence of rich people” (Alcor, 2019). The Alcor Life Extension Foundation is one of the largest cryonics companies. Currently, it has frozen 172 patients, and 1,283 others have made arrangements for cryopreservation with Alcor upon death (Alcor, 2019). The cost is a hefty \$200,000 for whole body preservation and \$80,000 for neurocryopreservation. However, most individuals pay via life insurance, rendering affordability a challenge for the middle-income class (Alcor, 2019). The flaw with this argument is that not all individuals can afford or have life insurance. In countries without universal health care, millions lack health insurance, such as the 27.5 million individuals in the U.S. in 2018 (US Census Bureau, 2019). It is unlikely that individuals without health insurance will have life insurance, so they would have to pay for cryonics out of pocket. Terminally-ill patients will already be footing large bills for prior medical treatment and hospitalization, and may no longer have the means to pay the 80k or 200k even with loans. Cryonics remains undeniably a privilege of the wealthy.

The most compelling principle violated in a principled view of cryonics is the non-maleficence of the technology. The preservation procedure is not more physically invasive than burial or cremation, both of which lead to the body’s degradation or destruction. On the other hand, cryonics physically preserves the body without harm. However, the issue lies in the potential negative social impacts on a patient post-resuscitation. It is difficult to determine the probability of whether and when a cryoprotected individual will be reanimated because it is dependent on the development of a reversal process and cure(s) to treat the individual’s illness. An individual could be frozen for decades or centuries before the conditions are met. Assuming successful revival, individuals may awake in a society whose cultures and norms vastly differ from their past life, thus causing social and emotional trauma. Individuals will lack tight knit family support systems, except for distant descendants or other cryonically preserved family members. Even then, family members may not overlap in their revival period depending on their medical conditions and the availability of cures. Additionally, frozen human subjects will be required for initial testing of resuscitation, and there is no guarantee that individuals will be revived harm-free without untreatable neurological and/or physical defects. One may argue that the thawing protocol will eventually be perfected to the point of no adverse side effects. However, resuscitation has greater risks and complexity than standard clinical trials. The overarching uncertainty of negative side effects of the unperfected technology renders cryonics usage unethical.

Not only does cryonics potentially harm the emotional and physical wellbeing of the revived individual, the act also contributes ethical issues into the future world. Employing utilitarianism, cryopreservation only benefits and increases the happiness of the cryopreserved. While it offers solace to family members knowing their loved ones may be treated in the future, the greater society is laden with social and ethical problems surrounding recovered individuals nonetheless. To reiterate, the technology is based on the probability that science will advance enough to recover individuals and develop cures for every disease that the cryopreserved population carries. All family members of the preserved individual could be deceased by the time it is appropriate to revive the individual. The lack of family and patient autonomy raises issues of who will be responsible for revived individuals. Most likely, the burden of caring for preserved individuals pre- and post-resuscitation will shift to the government or cryonics agency. Whether patients trust the future government and cryonics industry to make unbiased decisions regarding maintenance during preservation and when the right time to resuscitate an individual is negotiable. Additionally, individuals will need a stipend for post-resuscitation illness treatment and recovery. If living relatives exist, they will be from generations down

the line. Not only will future generations be subjected with the emotional and physical responsibility of caring for an “unknown” blood relative, they may not have the best interests of that individual in mind due to the lack of familiarity and could choose to isolate and neglect the revived relative. While cryonics offers terminally-ill patients a sliver of hope, it is evident that heavy social burdens are imposed on the government and future generations by cryonics usage, which should not be ethically permissible.

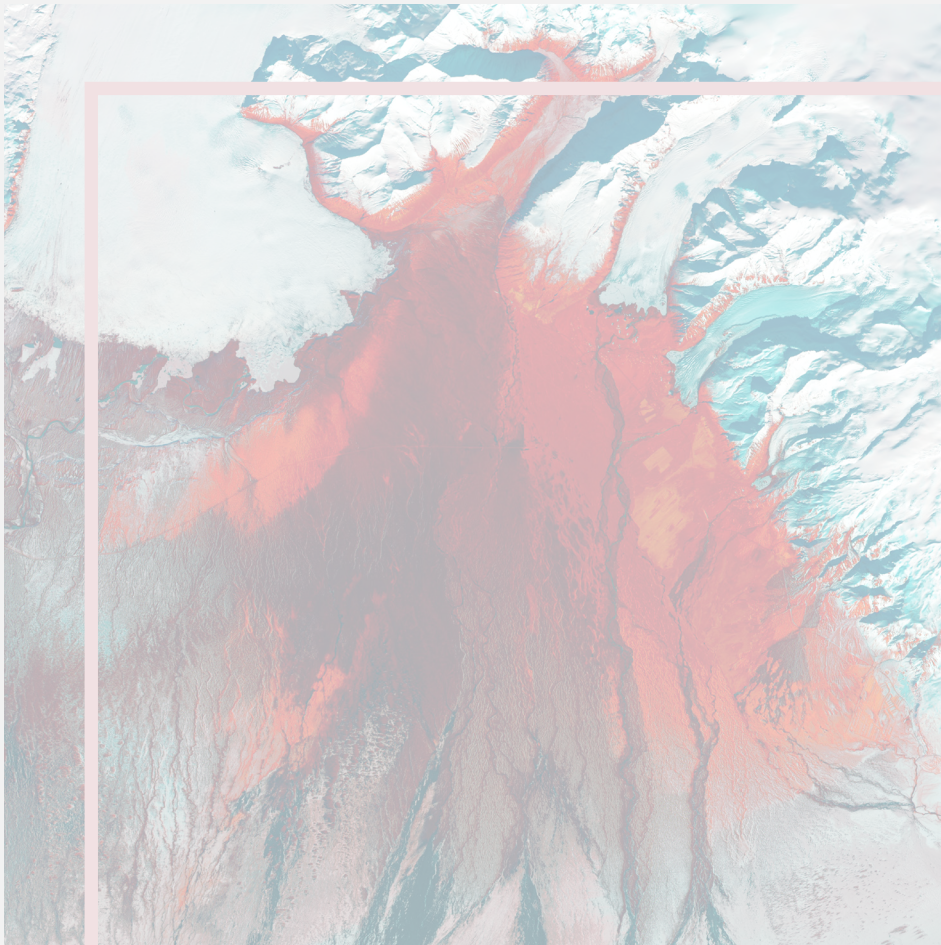
While the perfected technology may gift terminally-ill patients a normal life, it is not a fully concrete science and relies heavily on probability and faith in future science, which is unpredictable. Not only will the resuscitated individual potentially be socially isolated, future generations will also be challenged with the responsibility of caring for and socially accepting the revived. The negative social implications, affecting both resuscitated individuals and society, supersede the benefits terminally-ill patients may potentially reap from the technology.

To conclude, both deontology and utilitarianism argue against cryonics usage. Not only does revival disrupt the biological natural life cycle, but it also burdens future generations with moral and financial responsibilities to support the resuscitated. Actions that may decrease the happiness of others should be avoided. While the autonomy and beneficence principles of principlism advocate for cryonics usage, violations of the justice and nonmaleficence principles triumph. Cryonics is not an equally accessible technology to all and inflicts potential physical and social harm on the patient and other members of society. Taking all into consideration, the use of cryonics should not be ethically permissible.

## References

- Alcor (n.d.) *Alcor Membership Statistics*. Retrieved October 15, 2019, <https://alcor.org/AboutAlcor/membershipstats.html>.
- Alcor (n.d.) *Membership Info - Costs*. Retrieved October 15, 2019, <https://alcor.org/BecomeMember/scheduleA.html>.
- Alcor (n.d.) *Myths about Cryonics*. Retrieved October 15, 2019, <https://alcor.org/cryomyths.html>.
- Best, B. P. (2008). Scientific Justification of Cryonics Practice. *Rejuvenation Research*, 11(2), 493–503. doi: 10.1089/rej.2008.0661
- Canadian Cancer Society. (n.d.) *Cancer statistics at a glance*. Retrieved October 15, 2019, <https://www.cancer.ca/en/cancer-information/cancer-101/cancer-statistics-at-a-glance/?region=qc>
- Doyle, D. J. (2012). Cryonic Life Extension: Scientific Possibility or Stupid Pipe Dream? *Ethics in Biology, Engineering and Medicine*, 3(1-3), 9–28. doi: 10.1615/ethicsbiologyengmed.2013006985
- Moen, O. M. (2015). The case for cryonics. *Journal of Medical Ethics*, 41(8), 677-681. doi:10.1136/medethics-2015-102715
- US Census Bureau. (2019, October 1). *Health Insurance Coverage in the United States: 2018*. Retrieved October 15, 2019, <https://www.census.gov/library/publications/2019/demo/p60-267.html>.

# Thawing Permafrost and its Impacts on Communities in Canada



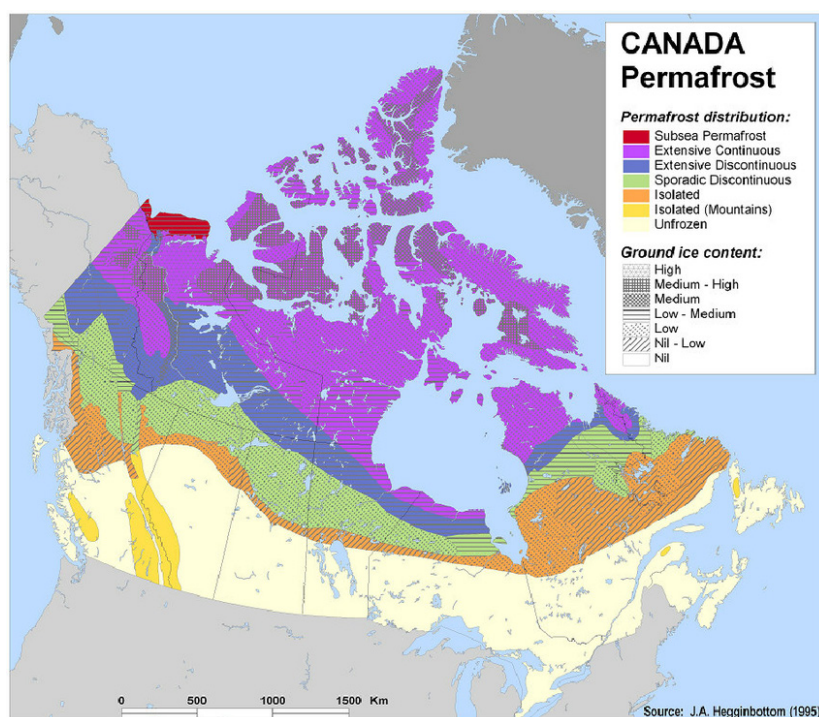
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The Arctic is extremely vulnerable to climate change; an increase of an average of 2°C in global temperatures, the stated goal of the Paris Agreement, would result in an approximate 4°C increase in Arctic temperatures (Overland et al., 2018). One defining feature of the Arctic that is vulnerable to changes due to global warming is permafrost (Overland et al., 2018). The purpose of this report is to provide an overview of the environmental, physical, social, and political functions of permafrost while comprehensively examining how the change in permafrost function due to climate change is impacting, and could impact, communities in Canada.

### ***Permafrost: What Is It and How Is It Changing?***

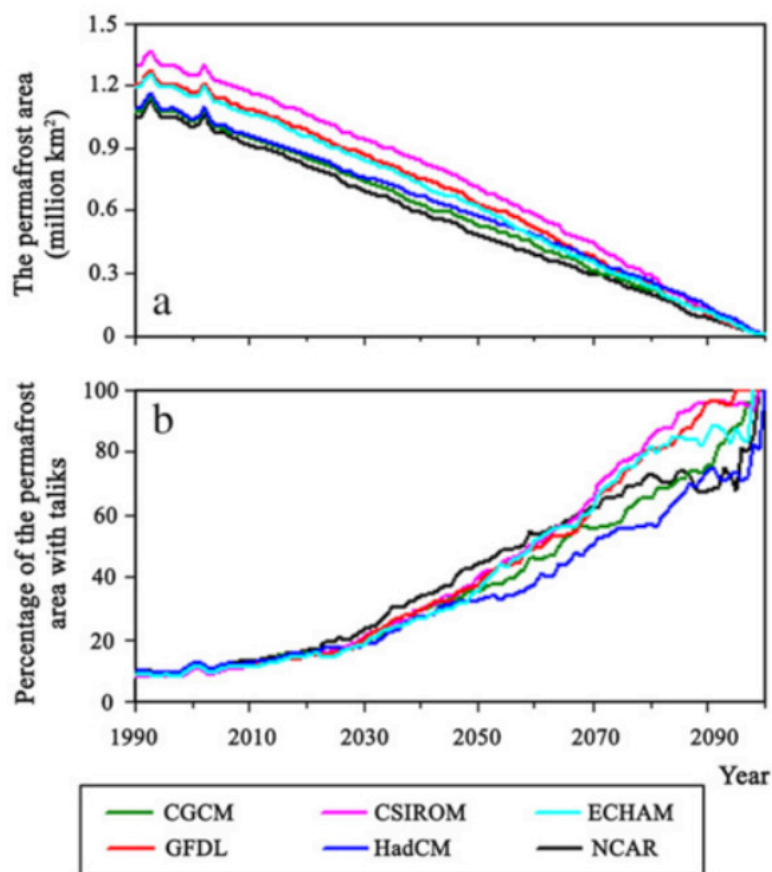
Permafrost refers to ground that remains at or below 0°C for at least two consecutive years (Harris et al., 1988). In Canada, 70% of the nation’s landmass is classified as permafrost region (Zhang et al., 2008). Two other main physical features accompany permafrost regions: the first is the *active layer*, which is the layer of ground atop permafrost that thaws and freezes annually, and the second is the *taliks*, which are layers or body of unfrozen ground in a permafrost region (Harris et al., 1988).



**Figure 1.** Permafrost areas in Canada including everything but the light yellow area. Reprinted from “More comprehensive characterization of landslides in permafrost,” by David Milne Cruden, 2010, 63 Canadian Geotechnical Conference, vol. 1, p. 856.

In a 2008 study by Zhang et al., six different climate scenarios were used to predict the effects of warming (the lowest being 3°C, highest 6.6°C) on Canada’s permafrost regions. Results indicated that permafrost regions in Canada would likely be reduced by 16.0-19.7% from the 1990s to 2090s (Zhang et al., 2008). In all six climate models, areas of ephemeral permafrost (areas where permafrost doesn’t exist for all years between 1990-2100) completely vanished by the end of the 21<sup>st</sup> century (Zhang et al., 2008). The study not only revealed decreases in permafrost extent, but also in permafrost thickness; persistent permafrost regions (areas where permafrost exists for all years between 1990-2100) saw decreases by 6.3-8.9

metres in thickness. In conjunction with thawing permafrost, the active layer was shown to increase by 0.3–0.7 metres (or 41%–104%), and taliks increased exponentially in areas of persistent permafrost. In summary, climate models indicate that, with global warming, permafrost regions are thawing.



*Figure 2.* Six different climate scenarios presented; top graph shows the predicted trend of ephemeral permafrost coverage in Canada and bottom graph shows the predicted percentage of ephemeral permafrost regions with taliks. Reprinted from “Transient projections of permafrost distribution in Canada during the 21st century under scenarios of climate change,” by Y. Zhang et al., 2008, *Global and Planetary Change*, 60(3-4), p. 451.

### ***Environmental Functions and Impacts of Permafrost***

Since it is frozen, permafrost bears a low decomposition rate, meaning it accumulates and preserves organic matter and other elements (Christenson, 2017). This section will explore the environmental and health impacts—carbon and mercury release from thawing permafrost.

### ***Carbon***

Arctic soils are estimated to contain around 50% of the world’s soil carbon (Christenson, 2017). In aerobic conditions, released carbon produces carbon dioxide (CO<sub>2</sub>), while in anaerobic conditions, released carbon produces methane (CH<sub>4</sub>) (Christenson et al., 2017). However, the carbon available for decomposition is dependent on its location within the permafrost, the characteristics of the permafrost, and the quality of the organic material (Christenson et

al., 2017). Thus, the modelling of carbon release from permafrost thaw is a complex field of research, as with most matters pertaining to permafrost.

Thus, permafrost-carbon models are constantly subject to new considerations. For example, one factor that is starting to gain consideration is permafrost thaw during the winter (Natali et al., 2019). Under a business-as-usual climate scenario, CO<sub>2</sub> emissions in the winter are expected to increase by 41%, while a moderate mitigation scenario would still increase winter CO<sub>2</sub> emissions by 17% (Natali et al., 2019). The study estimates that the loss of carbon from permafrost regions during the winter exceeds the average growing season carbon uptake (Natali et al., 2019).

Furthermore, carbon content can vary according to the type of permafrost, which further complicates permafrost-carbon models. For example, the most carbon-rich regions of permafrost—called Yedoma—tend to be the most unstable (Turetsky, 2019). Totalling 1 million square kilometers of Siberia, Canada, and Alaska, Yedoma permafrost deposits were formed during the last Ice Age and contain 130 billion tonnes of organic carbon from accumulated glacial dust and grasslands, an equivalent of over a decade of global GHG emissions (Turetsky, 2019). Since they are mostly composed of ice (sometimes 90%), they are especially vulnerable to warming (Turetsky, 2019).

Permafrost experts suggest that, until 2040, large uncertainties will continue to exist on whether permafrost carbon release will be larger than gains in biomass from boreal and tundra biomass due to warming ecosystems (Christenson et al., 2017). For longer timescales (2100 and 2300) there was general agreement between the experts that carbon losses from permafrost would surpass gains in biomass (Christenson et al., 2017). Overall, there are still many uncertainties that exist within permafrost carbon release models since different factors such as air temperature, snow depth trend, vegetation and soil only account for a part of the variation in permafrost temperatures (Romanovsky et al., 2017).

Despite the uncertainty that still surrounds the predictions of carbon release from permafrost thaw, it is still pivotal to consider the possible impacts this could have on society. For example, research points to how the thawing of permafrost could result in a positive feedback loop of CH<sub>4</sub> release, which would exacerbate global warming (Lara et al., 2019). Increases in greenhouse gases will cause a slew of environmental, social, and economic issues, and the impacts will be global in scale.

### ***Mercury***

The release of mercury from thawing permafrost might have a more tangible impact on local communities in Canada. Mercury (Hg) in sediments binds to organic material that freezes into permafrost and is vulnerable to release from permafrost as it thaws (Schuster et al., 2018). This is of concern since there is 793 +/- 461 Gg of mercury frozen in Northern Hemisphere permafrost, which is twice as much mercury as the amount in all other soils, the ocean, and the atmosphere combined (Schuster et al., 2018).

Inhaling vaporized mercury above a certain threshold can have a negative impact on human health (Ji et al., 2018). Furthermore, research supports that permafrost thaw could lead to a significant amount of methylmercury being introduced to Arctic aquatic systems, which could introduce mercury to phytoplankton and invertebrates, and consequently to humans (Yang et al., 2016). For Northern communities that rely on local sources of food, this could lead to unhealthy levels of mercury exposure. Already, mercury has been found at high enough concentrations in some Arctic biota to possibly influence reproduction and individual health (Ji et al., 2018).

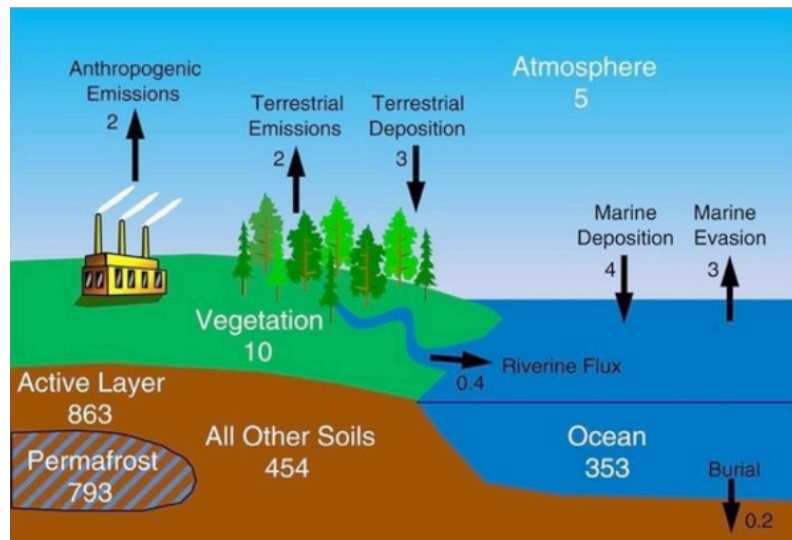


Figure 3. Visualization of the mercury cycle, with major reservoirs in white (Gg Hg) and fluxes in black (Gg Hg year<sup>-1</sup>). Reprinted from “Permafrost Stores a Globally Significant Amount of Mercury,” by P.F. Schuster et al., *Geophysical Research Letters*, 45(3), p.1468.

### ***Physical, Political and Social Functions and Impacts of Permafrost***

The pervasiveness of permafrost regions in the Northern Hemisphere means that they are inevitably of social and political interest. This is most prominently demonstrated by the different types of infrastructure that have been constructed above permafrost, which include transportation and community infrastructure. This section will explore the physical function of permafrost and how its thaw is impacting Northern communities in Canada.

#### ***Physical Function***

Permafrost acts as a hydraulic “barrier”, and therefore, as it degrades, additional hydraulic pathways might become available, increasing drainage and rapidly reducing soil moisture (Teufel, 2019). With ice-rich permafrost, thawing can abruptly trigger landslides and rapid erosions; lakes can disappear and be diverted (Turetsky et al., 2019). The phenomenon of the “disappearing lake” is already being noticed by members of several Inuit communities in Nunavik, Quebec, as they remarked how the bottom of lakes seemed to be “leaking” due to permafrost thaw (Cuerrier et al., 2015). Reduction in the availability of surface water can negatively impact Inuit communities that rely on surface water for their livelihood (Warren et al., 2005).

Furthermore, permafrost thaw can have detrimental effects on the structural stability of Northern infrastructure. Hjort et al.’s research (2018) developed high spatial resolution (~1km) permafrost and infrastructure maps of the Arctic under different climate scenarios, and determined that nearly 4 million people and 70% of current infrastructure in permafrost areas belong in regions where thaw of near-surface permafrost is likely by 2050 (Hjort et al., 2018). Alarmingly, even if the targets of the Paris Agreement are reached, these figures would not be reduced substantially (Hjort et al., 2018). Of additional concern is the conservative assumption of infrastructure failure at thaw of near-surface permafrost, when in fact infrastructure can fail even before the thaw reaches that level (Hjort et al., 2018).

#### ***Transportation Impacts***

An example of a major transportation route vulnerable to changes is the Alaska Highway. Running across Alaska, Yukon, and British-Columbia, the highway crosses many areas of



ice-rich, discontinuous permafrost, and has been showing signs of road damage induced by permafrost degradation (Stephani et al., 2014). The concern is so serious that in 2008, the Government of Yukon established an experimental road site near the town of Beaver Creek to test a range of techniques to mitigate permafrost degradation along the highway (Stephani et al., 2014). Damages to major transportation routes can cause shortages in essential supplies. For example, a mudslide and washout in 2012 closed the Alaska Highway in southern Yukon (Sabin, 2012). In the matter of days, Whitehorse grocery stores and restaurants were devoid of fresh food, and there was no fuel in town (Sabin, 2012). With increasing permafrost thaw, road closures might become more common, leading to scarcity of necessary supplies in Northern communities.



*Figure 4.* The extent of the Alaska Highway (in red), with the location of Beaver Creek and Whitehorse. Reprinted from The New York Times. Retrieved from <https://archive.nytimes.com/www.nytimes.com/imagepages/2012/07/24/science/24alcan-graphic.html>

### ***Community Infrastructure and Health Impacts***

Coastal and ice-rich areas in the North are extremely vulnerable to permafrost thaw, forcing many Northern communities, such as Inuvik and Tuktoyaktuk in the Northwest Territories, to deal with decaying infrastructure. Tuktoyaktuk is one of the first communities in Canada facing relocation due to climate change (Murray, 2019). The community lies right on the coast of the Beaufort Sea, and thawing permafrost, along with rising sea levels, are causing detrimental coastal erosion (Murray, 2019). In Inuvik, 90% of the ground is composed of ice-rich permafrost, and intense thaws are sinking buildings to the ground and destroying them (Lamb, 2017). According to Inuvik’s mayor, Jim McDonald, stilts only needed to be sunk to around five or six metres to hoist a building up before; now, stilts need to be driven down the fifteen- to twenty-metre range to get a “stable enough foundation” (Lamb, 2017).

Unstable infrastructure affects the entire livelihood and survival of communities. In terms of public health, thawing permafrost can damage pipes in water storage facilities and allow contamination of water supply to occur and/or render a water distribution system inoperable (Warren et al., 2005). If relocation is necessary, families in this new community would be subject to the difficulties of adapting to new ways of living and face potential unemployment, which can cause losses in traditional and cultural practices, creating distress and mental health challenges (Warren et al., 2005). Even if relocation is not necessary, changes in the landscape (such as erosion and thermokarsts from thawing permafrost) that could impact

the ability of Indigenous peoples to perform custom activities on their land could negatively impact mental health (MacDonald et al., 2015).



*Figure 5.*

Left: Location of Tuktoyaktuk and Inuvik in the North-West Territories. Map adapted from [www.visme.com](http://www.visme.com)

Middle: Aerial shot of Tuktoyaktuk. Reprinted from Vice, by W. Murray, 2019. Retrieved from <https://www.vice.com/>

Right: Unstable stilts from a house in Inuvik that will be torn down. Reprinted from CBC News, by D.M. Lamb, 2017. Retrieved from <https://www.cbc.ca/news/>

### ***Economic Impacts***

Infrastructure damage from thawing permafrost will inevitably require money for repair or rebuilding. For example, in 2018, Tuktoyaktuk received \$800 000 to move 4 houses 6 km away (Murray, 2019). Furthermore, according to a study spearheaded by the Northwest Territories Association of Communities, thawing permafrost is causing approximately 51 million dollars' worth of damage to public infrastructure (which includes roads and buildings) every year in the Northwest Territories (Beers, 2017).

### ***Conclusion***

In conclusion, permafrost serves many different functions, from storing carbon to providing structural support for infrastructure. Thawing permafrost has—and will continue to have—many negative consequences for communities in Canada, including health concerns from increased mercury levels and damaged water systems, relocation due to failing infrastructure, and mental health challenges from a changing landscape. There are many recommendations to improve upon the accuracy and relevancy of permafrost research, which include funding more monitoring sites for permafrost measurements (Turetsky et al., 2019), building more holistic models of permafrost thaw (Turetsky et al., 2019), and incorporating more Indigenous knowledge in research (Thomson, 2019). Dene people call the latter, “*łeghágots’enetę*”, which means “learning together” (Thomson, 2019). Ultimately, this will be the very least researchers, public and private sector experts, and citizens should aim for; in order to prevent detrimental permafrost thaw.

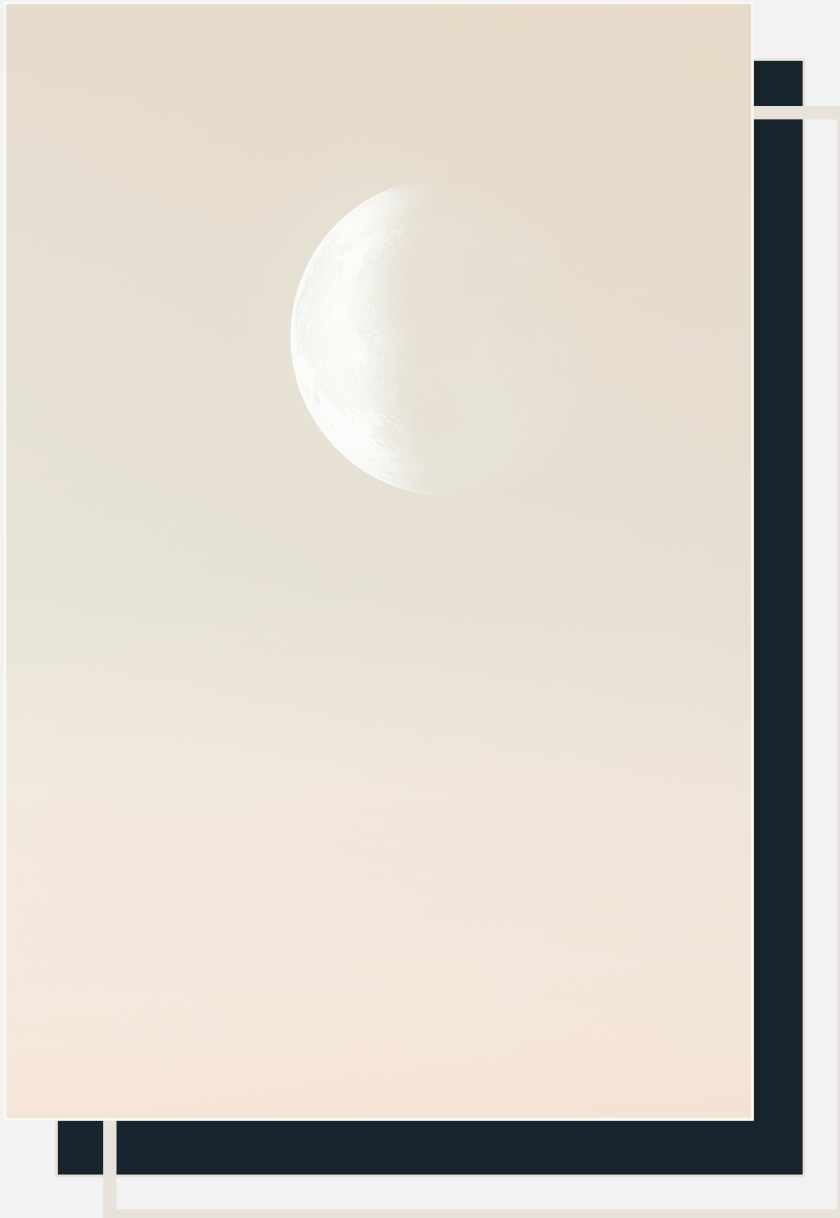
## References

- Beers, R. (2017, Nov 20). Thawing permafrost causes \$51M in damages every year to N.W.T. public infrastructure: Study. *CBC News*. Retrieved from <https://www.cbc.ca/news>
- Christenson, T.R. & Rysgaard, S. (2017). Arctic Carbon Cycling. In *Snow, Water, Ice and Permafrost in the Arctic (SWIPA) 2017*. Arctic Monitoring and Assessment Programme (AMAP), Oslo, Norway. Retrieved from <https://www.amap.no/documents/download/2987/inline>
- Cuerrier, A., Brunet, N. D., Gérin-Lajoie, J., Downing, A., & Lévesque, E. (2015). The Study of Inuit Knowledge of Climate Change in Nunavik, Quebec: A Mixed Methods Approach. *Human Ecology*, 43(3), 379–394. doi: 10.1007/s10745-015-9750-4
- Harris, S.A., French, H.M., Heginbottom, J.A., Johnston, G.H., Ladanyi, B., Sego, D.C., van Everdingen, R.O. (1988). Glossary of Permafrost and Related Ground-Ice Terms. National Research Council Canada. Retrieved from [http://globalcryospherewatch.org/reference/glossary\\_docs/permafrost\\_and\\_ground\\_terms\\_canada.pdf](http://globalcryospherewatch.org/reference/glossary_docs/permafrost_and_ground_terms_canada.pdf)
- Hjort, J., Karjalainen, O., Aalto, J., Westermann S., Romanovsky, V.E., Nelson, F.E... Luoto, M. Degrading permafrost puts Arctic infrastructure at risk by mid-century. *Nature Communications* 9. doi:10.1038/s41467-018-07557-4
- Ji, X., Abakumov, E., & Polyakov, V. (2019). Assessments of pollution status and human health risk of heavy metals in permafrost-affected soils and lichens: A case-study in Yamal Peninsula, Russia Arctic. *Human and Ecological Risk Assessment: An International Journal*, 25(8), 2142–2159. <https://doi.org/10.1080/10807039.2018.1490887>
- Lamb, D. M.. (2017, Apr 17). ‘It scares me’: Permafrost thaw in Canadian Arctic sign of global trend. *CBC News*. Retrieved from <https://www.cbc.ca/news>
- Lara, M. J., Lin, D. H., Andresen, C., Lougheed, V. L., & Tweedie, C. E. (2019). Nutrient Release From Permafrost Thaw Enhances CH<sub>4</sub> Emissions From Arctic Tundra Wetlands. *Journal of Geophysical Research: Biogeosciences*, 124(6), 1560–1573. doi: 10.1029/2018jg004641
- Macdonald, J. P., Willox, A. C., Ford, J. D., Shiwak, I., & Wood, M. (2015). Protective factors for mental health and well-being in a changing climate: Perspectives from Inuit youth in Nunatsiavut, Labrador. *Social Science & Medicine*, 141, 133–141. doi: 10.1016/j.socscimed.2015.07.017
- Murray, W. (2019, Nov 4). This Arctic Community Is Literally Falling Into the Ocean. *Vice*. Retrieved from <https://www.vice.com>
- Natali, S.M., Watts, J.D., Rogers, B.M., Potter, S., Ludwig, S.M., Selbmann, A.K... Zona, D. (2019). Large loss of CO<sub>2</sub> in winter observed across the northern permafrost region. *Nature Climate Change*, 9, 852-857. doi:10.1038/s41558-019-0592-8
- Overland, J., Dunlea, E. Box, J.E., Corell R., Forsius, M., Kattsov, V... Wang, M. (2019). The urgency of Arctic change. *Polar Science*, 21, 6-13. <https://doi.org/10.1016/j.polar.2018.11.008>
- Romanovsky, V., Isaksen, K. & Drozdov, D. (2017). Changing permafrost and its impacts. In *Snow, Water, Ice and Permafrost in the Arctic (SWIPA) 2017*. Arctic Monitoring and Assessment Programme (AMAP), Oslo, Norway. Retrieved from <https://www.amap.no/documents/download/2987/inline>
- Sabin, J. (2012, June 12). Cameron: How Secure is Yukon’s Food Supply? *Northern Public Affairs*. Retrieved from <https://northernpublicaffairs.ca>
- Schuster, P.F., Schaefer, K. M., Aiken, G.R., Antweiler, R.C., Dewild, J.F., Gryziec, J.D... Zhang, T. (2018). Permafrost Stores a Globally Significant Amount of Mercury.

- Geophysical Research Letters*, 45(3), 1463-1471. <https://doi-org.myaccess.library.utoronto.ca/10.1002/2017GL075571>
- Stephani, E., Fortier, D., Shur, Y., Fortier, R., & Doré, G. (2014). A geosystems approach to permafrost investigations for engineering applications, an example from a road stabilization experiment, Beaver Creek, Yukon, Canada. *Cold Regions Science and Technology*, 100, 20–35. doi: 10.1016/j.coldregions.2013.12.006
- Teufel, B., Susahama, L. (2019). *Nature Climate Change*, 9, 858-863. <https://rdcu.be/bWHai>
- Thomson, J. (2019, June 20). Meet the scientists embracing traditional Indigenous knowledge. *The Narwhal*. Retrieved from <https://thenarwhal.ca/>
- Turetsky M.R., Abbott B.W., Jones M.C., Anthony K.W., Olefeldt D., Schuur E.A.G... Sannel, A.B.K. (2019). Permafrost collapse is accelerating carbon release. *Nature*, 569, 32-34. doi: 10.1038/d41586-019-01313-4
- Warren, J.A., Berner, J. E. & Curtis, T. (2005) Climate change and human health: infrastructure impacts to small remote communities in the north. *International Journal of Circumpolar Health*, 64(5), 487-497. <https://doi.org/10.3402/ijch.v64i5.18030>
- Yang, Z., Fang, W., Lu, X., Sheng, G.-P., Graham, D. E., Liang, L., ... Gu, B. (2016). Warming increases methylmercury production in an Arctic soil. *Environmental Pollution*, 214, 504–509. doi: <https://doi.org/10.1016/j.envpol.2016.04.069>
- Zhang, Y., Chen, W., & Riseborough, D. W. (2008). Transient projections of permafrost distribution in Canada during the 21st century under scenarios of climate change. *Global and Planetary Change*, 60(3-4), 443–456. <https://doi.org/10.1016/j.gloplacha.2007.05.003>



# From Mass-Dependence Model to Acoustic Mechanism: Two Mechanisms for Core-Collapse Supernova and Their Implications



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The mechanisms of explosion in core-collapse supernovae have always been controversial in astrophysics. This report will discuss the limitations of the mass-dependence model that relies on the neutrino-driven mechanism by David Arnett and how an alternative model, acoustic mechanism, responds to the problem of the mass of a star in general mechanism. Based on these two models, this report explores how different types of simplification can lead to both a general model that works for general astrophysics and a specific model that only works under certain conditions. Additionally, this report provides some suggestions for future studies.

### **Limitations of the Mass-Dependence Model and Neutrino-Driven Mechanism**

The neutrino-driven mechanism is a pioneer mechanism in core-collapse supernovae (Arnett, 1967) and is very crucial to the mass-dependence model by David Arnett. Hence, this report will focus more on how the weakness of the neutrino-driven mechanism shapes the mass-dependence model, given that the details of this mechanism are still under debate nowadays (Burrows, 2013).

The mass-dependence model was developed by David Arnett, a Professor of Astrophysics at Steward Observatory at the University of Arizona. In his article, *Mass dependence in gravitational collapse of stellar cores* (1966), Arnett computed a numerical model that connected mass dependence to the behaviors of supernovae. He concluded the numerical results in Figure 1.

$M/M_{\odot}$	32	8	4	2
Final core mass ( $M_{\odot}$ )	11.5	5.13	2.46	0.564
Mass ejected	0	0	1.54	1.436
Velocity of ejection (cm/sec)	0	0	$\gtrsim 2.5 \times 10^9$	$\sim 5 \times 10^9$
Maximum core temperature ( $10^9$ °K)	514	372	312	152
Maximum core density ( $10^{14}$ g/cc)	14	10	7	2.5
$(r_g/r)_{\max}$	0.79	0.42	0.22	0.053
Final potential energy ( $M_{\odot} c^2$ units)	5.88	1.52	0.410	0.029 6
Final kinetic energy	0.070	0.006 8	0.003 3	0.011 5
Energy loss by e-type neutrinos, thin regions	0.015	0.014	0.005 2	0.007 3
Energy loss by $\mu$ -type neutrinos	4.24	0.293	0.042	0.001 44
Energy loss by e-type neutrinos, thick regions	$\sim 0$	$\sim 0$	0.005 7	0.001 35

**Figure 1.** A summary of numerical results from Arnett's calculation. The mass ejected by the  $32M_{\odot}$  and  $8M_{\odot}$  stars is zero based on his calculation (Arnett, 1966).

It is true that some assumptions are reasonable to a certain extent, while some still remain unsolved in astrophysics. For instance, one reasonable assumption is that the gas in the core is ideal gas. This hypothesis is generally agreed upon by scientists because the free nucleons in the core have  $E_K E \gg E_{Nucleon\ binding}$ . Meanwhile, this model received criticism about the total energy suggested by this model. To be more specific, the energy carried by neutrinos can be insufficient in core-collapse supernovae based on this mechanism (Burrows, 2013). This

result is probably due to the assumption that the number of scattering centers are the same as the free electrons. Arnett stated in his article, “[this assumption] may seriously underestimate the number density [...],” while failing to realize how different the result could be without such simplification. A factor of 10 is essential in determining the behavior of supernovae.

Not only is this assumption questionable, but other research has also disproved this model that is solely based on the neutrino-driven mechanism in terms of the composition in the core of a star. For example, recent research believes that relativistic electrons are the main source of pressure in the core at the progenitor stage (Florian et al., 2012) instead of non-relativistic particles in Arnett’s assumptions. Due to the assumptions of the non-relativistic gas law and the underestimated number of scattering centers (Cabezón et al., 2018), scientists expect large uncertainties in this model. Particles behave very differently when the temperature and pressure are very high, and there is a factor of 2 if the ideal gas law is applied to non-relativistic gas and ultra-relativistic gas ( $3kT$  vs  $\frac{3}{2}kT$ ), where  $k$  is the Boltzmann Constant and  $T$  is the temperature. Therefore, it is an unwise choice to ignore all relativistic effects in each stage of supernova only for the simplification of the model.

In his conclusion, Arnett overlooks the problem of simplification yet again (Couch, 2013). Without mentioning the potential effects of assuming the same structure for each star and the same results from a 1D model to a 3D model, the article only states the possible influence of relativistic effects as a limitation. Even though the discrete final values in Arnett’s article generally agree with the latest research, namely the total kinetic energy of each star being  $6 \times 10^{44} J - 1.2 \times 10^{46} J$  in a mass range from  $2M_{\odot} - 32M_{\odot}$ , they are suspicious because they can be obtained by the manipulation of special structures of a star and artificial construction of simplifications, which may not have much practical significance. Even if we assume the mechanism is correct, the numerical results in this article may be misleading due to a lack of justification in employing such a mechanism for the purpose of investigating mass dependence of supernovae. The model is a good start for astronomers to study the mass-supernova relationship, but the value of the conclusion is not high because the author makes some problematic assumptions.

Some may argue that it is challenging for astronomers to design a comprehensive model or it is beyond our supercomputers’ ability to simulate all macro- and micro- aspects of physics in a model for supernova mechanism (Borrows, 2018). However, it may still be worthwhile for astrophysicists to attempt developing models that incorporate more parameters such as the effects of magnetic fields in the star, the rotation of the star, and the outer environment of the core-collapse supernova, as comprehensive models will better allow for future astronomers to test these models with actual data.

### ***Other Mechanisms and Related Concerns***

Acknowledging the lack of sophisticated details of neutrino transport in the neutrino-driven mechanism, which is also the foundation of Arnett’s model, motivated astronomers to develop other theories for the mechanism of core-collapse supernovae. An alternative theory called acoustic mechanism was produced by Adam Burrows, a professor of astrophysical sciences at Princeton University (Burrows et al., 2005) in order to replace the old neutrino-driven mechanism. This paper argues that if both direct hydrodynamics and neutrinos fail to transfer energy, it is possible to consider acoustic power because almost all the acoustic energy is absorbed by the matter at the outer layer. The source of such acoustic energy is from “the excitation and oscillation of core pulsation modes in the deep interior of the proto-neutron star,” according to Adam (2005).

The simulation-based mechanism utilized advanced tools and provided conclusions

that were different from Arnett's model. With the latest VULCAN/2D technology for hydrodynamics, EOS (equation of state) for alpha particles and other relevant results, astronomers simulated a 2D model for a core-collapse supernova of a  $11M_{\odot}$  progenitor ( $11M_{\odot}$  star was not discussed in Arnett's model). They observed that the shock wave, which had many energetic neutrinos predicted by neutrino-driven mechanism, reached a radius of  $\sim 150km$  at  $\sim 150ms$  and reached a radius of  $\sim 110km$  at  $\sim 200ms$ . The shock wave then oscillated and the outer materials reversed the direction of flow, further producing a secondary shock. At this stage, the star underwent "advective-acoustic instability" and "standing accretion shock instability" (SASI). The nonlinear, non-periodic secondary shock increased the amplitude of the wave without increasing the radius of the shock wave, and a pressure pulse at the speed of sound occurred whenever two wave kinks collided. The simulation showed that the propagation of acoustic flux, instead of neutrino, dominated during the period  $\sim 350ms$  to  $\sim 450ms$  and resulted in "forced turbulence," which would initiate an explosion. The g-mode oscillation would become important as it was self-excited to generate enough energy to produce a core-collapse supernova.

Even though this acoustic mechanism enjoys the benefits of technology advancement in the areas of quantum physics and computer science, this model actually builds upon a special star with 11 solar mass and could be incorrect when resonant wave is produced, which could diminish the amplitude of g-mode oscillation (Weinberg and Quataert, 2008). Therefore, the practical significance of this mechanism on astrophysics will not be higher than the mass-dependence model if both are built upon well-formatted assumptions and are designed for a successful production of results, especially when both models miss details in the assumption-making process.

Scientists found more limitations in these two models. For instance, Adam Burrows believes that both models ignore the details of ejected baryon mass in his paper, *Colloquium: Perspectives on core-collapse supernova theory* (2018). He also recognized that if the acoustic mechanism was correct, then the star would have taken more than 0.5s to accumulate enough energy for a supernova which could be untrue in some situations. Hence, future studies may need to develop new mechanisms that work for a more general case of core-collapse supernova.

### **Conclusion**

The report discusses some limitations of the mass-dependence model and its basis on the neutrino-driven mechanism. The expected energy of core-collapse supernovae  $10^{51}erg s^{-1}$  is hard to attain with a neutrino mechanism that only produces  $\approx 10^{50}erg s^{-1}$  (Burrows et al., 2007). The alternative acoustic mechanism also fails to solve the problem of energy in g-mode oscillation when the resonance wave occurs. The time for energy generation is higher than expected, and the energy from oscillation will decrease to  $\approx 10^{48}erg s^{-1}$ - $10^{49}erg s^{-1}$ . Therefore, researchers should be more careful in evaluating the combination of these mechanisms to find a solution that balances both mechanisms.

Additionally, the mass dependence of core-collapse supernovae is still invaluable in understanding core-collapse supernovae, but it also needs more investigation. That is to say, the mass of a star has a huge impact on the energy of a star indeed, but a mass-dependence model can be less meaningful in reality if there is no careful consideration of the structure and other potential mechanisms for supernovae.



## References

- Arnett, D. (1967). Mass dependence in gravitational collapse of stellar cores. *Canadian Journal of Physics*, 45(5), pp.1621-1641.
- Burrows, A., Livne, E., Dessart, L., Ott, C. and Murphy, J. (2007). Features of the Acoustic Mechanism of Core-Collapse Supernova Explosions. *The Astrophysical Journal*, 655(1), pp.416-433.
- Burrows, A. (2013). Colloquium: Perspectives on core-collapse supernova theory. *Reviews of Modern Physics*, 85(1), 245–261. doi: 10.1103/revmodphys.85.245
- Cabezón, R., Pan, K., Liebendörfer, M., Kuroda, T., Ebinger, K., Heinemann, O., Perego, A. and Thielemann, F. (2018). Core-collapse supernovae in the hall of mirrors. *Astronomy & Astrophysics*, 619, p.A118.
- Couch, S. (2013). On the Impact of Three Dimensions in Simulations of Neutrino-Driven Core-Collapse Supernova Explosions. *The Astrophysical Journal*, 775(1), p.35.
- Weinberg, N. and Quataert, E. (2008). Non-linear saturation of g-modes in proto-neutron stars: quieting the acoustic engine. *Monthly Notices of the Royal Astronomical Society: Letters*, 387(1), pp.L64-L68.



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