



AUC Undergraduate Journal of Liberal Arts & Sciences

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The Amsterdam University College (AUC) Undergraduate Journal of Liberal Arts and Sciences is a biannual, interdisciplinary publication showcasing outstanding undergraduate academic papers. The Journal aims to demonstrate the strength of undergraduate scholarship at AUC, to reflect the intellectual diversity of its academic programme, to encourage best research and writing practices, to facilitate collaboration between students and faculty across the curriculum, and to provide students with opportunities to gain experience in academic reviewing, editing and publishing. The Editorial of the Journal is composed of members of the InPrint board, a registered AUCSA committee.

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Foreword

It is my utmost pleasure and privilege to introduce the 18th Volume of Amsterdam University College's *Undergraduate Journal of Liberal Arts and Sciences*.

The diversity within the AUC curriculum nurtures an environment of spectacular academic breadth and depth. This Journal affords students the opportunity to have their research presented to the academic community. This year, we received an unprecedented number of submissions across all disciplines, and I am heartened by the students' continued desire to share their high-quality work.

The Volume begins with Luuk Kuiper's interdisciplinary paper situated within the Philosophy of Science, discussing the intersections of Parfit's teletransportation and quantum suicide. Kuiper's masterful writing allows him to deliver these daunting concepts both engagingly and thoroughly. Within the Sciences, Sophie Duncan offers a vulnerability assessment of the Jamaican agricultural sector and its relationship to droughts that is imbued with ingenious thought processes, coupled with well-structured argumentation. Mayra Albayrak's discussion of brain organoids, which exhibit the potential of modelling the human brain as a potential research model of the future, is balanced, coherent, and forward-looking. Shifting to the Social Sciences, Emma Goossens' paper on international post-colonial inequalities in the International Criminal Court proposes an extremely nuanced and topical discussion of international institutions' workings. Following this, Janine Subgang's discussion of women in negotiations is a thought-provoking article within the field of gender in international relations and displays layered and persuasive analysis. In the Humanities, Alin Ataz's paper on counter-monumentality in the digital space is an insightful and inventive application of this theory. Lastly, Laura's paper on the homeless' relationship to the transforming public space provides a grounded and multifaceted analysis. For many of these authors, the Journal is their first venture into the sharing of research and scholarship, and yet they have all managed to display exemplary innovation and critical analysis.

This Issue was not created in a vacuum, and I thank the incredibly knowledgeable faculty for their contributions: Dr. Cor Zonneveld, Dr. Dan Leberg, Dr. Fedde J. Benedictus, Dr. Geert J. Schenk, and Dr. Marco de Waard, whose insights were invaluable to this issue. Along with this, the work of all the peer reviewers cannot be understated; these voices represent the AUC community we serve. The administrative team, Miriam Crane, Lola Collingbourne, and Eleonora Hartzuiker who engaged in the board beyond their roles as Editors, were essential in the day-to-day operations of the Journal. Finally, the Volume would not have been made possible without the contributions of the Editors, Grayson Nanda, Jannik Faierson, and Filip Zawisza, who tirelessly devoted their sagacity to the rigorous selection and editing of these papers. To the Head Editors: Céline Paré, Casey Ansara, and Aada Kallio, your indubitable wisdom, diligence, and magnanimity have inspired the whole team to strive for excellence. I wholeheartedly thank all the Editors for their dedication and wish them all the best in their future endeavours.

This volume concludes my term as Editor-in-Chief. I am even more humbled by the brilliance of the authors and Editors, and honoured to have been able to serve in this capacity. My sincere hope is that you, the reader, will come away from reading this Journal as inspired as we were.

Aditi Rai Sia, on behalf of InPrint

A note from the photographers

Each semester, InPrint publishes an issue of their journal containing a collection of selected papers from students at AUC. The abstracts or introductions of the seven papers published in this issue were sent to RAW as inspiration for their photographs, which are included as the cover images with these papers. The captions below give a short explanation of the artists' thought process and interpretation of the abstracts.

Richard Essink for Luuk Kuiper's *Identity, Survival, and Many Worlds* Through this mirrored image, the interconnection and interdependence of philosophy and physics are illustrated, the beads of light representing ideas in both fields. Both grow brighter and closer to each other, till the diagonal lines visualise the highly speculative thought experiments were the two become most deeply intertwined.

Richard Essink for Sophie Duncan's *Current Impacts of Drought on Jamaica* Abstraction can sometimes be the most visceral way of presenting a concept and here, the intimate relationship between sufficient rainfall and a plentiful harvest is laid out. With the golden light, the long exposure stretches raindrops into long stalks of wheat. The frailty of this vital connection is shown through the deep encroaching darkness and its origin, the brutal, harsh sun approaching.

Daria Roman for Mayra Albayrak's *Mini-me in a Petri Dish* This picture of what is actually jellyfish at the aquarium in Berlin is an almost perfect representation of what the human pluripotent stem cells that are going to develop into brain organoids look like in a petri-dish.

Richard Essink for Emma Goossens's *International Post-Colonial Power Inequalities Affect Everyone* One of the core concepts of TWAIL legal scholarship is the use of international institutions as perpetuating an active legacy of colonialism. The paper focuses on the ICC and the picture is supposed to visualise western white domination of the ICC. This is achieved through the stark white glare of the courthouse itself and the guard as an embodiment of the gatekeeper role of western interests.

Daria Roman for Janine Subgang's *Women as a Success Factor in Peace Negotiations* In this photograph, I depicted a woman shaking hands with a man. However, only the shadow of the man created by the light that also shines onto the woman appears in the picture. This was done to highlight the role of the woman in achieving success in peace negotiations.

Stef Deuring for Alin Ataz's *An Archive of Femicides in Cyperspace* The picture shows a laptop displaying the counter monument, an online monument that commemorates women who have lost their lives due to male violence. In the reflection of the screen, a mourning woman is shown, and the red hue is used to symbolise the violence and bloodshed, in addition to the feelings of sorrow and anger that the monument provokes.

Daria Roman for Laura Klein's *Visible Invisibilization* A small space carefully set up by two homeless people that made their best efforts to create a space that resembles a home as closely as possible for them to live in is depicted in this picture. However, the absence of the people sleeping there is indicative of the slow displacement of homeless people and the beginning of removing such spaces to achieve a more aesthetically pleasing city.

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Interdisciplinary

Identity, Survival, and Many Worlds

Reciprocal Illumination between Quantum Suicide and Parfit's Teletransportation

Luuk Kuiper



Photographer: Richard Essink

Suggested citation:

Kuiper, L. (2022). Identity, Survival, and Many Worlds: Reciprocal Illumination between Quantum Suicide and Parfit's Teletransportation. *AUC Undergraduate Journal of Liberal Arts and Sciences*, volume 18(1), 1-10

Abstract

This paper shows how the thought experiments Parfit's teletransportations (Parfit, 1984) and quantum suicide (Squires, 1986) can contribute to each other. It is argued that Parfit can contribute to the demarcation of the quantum individual that is inferred by quantum suicide and that quantum suicide can defend Parfit's view on identity and survival from certain criticisms (Byrd, 2007). This is done by expanding them into the vocabulary of the other and then inquiring how they can support the goals of the other through a process known as reciprocal illumination. In this way, the paper also represents a case study of how physics and philosophy can contribute to each other's inquiries and argues in support of the methodology of reciprocal illumination.

Quantum Mechanics (QM) has fundamentally changed the approach to particle physics. This has brought a slew of philosophical queries, most of which were ignored in the earlier days of the theory. With QM maturing, there has been a stark increase in foundational inquiry into the theory's implications. As is typical in philosophy, these inquiries have led to more questions than answers; with the strictly non-intuitive nature of quantum effects contributing to the confusion as well. At this point it seems almost mandatory to quote Niels Bohr: "Those who are not shocked when they first come across quantum theory cannot possibly have understood it" (as cited in Heisenberg, 1971, p. 206). As a way of reassuring the reader that they are not alone when encountering more questions than answers, one will have to learn to welcome the confusion; as in QM shock and confusion are often signs one is getting deeper into the subject matter. For those who are not confused enough, there will be suggestions throughout the paper for further sources as there is always enough perplexity, and knowledge, to be found.

Keywords and phrases: *quantum mechanics, quantum suicide, teletransportation, personal identity*

Many Worlds

In 1957 Hugh Everett presented a relative-state interpretation of QM in his doctoral dissertation, which would later be expanded upon and known as the Many Worlds Interpretation (DeWitt, 1973). It is also referred to as the no-collapse interpretation, which is, although descriptive of what the interpretation aims to address, not entirely accurate¹. Before presenting a short example of what this framework implies, it is necessary to clarify that this essay will stick relatively closely to the DeWitt interpretation of Many Worlds (DeWitt 1970; DeWitt 1973), which will henceforth simply be referred to as MWI.

Consider an experimental physicist named Euan² trying to measure the z spin-projection of a fermion³. There are just two possible eigenstates in this example: spin up $|\uparrow\rangle$ and spin down $|\downarrow\rangle$. Hence, the wave function considered in this experiment would look as follows:

$$|\psi\rangle = \frac{1}{\sqrt{2}}(|\uparrow\rangle + |\downarrow\rangle)$$

A measurement device will make a clicking noise if the spin is measured in the up eigenstate and turn on a red light if the spin is measured in the down eigenstate. Born's rule⁴ shows that the probability of both these options is akin to a coin toss, 50-50. QM posits that, until this measurement is taken, the fermion is in a superposition of both eigenstates⁵.

¹Everett's dissertation did not include any mention of worlds or multiverses, these aspects were only added as the theory matured and after Everett stepped away from academia. Subsequently Many Worlds has many different forms and sub-interpretations. For an overview of the historical development and the extent to which there are truly many worlds in Everett's original thesis one directs the reader towards (Parrochia, 2020). It should also be noted that the Many Worlds Interpretation is one of many so-called no-collapse theories. A non-exhaustive list of other no-collapse theories is: Many Minds (Albert & Loewer, 1988), Many Histories (Gellman & Hartle, 1990), and the Determinate Multiverse (Deutsch, 1999; Saunders & Wallace, 2008; Wallace 2011).

²Both this and the quantum suicide experiment in the next chapter are inspired by Ćirković's (2006) representation of quantum suicide.

³A fermion is a massive particle, e.g. a proton or electron, which in QM can be described by a wave function.

⁴An explanation of Born's rule can be found on the one of the first pages of most introductory quantum physics textbooks, for example in Griffiths & Schroeter (2018).

⁵The notion that a particle is in a superposition until measured is of course also a debated topic. E.g. in the nonlocal Pilot Wave framework (Belinsky 2019; Bohm, 1952a; Bohm,

The idea of superposition is the origin of almost all interpretation issues and unintuitive aspects within QM⁶. Interpretations of the phenomenon of superposition, such as MWI, become relevant through the process of measurement. What happens to this non-measured state upon measurement?

The historically dominant interpretation of QM, the Copenhagen interpretation (Howard, 2004; Oldofredi & Esfeld, 2019), postulates that measurement collapses the wave function. As a consequence, one of the two possible states is realized and the non-measured state is simply irrelevant; an artifact of the statistical nature of the wave function. MWI, on the other hand, theorizes a split instead of a collapse upon measurement⁷. This split implies that both outcomes are realized and observed by two successors of the observer who both see exactly one of the possible results⁸. In more general terms, all outcomes after a measurement are always realized and individually observed by successors of the initial observer in different branches of the initial world. This theory raises two important questions: What exactly is a 'world' in MWI? And how should the splitting of worlds, also referred to as branching, be interpreted?

To answer these questions this essay introduces and distinguishes two fundamental views about interpreting a theory; the bird-eye perspective and the inside perspective. The bird-eye view is "the outside view of a physicist studying its mathematical equations, like a bird surveying a landscape from high above, and the inside view of an observer living in the world described by the equations, like a frog being watched by the bird" (Tegmark, 2007, p. 24). The distinction thus comes down to what one views as more fundamen-

1952b) there is no superposition and within Superdeterminism (Hossenfelder & Palmer, 2020) the state is also determined by factors different from measurement. These interpretations, however, fall outside the scope of this paper and their implications will thus not be further discussed as one focuses on Copenhagen and MWI instead.

⁶A thorough overview of the concept will not be included in this paper but the reader is encouraged to look into it. Schrödinger's cat, a famed thought experiment about superposition, being the most approachable angle. One directs the interested reader to two video sources on the thought experiment (Hossenfelder, 2021; TED-Ed, 2014), and a translation of its academic origin (Trimmer, 1980).

⁷When exactly the split, or collapse, happens is for all practical purposes irrelevant (von Neumann, 1955; Vaidman, 2002)

⁸Once more this differs between subinterpretations of MWI, for an overview see (Barrett, 1999).

tal to reality; the formal framework used to model our universe, or one's personal experience of our universe—mathematical language or human language. Both of these views have their merits and therefore will be used as lenses through which one can examine the various concepts in this paper.

What exactly is a 'world' in MWI? The answer to this question depends on the perspective that one assumes. Firstly, if this query is viewed from the *bird-eye perspective* the answer would be that there is only one universe. Namely, the universe that is described by the universal state function (Wu, 2021), which in turn has a superposition of its terms since this universe is quantum mechanical in nature. The many worlds in MWI would thus correspond to the different terms of the universal state function, but from the bird-eye perspective they are still all part of a single quantum universe, which was first pointed out by Lévy-Leblond (1976). The semantic distinction between universe and world is incredibly important to this bird-eye perspective. Secondly, from a single observer's perspective, *the inside perspective*, it is difficult to accept that there is only one universe because an immersed single observer cannot be aware of the entirety of this macro quantum universe. Every observer, although they have parallel selves in different terms, thus remains restrained to a single term at any particular moment in time. This leads them to see the term they currently inhabit to be 'their' universe, which in turn leads the inside view to posit a multiverse. In short, MWI from the bird-eye perspective posits one quantum universe, the universal state function, that consists of many worlds, the terms of the state function. Whilst from the inside perspective there is a multiverse—although this is near impossible to prove from inside—where each observer views their world as an independent universe⁹.

Next, how should the branching of worlds be interpreted? From the bird-eye view, this is attributed to an emergent property of a large-scale quantum system such as our quantum universe, called decoherence¹⁰. Decoherence is a dynam-

⁹The bird-eye perspective is in line with Lévy-Leblond and was supported by Everett (Barrett Byrne, 2012), whilst the inside view is closer to Deutsch's (2002) determinate multiverse theory or DeWitt's (1973) quantum parallelism.

¹⁰This is an incredibly elementary account of decoherence that does not do justice to the ingenuity of its implications. A more thorough account does not fit the scope of this paper, however, one points the reader towards various

ical process that causes components of a quantum system to become autonomous of each other, and this process happens at a smaller timescale than other dynamical events in the system (Wallace, 2011). Thus, decoherence functions as the branching mechanism for MWI that causes components of the system to evolve independently into quasi-classical states, a form of effective collapse.

Quantum Suicide

In the experiment discussed so far, MWI and the Copenhagen interpretation, for all practical purposes, are indistinguishable from each other. They both offer the same observations and differ only in their interpretation of the unrealized eigenstate.

Suppose now that Euan changes the experiment slightly; instead of turning on a red light when a down eigenstate is measured, the device triggers a pistol aimed at his head that would instantly kill¹¹ Euan upon firing. The considered wave function of this revised experiment would subsequently look something like this:

$$\begin{aligned} & \hat{U} |\psi\rangle \otimes |\text{experimenter}\rangle \\ &= \hat{U} \frac{1}{\sqrt{2}} (|\uparrow\rangle + |\downarrow\rangle) \otimes |\text{experimenter}\rangle \\ &= \frac{1}{\sqrt{2}} (|\uparrow\rangle \otimes |\text{hears click}\rangle + |\downarrow\rangle \otimes |\text{dead}\rangle) \end{aligned}$$

Where \hat{U} is a linear operator, as one is now considering the continuous change of state of the system in respect to time, instead of a discontinuous change resulting from the observation of a specific quantity. These are two fundamentally different ways of calculating a wave function. The discontinuous, or collapse, method is indicative of the Copenhagen interpretation whilst the continuous method is used in no-collapse theories such as MWI.

Back to Euan's precarious situation, one might ask what will happen to him when the measure-

overviews (Cunningham, 2014; Hagar, 2012, author's emphasis; Schlosshauer, 2019).

¹¹Instantly is important here. It is vital to the experiment that the time between measurement and readout, be it the triggering of a light or certain death, should be smaller than a timescale that humans can perceive, ensuring that the outcome of the experiment happens instantaneously to any human observers.

ment device starts firing? Considering the discontinuous Copenhagen interpretation, Euan has a fifty percent chance of dying every time the device measures, meaning his chance of surviving n amounts of measurements is $p(n \uparrow) = 0.5^n$. Nothing other than an incredible streak of luck could save him in this case, as his chance of survival drops below one percent after just seven measurements.

However, when we view the experiment from within the MWI framework, the experiment then takes an unusual turn, and Euan's genius is revealed. As discussed, in MWI upon measurement both available options are realized through the fast decoherence between branches. One has to acknowledge that in Euan's |'dead'>state state he ceases to be an observer¹², and the probabilities of this experiment—or anything for that matter—ceases to make sense to him since he is quite literally dead. Before and after the measurement is triggered there is then exactly one observer. When considering that decoherence occurs at a rate faster than human perception, one arrives at a rather strange result: From Euan's point of view, he will hear nothing but the clicks that signify down measurements, and he can repeat this experiment arbitrarily many times. In an odds-defying manner, Euan seems unable to be killed by his experiment and has thus acquired an unusual form of immortality.

It should be noted that from the point of view of Euan's lab assistant, Euan will die in most terms of the final superposition as their life—observer status—is not at stake. Yet there will always be a term in which the lab assistant is faced with the counter-intuitive prospect that their boss is either unkillable or the luckiest man alive. To test this immortality-thesis to the experimental significance standard 5 sigma, a p-value of around 1 in 3.5 million, Euan would have to survive 22 triggers. This would leave him ecstatic about his findings in this one term, whilst leaving 22 assistants with a rather strange scene to explain to the authorities in 22 other terms.

This thought experiment is known as Quantum Suicide—or Quantum Immortality for those inclined towards spoiling the outcome—and was first intro-

¹²The first historical example of an argumentative use of the non-experience of the recently deceased, to our knowledge, is presented in a famous letter from Epicurus to Menoeceus, sent multiple centuries before Christ, on the topic of fear of death.

duced by Euan Squires (1986) and later popularized by Max Tegmark (1998), although there are numerous independent formulations of it that were published around that time (Moravec, 1988; Zeh, 1992; Price, 1996). This experiment is widely discussed within the academic community because it has a different outcome based on which interpretation you chose to analyze it with, something few (thought) experiments achieve. In collapse theories, Euan has a large chance of dying, whilst in no-collapse theories, he is certain to live.

Parfit's Teleportation

The dialogue around Parfit's teletransportation query (Parfit, 1975; Parfit, 1976; Parfit, 1984) is filled with very specific terminology. Before moving into this jargon-filled territory and defining the necessary vocabulary, I will first elaborate on the thought experiment through the use of some familiar contemporary media, namely, *Star Trek*.

Looking at the iconic moment when Captain Kirk asks Scotty to "beam [him] up", and in just a few seconds he disappears from one location and reappears on the Enterprise (Nimoy, 1986). Deborah (2009) notes: "it all appears so seamless in *Star Trek* that we might be forgiven for overlooking the fact that, in one sense, Kirk has been destroyed and replicated" (p. 614). This is exactly what concerns Parfit; the relationship between personal identity and survival. Teletransportation in science fiction is often viewed as the fastest mode of travel available to an individual. However, it can also be interpreted as a way of dying because the individual is destroyed, and another identical individual is created in the process. In what Parfit calls Simple Teletransportation¹³, Kirk never co-exists with his transported replica; the original Kirk is destroyed—in an unconscious state—before his replica is created on the Enterprise. In this case, it is easiest to believe that this is a mode of transportation and that subsequently Kirk's replica is Kirk himself. Things get more complicated in Parfit's second account of teletransportation, which is dubbed the Branch-Line case. In this case, the teletransporter malfunctions

¹³It should be noted that in Parfit's account he does not use *Star Trek* as his case study, instead, he tells a story about him traveling to Mars through use of a teletransporter. This thought experiment is for all theoretical purposes identical to Parfit's; however, instead of Parfit traveling to Mars, it is Kirk being beamed aboard the Enterprise.

and after scanning Kirk, it does not destroy him. Yet his replica is still created onboard the Enterprise. The malfunction did impact the original Kirk's cardiovascular system, and he now has only a couple of hours to live. In this second case, one is thus faced with the original and replica co-existing for a portion of time, and the question of what original Kirk should feel towards his imminent death.

Parfit's (1984) main claim surrounding this thought experiment is that Kirk "ought to regard having a Replica as being about as good as ordinary survival" (p. 200). He argues from a reductionist perspective, where the subject of experience is not "a separately existing entity, distinct from a brain and body, and a series of physical and mental events" (ibid p. 222), such as a soul or Cartesian Ego¹⁴. Parfit posits that, if this is accepted, it is not personal identity but the Reductionist-relation (R-relation) that matters in ordinary survival.

Personal identity, in his view, is physical and psychological continuity (ibid. p. 274). Here, physical continuity amounts to the spatio-temporal physical continuity of an object (ibid. p. 202), meaning one can track a path through space and time during which the object was present continuously. Parfit notes that one should consider this continuity to be transitive¹⁵ and not too strict¹⁶. Psychological continuity, on the other hand, is defined as "the holding of overlapping chains of strong [psychological] connectedness" (ibid. p. 205), where psychological connectedness is a particular direct psychological connection¹⁷. Then the R-relation, which Parfit claims is what matters in ordinary survival, is "psychological connectedness and/or continuity with the right kind of cause." (ibid. p. 214). Finally, qualitative and numerical

¹⁴Parfit summarizes this account by stating that identity does not involve a further-fact.

¹⁵Parfit (1984, p. 202) gives the example of a gold watch that lays disassembled on a table, although the physical continuity of the watch seems broken there is physical continuity of its separate parts, and once reassembled through transitivity the physical continuity of the watch continues.

¹⁶One should consider the Ship of Theseus or humans, many physical parts are replaced over time and yet identity remains. So physical continuity also accounts for dynamical beings such as humans or other living organisms.

¹⁷The overlapping chains within continuity are important because although psychologically there might be only a small psychological connection from a person to that person twenty years ago, there is a continuity through time that accounts for this change where between each stage has near perfect connectedness.

identity are important to this discussion. Taking two professional issue eight-balls from the same manufacturer, they will be qualitatively identical but numerically distinct, as they are exactly similar but not actually the same item (ibid. p. 200). Now that some terminology has been defined¹⁸, this paper will evaluate the thought experiment.

Reconsidering the Simple Teletransportation case, one can conclude that Kirk and his replica are qualitatively identical but numerically different. The teletransporter copies both his physical structure and mental states, but the original Kirk is destroyed and his replica is newly created. Although Kirk's physical structure is preserved, physical continuity is not sustained here due to the break in the spatio-temporal path of Kirk¹⁹, whilst psychological continuity is maintained as there is a one-to-one psychological connection between Kirk and his replica. However, as pointed out in the terminology section, physical continuity cannot strictly hold for humans because cells in the human body are constantly replaced. So although the replica's body is completely new, this has little relevance for Kirk's survival as everything that matters—the R-relation—has been retained through the teletransportation process.

The Branch-Line case offers more complications, since Kirk and his replica's lives intersect. The main issue arises out of the fact that Kirk's replica is not R-related to the Kirk who survived the copying procedure—and is bound to die soon—but is R-related to Kirk when he initially said "beam me up, Scotty" (Nimoy, 1986). Is the relation between Kirk and his replica still about as good as survival in this case? (ibid. p. 286). Considering the case of a child who wakes up in the middle of the night and goes to the toilet, one finds a similar case of what Parfit describes as a psychological branch-line (ibid. p. 287). As a child, one certainly has experienced not remembering having been to the toilet the day before²⁰, even when one was conscious during that

¹⁸Parfit's (1984) work is quite meticulous and there are many nuances which are not included here, for further clarification on physical continuity, see section 77 (pp. 201-203); psychological continuity, section 78 (pp. 203-207); R-relation, sections 94 and 96 (pp. 273-279 & pp. 281-286); and qualitative and numerical identity, section 76 (pp. 200-202).

¹⁹One could consider the data containing Kirk's physical and psychological information that is transmitted during teletransportation as 'being' Kirk in a way that retains his spatio-temporal path. However, this is difficult to justify and its discussion is outside the scope of this paper.

²⁰This example is analogous to Parfit's (1984) Sleeping Pill

time. In these kinds of moments, one is faced with an inexplicable situation where one in the middle of the night is psychologically continuous with themselves in the past but is not psychologically continuous with themselves in the future. Yet, no one would argue that the child that wakes up the next day is another person. As long as the overlap between Kirk and his replica's lives is negligible, the Branch-Line case can be viewed as similar to that of the child. Although there is a slight loss of continuity, the relations that matter—the R-relations—“are substantially the same.” (ibid. p. 288).

An Intermezzo for the Skeptics

A skeptical reader might now be stuck with the question of whether these sorts of fantastical thought experiments provide any value to us, or do they merely represent theoretic games? Siding with Parfit (1984, p. 199), and appealing to his response to a similar point of contention brought up by Willard Van Orman Quine, I would point out that the value of these kinds of thought experiments lies in the strong reactions one has to them. These reactions correspond to beliefs held, not in respect to words, but in respect to oneself. In this way, inquiry through even the most absurd of thought experiments can be valuable as they encourage self reflection into unconsciously-held values. Parfit appeals to the fantastical in pursuing to build a “Non-Religious Ethics” (ibid. p. 452) whilst this paper appeals to the fantastical to interpret the conjectures of modern physics. Most importantly, it must be noted that so many things that once were thought fantastical, or not thought of at all, now prove true. From gravitational waves rippling through spacetime to the global depository of knowledge, known as the internet. So if one lets their inquiries exclusively be guided by their disciplinary intuition, they would soon be blinded by contemporary technological and academic advancements. These thought experiments—although they represent extremes—can help one prepare for even the most wondrous advancements in science.

exemplar (p. 286).

Reciprocal Illumination between Quantum Suicide and Parfit's Teletransportation

The quantum suicide and teletransportation thought experiments are both counterintuitive accounts of how identity and survival relate to each other. Based on particle physics and pure philosophical inquiry respectively, what can these—at first sight—outlandish experiments contribute to each other?

First, it must be acknowledged once more that the main motivation behind quantum suicide is to provide an experiment that can distinguish MWI from collapse theories, however, there is much more to extrapolate from the thought experiment: It provides a vision for the quantum individual; a multiplicity of branched versions of oneself from the inside perspective and a superpositioned individual from the bird-eye perspective.

Parfit supplies the reader with terminology that can serve to augment the dialogue around this theory of self. Moreover, his extensive philosophical work on abstract issues concerning individuals provide a basis from which problems of an MWI-based theory of self can be approached. One such conundrum is how to demarcate the self within the multiverse, i.e. when does an alternative you stop being a version of you and start being someone else?

Parfit (1984) offers an answer in his discussion of both the psychological and physical spectra as well as their combined spectrum (p. 228-242). He discusses spectra cases where an individual is changed to another individual, either physically, mentally, or both, wherein the spectra range from no changes to fully changed. Parfit considers the case of the person who is changed and poses the question: “Would the resulting person be me?” (ibid. p. 237). He then evaluates the trilemma that arises from this query. Positing that if there would be a determinate answer to this question, there must be a strict demarcation between two cases in these spectra. However, this is hard to justify as there then “must be some critical set of the cells replaced, and some critical degree of psychological change, which would make all the difference” (ibid. p. 238). I.e., there must then be two neighboring cases, which are trivially different; but in one case the same person wakes up and in the other someone else wakes up after the

change. Another option would be that the resulting person would always be the same. However, in the far end of the spectrum—where everything is changed—concluding that the person that went in is exactly the same as the person that came out would be absurd; as would be its implications to the quantum self.

The only alternative is accepting the reductionist view, which states that in the middle cases there simply is no answer to this question. However, through describing the degree of physical and psychological continuity between the subject and the result, one describes all the facts that there are. Questions without answers, where all facts are known, are called empty by Parfit (*ibid.* p. 258) and giving them an answer would be arbitrary at best. Parfit thus helps, given that one accepts that identity does not involve a further fact, circumventing the problem of demarcating the quantum self; instead he provides an impersonal reductionist account that is sufficient for dealing with a branching self.

Quantum suicide and the MWI framework can similarly help with interpreting Parfit's teletransportation. MWI shows that persons can persist even though numerical identity is broken in the case of a branching self. Psychological continuity and the ability to observe that which is inherent to this continuity are what matters for a person to persist. Quantum suicide takes this to the extreme and posits an inability to commit suicide through the fast decoherence between branches. Although it is not empirical evidence, it does show that there is a theoretical physical framework in which Parfit's claim that the R-relation is what matters to ordinary survival is supported.

MWI and subsequently the branching self are also able to defend Parfit's philosophy from certain criticisms. Byrd (2007) argues that if one accepts that the R-relation is all that matters, this will cause problems to moral responsibility. He argues this point from the example of personal fission and fusion, another thought experiment Parfit (1984, pp. 243-273) addresses, where a person's brain is divided in two—fission—and placed in two separate but identical bodies, later being reunited—fusion—in a single body. Byrd addresses a case wherein after fission one of the two commits a murder the other had nothing to do with. He then contemplates whether, after fusion, the recombined person could be held responsible. Byrd

(2007) posits that if the R-relation is all that matters for ordinary survival and thus also for the responsibility one faces. Adding that "[t]he problem [is] that this conclusion, when combined with our basic intuitions about moral responsibility, implies, *per impossibile*, that [the person] both is and is not a murderer." (p. 48). However, the idea that a single entity can be multiple things at once, a superposition of states, is within the QM framework—specifically from the bird-eye view—anything but *impossibile*. Both teletransportation and quantum suicide give extensive accounts that show that intuition is often not what matters. Thus, in this way, MWI and quantum suicide can help contribute to Parfit as well.

Conclusion

This paper attempts to show, after clarifying their respective backgrounds and addressing the skeptics, that the quantum suicide and teletransportation thought experiments can prove to be valuable to each other. Through the use of reciprocal illumination, this paper showcases both experiments in the vocabulary of the other, as a tool for clarification. Finally, the essay addresses and clarifies problems and criticisms of the respective frameworks by interpreting both thought experiments through the lens of the other.

Through the search of related cases in philosophy and physics, this paper aims to not only improve foundational frameworks, but refine the dialogue around certain conjectures as well. This is useful for both elucidatory purposes and contributes to fostering progressive, interdisciplinary research programs within both the fields of philosophy and physics. Along these lines, this paper has not only laid the groundwork for a theory of branching selves, but also for a further discussion of Parfit's philosophy through the use of insights from particle physics. Both are suggested as possible directions for future research.

In a world that advances as rapidly as ours, it is vital that both philosophy remains aware of physical advancements and that physical advancements are seriously interpreted. Reciprocal illumination between the two is a way of ensuring this happens, so for the love of knowledge this process must continue.

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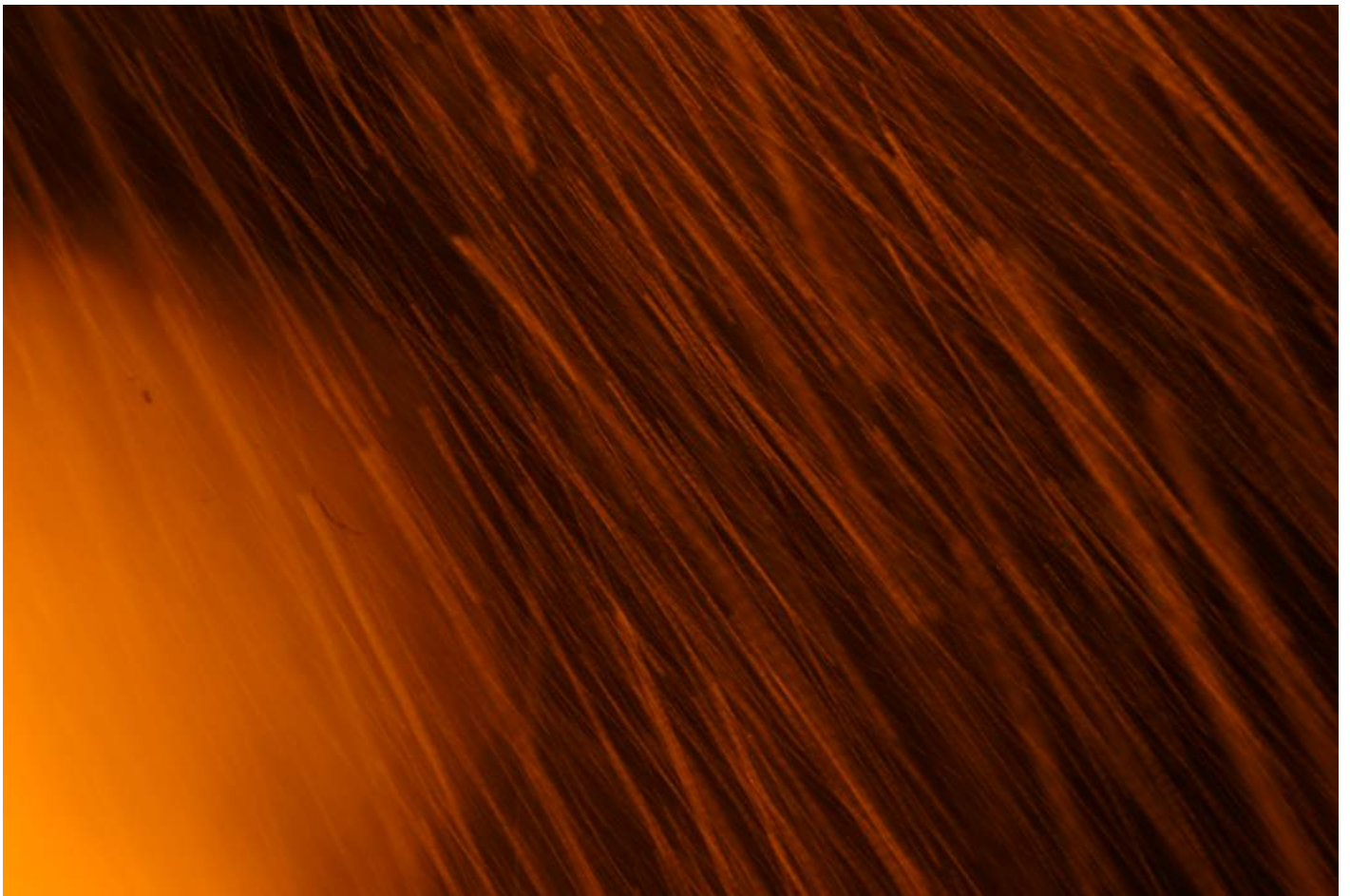
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Sciences

Current Impacts of Drought on Jamaica

Vulnerability Assessment of the Local Agricultural Sector

Sophie Duncan



Photographer: Richard Essink

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Abstract

This study presents a qualitative assessment based on a literature review which identifies the vulnerability of Jamaica's local agricultural sector and its dependents to drought. The assessment identifies drought vulnerabilities based on exposure, sensitivity, and adaptive capacity to drought, and discusses how they are influenced by geographic and socio-economic factors. The results indicate that firstly, Jamaica's domestic agricultural sector and its dependents had high exposure to drought hazards due to the impact of Jamaica's topography on its rainfall patterns. Secondly, the local sector and community had a high sensitivity to drought due to limited access to alternative water resources, high crop losses due to prior drought, and low income diversification. Finally, local farmers were classified as having a low adaptive capacity due to low demographic profiles, but had a high adaptive capacity regarding their social capital. Specifically, literature emphasises the positive impact that indigenous knowledge and high social capital had on combatting and recovering from drought. Considering the high vulnerability of Jamaica's local agricultural sector and its dependents to drought, particularly regarding water resources, it is necessary to reduce the effects of future drought hazards, increase water management, and promote capacity building, and policy implementation.

Keywords and phrases: *Jamaica, Vulnerability Assessment, Drought Hazards, Local Agricultural Sector, Adaptation and Mitigation*

Introduction

Small island developing states (SIDS) in the Caribbean are experiencing the negative effects of climate change and consequently, are becoming increasingly vulnerable (Gamble et al., 2010). Vulnerability is defined by the Intergovernmental Panel on Climate Change (IPCC) as the “propensity or predisposition to be adversely affected” (Mimura et al., 2007). The concept of vulnerability can be further divided into components such as the exposure, sensitivity, and adaptive capacity of a system to hazards (e.g., drought; Mimura et al., 2007; Rhiney, 2015; Shah et al., 2013). Additionally, it is important to note that vulnerability is greatly influenced by geographic and socio-economic factors such as topography, and infrastructure and socio-economic security, respectively (Peduzzi et al., 2009; Rhiney, 2015).

In the Caribbean, anthropogenic climate change has increased the vulnerability of SIDS due to changing weather patterns: with predictions of increased regional temperatures and reduced precipitation levels (Barros et al., 2015; Gamble, 2014; Moulton et al., 2015). These changes in climatic conditions and weather patterns indicate that drought has become an increasing concern for Caribbean SIDS, including Jamaica (Moulton et al., 2015). Drought is characterised by a reduction in the expected annual and seasonal moisture conditions and is generally predicted to increase in frequency and intensity due to climate change (Barros et al., 2015; Campbell et al., 2011; Gamble, 2014). This is applicable to Jamaica, where Gamble et al., (2010) found that from a time period of 1980 to 2007, the frequency of longer drought events increased by 76% after 1991 that is consistent with other reports of decreased rainfall in the Caribbean. This increased drought frequency has had severe implications for Jamaica’s agricultural sector, an industry which employs around 16% of the population (Campbell et al., 2011; Moulton et al., 2015; Trading Economics, 2021a).

Jamaica’s agricultural sector is typified by small-scale, subsistence farmers with limited resources who often rely on rain-fed irrigation systems for their crops, making them vulnerable to changes in weather patterns (Campbell et al., 2011; Moulton et al., 2015). Agricultural vulnerability not only impacts local farmers but also indirectly affects low-income communities’ dependent

on the sector for their livelihoods (Campbell et al., 2011; Morris Edwards, 2008; Moulton et al., 2015). Together, these rural and vulnerable populations make up around 44% of Jamaica’s total population (Trading Economics, 2021b). Despite clear indications of drought vulnerability in Jamaica’s agricultural sector, Gamble (2014) highlights how drought is underrepresented in research, creating gaps in our understanding of localised drought impacts. Thus, a holistic assessment of drought vulnerability, considering its various components (exposure, sensitivity, and adaptive capacity) as well as influences (geographic and socio-economic), is still missing (Rhiney, 2015; Campbell et al., 2011).

This study aims to produce a vulnerability assessment, investigating the current impacts of climate-induced drought on Jamaica’s local agricultural sector and its dependent populations. Furthermore, the study will discuss the implications of the identified vulnerabilities and possible adaptation and mitigation measures based on literature (i.e., Campbell et al., 2011; Moulton et al., 2015).

Methodology

To assess Jamaica’s local agricultural sector and its dependents’ vulnerability to drought, this study conducted a review of existing research and grey literature.¹ Relevant literature was gathered by inputting keywords into two research databases: The University of Amsterdam Library and Google Scholar (Figure 1). The keywords in Figure 1 were often combined when searching in the databases (e.g., ‘Impact of drought on the agricultural sector in Jamaica’ or ‘Livelihood Vulnerability Index in Caribbean’). Of the keywords, ‘Jamaica’, ‘Caribbean’, ‘Vulnerability’, ‘Livelihood Vulnerability Index’, ‘Agriculture’ and ‘Drought’ were the most used. From this review, 16 papers were included out of 45 based on the relevance to the research question: to what extent does climate-induced drought impact the vulnerability of Jamaica’s domestic agricultural sector and its dependent populations?

To carry out the vulnerability assessment, this paper must first provide a coherent definition of the term itself. Various explanations of vulnerability were found throughout the literature, however,

¹Grey literature is information published outside of academic or commercial sources (e.g., reports news articles).

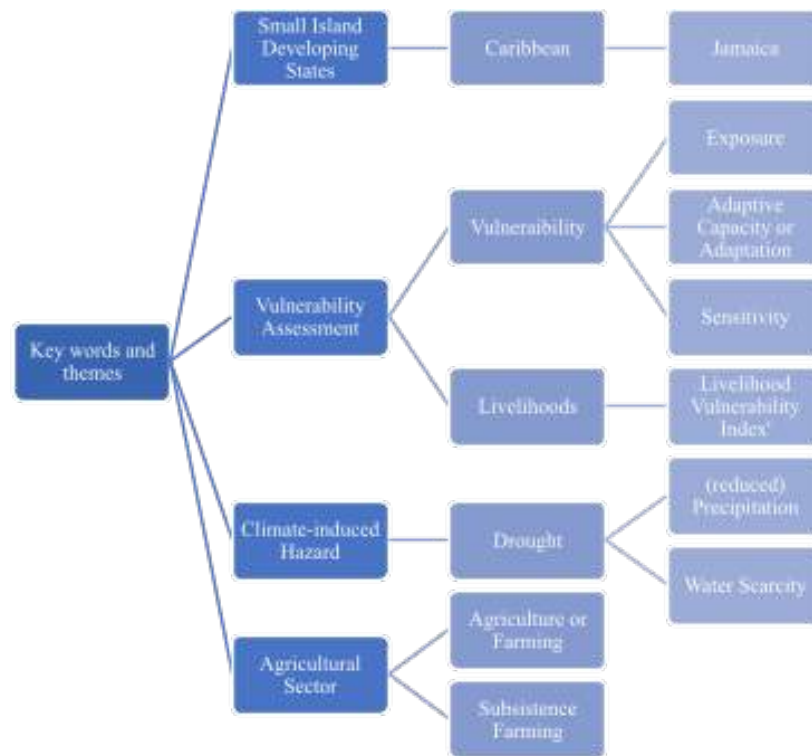


Figure 1: *Tree Diagram of Keywords and Themes Used in Literature Research*

the central themes identified were: 1) the exposure of a social system to hazards; 2) the ability for systems to adapt, respond or recover from hazards; and 3) the sensitivity of a system to such disturbances (Gamble et al., 2017; King-Okumu et al., 2020; Rhiney, 2015; Shah et al., 2013). These key components of vulnerability along with their components and influences were then used to establish the framework for approaching this study's vulnerability assessment (Figure 2).

Definitions and scopes of each component were established based on research by Shah et al. (2013). Firstly, exposure is defined as the level of climate stress over a particular area or group, such as gradual changes in climatic conditions or volatile and extreme climatic events. Secondly, sensitivity relates to the extent a system reacts to climate variability (long/short term scales) where the system can react positively or negatively. Finally, adaptive capacity describes a system's ability to regulate itself during or after extreme climatic events; in the context of a community, it is often determined by socio-economic factors (e.g., infrastructure, food security and education).

Once components were defined, the exposure, sensitivity, and adaptive capacity of the local agricultural sector and its dependent populations in

Jamaica were identified using the selected literature based on the indicators in Figure 2 (IPCC, 2007). Furthermore, the influence of geographic and socio-economic factors on the vulnerability components were explored (Mycoo, 2017).

Results and Analysis

Exposure of the Agricultural Sector to Drought

The results show that Jamaica's local agricultural sector and its dependents' exposure to drought is affected by geographic factors. Firstly, Jamaica's location and topography both greatly influence climate and precipitation patterns on the island and thus, the exposure and subsequent vulnerability of crops.

Jamaica has a tropical climate with an annual temperature range of 26-30°C and a mean annual rainfall of 2,000 mm (UNEP, 2010). Rainfall varies seasonally with higher levels of precipitation from May to June and October to November or December, and lower precipitation levels in January to March and July (UNEP, 2010). Furthermore, climatic variability within the region is heavily determined by topography. Rainfall is highest on the North-

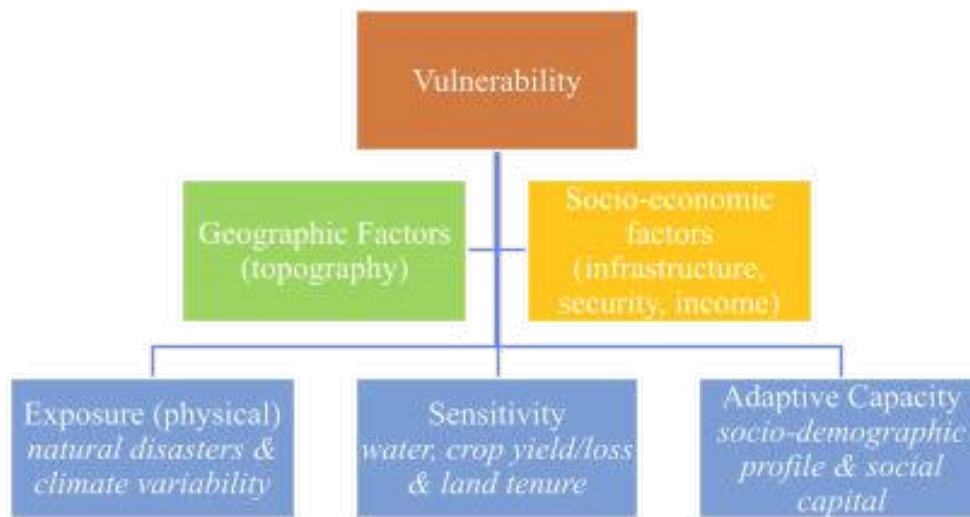


Figure 2: Diagram Illustrating the Components and Influences of Vulnerability

Eastern side of the island, particularly around the Blue Mountains (Figure 3), due to orographic rainfall² (UNEP, 2010). Therefore, the South-Eastern coast of the island is a rain shadow with much drier conditions, making the area more water-scarce and consequently, more susceptible to drought (Moulton et al., 2015; UNEP, 2010). Figure 4 by Mycoo (2017) depicts Jamaica's precipitation patterns, which correlate with the topographic map in Figure 3, illustrating the influence of topography on precipitation and, as a result, drought. In general, seasonal climatic variations and topographic influences determine the timing and duration of the growing seasons for farmers, where crops are grown in the wetter seasons and are harvested in drier seasons (Campbell et al., 2011; Moulton et al., 2015). Consequently, changes in precipitation patterns directly influence the economic security and livelihoods of local farmers, whereby shorter and lower precipitation periods can result in crop failure (Campbell et al., 2011; Moulton et al., 2015).

In addition, Figure 4 exhibits the island's annual precipitation range (928mm-2485mm) and the rain shadow area which is predominantly located in the Westmoreland, Saint Elizabeth, Clarendon and Saint Catherine parishes (Figure. 5; Campbell et al., 2011; Mycoo, 2017; Moulton et al., 2015). Overall, these parishes account for around 45.4% of Jamaica's total farm area (Government of Jamaica,

²Orographic rainfall occurs when trade winds hit the North-Eastern side of Jamaica and are forced over the mountains, resulting in uplift and condensation of water vapour, which leads to cloud formation and precipitation.



Figure 3: Map of Jamaica Depicting its Topography, Parish Boundaries, Major Cities and its Location within the Caribbean (Adapted from Map of Jamaica with elevation, cities, and towns affected by severe weather, by USGS / The COMET Program, 2013. (http://kejian1.cmatc.cn/vod/comet/radar/tropical_cases/media/graphics/map_jamaica_with_elev.jpg)). Caribbean Radar Cases.

2017). Interestingly, despite lower rainfall levels and larger agricultural areas in Clarendon (14% of total agricultural land area) and Saint Catherine (12% of total agricultural land area), existing research predominantly focusses on Saint Elizabeth (9% of total agricultural land area) (Campbell et al., 2011; Gamble et al., 2017; Gamble et al., 2010; Moulton et al., 2015; STATINJA, 2007). Despite its smaller land area, St. Elizabeth is considered the

'breadbasket' of Jamaica, producing 22% of the island's domestic food needs, whilst other parishes are dominated by exported cash crops (Tingling, 2014). Consequently, St. Elizabeth has been primarily used to explore the impact of droughts on local farming communities and their adaptation strategies (Campbell et al., 2011; Moulton et al., 2015).

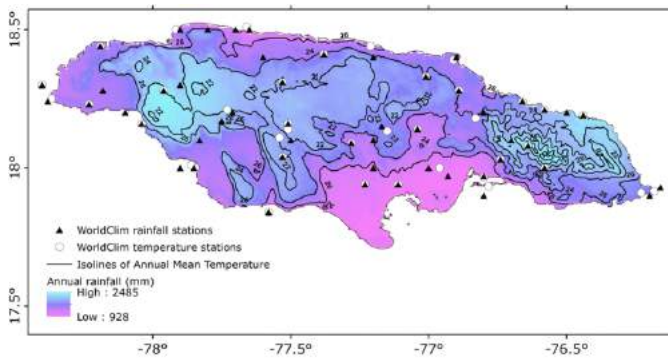


Figure 4: Map of Jamaica Depicting its Rainfall Patterns, Climate Stations and Mean Temperature Isotherms (Adapted from "Assessing the implications of a 1.5 C temperature limit for the Jamaican agriculture sector," by K. Rhiney, A. Eitzinger, A. D. Farrell and S. D. Prager, 2018, *Regional Environmental Change*, 18(8), p. 2315.M.)

Sensitivity of the Agricultural Sector to Drought

The sensitivity and resulting vulnerability of Jamaica's local agricultural sector and its dependents to drought hazards is conveyed through water accessibility, crop yields or losses, and farmers' socio-economic characteristics (Shah et al., 2013).

Firstly, the sensitivity of farmers and their crops to drought events are heavily impacted by the availability of and access to alternative water sources. Farmers often use irrigation systems, rainwater harvesting or purchasing water to sustain their crops (Moulton et al., 2015). During periods of low precipitation and drought, these systems, especially rainwater harvesting, become difficult and expensive to maintain (Moulton et al., 2015). Hence, farmers need to find alternative water sources, which often involves borrowing money to purchase water from water trucks, sharing water, and using potable water supplies (Moulton et al., 2015). Water resource sensitivity is often coupled with low financial capacity, creating a positive



Figure 5: The map shows Jamaica, the national capital Kingston, governorate capitals, major cities, main roads, railroads, and major airports. (Adapted from *Administrative Map of Jamaica*, by Nations Online Project, n.d. (<https://www.nationsonline.org/oneworld/map/jamaica-administrative-map.htm>). CCL.)

feedback loop³ where unreliable water supplies can result in crop failure (Campbell et al., 2011). This can reduce a farmer's income and prevent them from purchasing water during drought periods (Campbell et al., 2011). Therefore, this highlights the importance of stable and affordable water resources in ensuring low sensitivity to drought conditions.

Secondly, another indicator of Jamaica's sensitivity to drought conditions is emphasised through crop yields and losses. Campbell et al. (2011) discusses how farmers lost more than 50% of their crops during the 2008 drought, despite 63% of farmers purchasing water (Figure 6). Furthermore, Rahman et al. (2016) outlined how the 2014 drought reduced agricultural production up to 30% and resulted in an economic loss of \$1 billion. As agriculture accounts for 7% of Jamaica's GDP, it is a critical source of Jamaica's livelihood and economic vitality, particularly for farmers (Rahman et al., 2016). Therefore, changes to income and crop yield greatly influence the sector and its dependent's sensitivity.

Finally, socio-economic characteristics of Jamaican farmers' income sources, housing, and landholding influence their sensitivity to drought

³A positive feedback loop is a process that occurs within a system in which a product of an action results in an increase of that action.

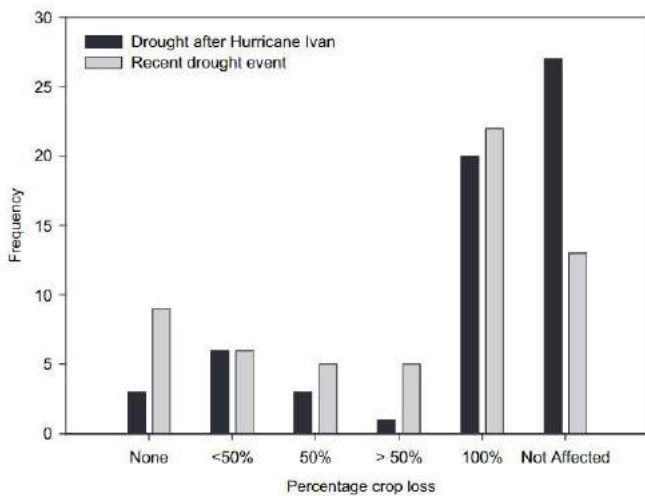


Figure 6: *Crop loss to 2008 drought compared to drought after Hurricane Ivan* Note: Graph Comparing the Frequency of Percentage Crop Loss due to the 2008 Drought vs. the 2004 Drought. (Adapted from “Dealing with drought: Small farmers and environmental hazards in southern St. Elizabeth, Jamaica,” by D. Campbell, D. Barker and D. McGregor, 2011, *Applied Geography*, 31(1), p. 153.)

hazards. Rahman et al. (2016) conducted a study in cooperation with 453 farmers throughout Jamaica to examine the economic impact of the 2014 drought. Firstly, they found that households had “2.79 (out of 9) different sources of income and livelihood” (p.16), which indicates that farmers have a low income and livelihood diversification⁴. Generally, a low diversification of income results in a greater reliance on high crop yields for survival. Secondly, drought sensitivity is also influenced by a farmers’ housing and landholding where land ownership and size impacts a farmers’ reaction to drought conditions. Rahman et al. (2016) found that 70% of farmers owned agricultural land, and 51% leased land and had an average size of 3 to 4 ha. Despite this, an agricultural census in 2007 indicated that the number of landless farmers in Jamaica has increased by 87.4% since 1996 (Graham, 2012). Ultimately, housing and land ownership are only a piece in determining farmers’ overall sensitivity and subsequent vulnerability to

⁴Rahman et al. (2016) identified 9 sources of income: Cultivation of land, Agricultural casual wage labour, Non-agricultural casual wage labour, Animal husbandry, Salaried work, Non-agricultural businesses, Remittances, Pensions, and Others. The household average signifies that 2 to 3 of these sources were present in each house.

drought risk as they are influenced by other socio-economic factors, previous crop yields or losses, and water accessibility.

Adaptive Capacity of the Agricultural Sector to Drought

The ability of Jamaica’s agricultural sector and its dependents to recover from drought events exhibits their adaptive capacity, or lack thereof, and subsequently their vulnerability to drought. A primary indicator of the sector’s adaptive capacity is Jamaica’s socio-demographic profile (IPCC, 2007; Shah et al., 2013). The island has a population of around 3 million people, with approximately 44% of the population living in rural areas and about 16-20% of the population in poverty, illustrating Jamaica’s high socio-economic vulnerability (Trading Economics, 2021b). Campbell et al. (2011) highlighted the impact of financial capacity on farmers’ ability to recover from drought where, in 2008, water prices increased by around 100% over 2 years, surpassing the economic capacity of small-scale farmers. As a result, farmers were forced to watch their crops and livelihoods die. Hence, Jamaican populations, especially low-income local farmers, have a low adaptive capacity to drought hazards due to their limited financial capacity to meet rising resource costs and combat drought impacts (Campbell et al., 2011; Moulton et al., 2015).

Furthermore, Campbell et al. (2011) highlights how drought events amplify the importance of social capital for local farmers and communities, allowing farmers to endure drought events despite economic and resource limitations. For instance, farmers in the St. Elizabeth parish coped with water deficits by either sharing water amongst one another (63%), or borrowing money or water as well as using social connections with truck drivers or neighbours to obtain water and combat drought (25%) (Campbell et al., 2011; Moulton et al., 2015). Jamaica’s social capital is also exhibited through robust indigenous knowledge as farming communities in the region have adopted various practices to adapt to the characteristically drier conditions of the rain shadow region (Campbell et al., 2011; Moulton et al., 2015). These farming strategies have been passed down for generations and include planting drought-resilient crops, mulching Guinea grass to reduce soil moisture loss, and timing crop watering (Campbell et al., 2011). The suc-

cess of community bonds, social capital, and indigenous knowledge highlights the greater adaptive capacity of Jamaica's local agricultural sector and its dependents to drought conditions. However, it is important to note that the intensity and length of drought periods may affect a community's social capital, where sharing resources may result in faster depletion and create conflicts and greater deficits (Campbell et al., 2011; Moulton et al., 2015). Furthermore, some water-truck drivers and wealthier farmers within the community have been known to use water scarcity to their advantage by increasing water prices or capitalising on reduced market competition, emphasising weaknesses in social capital and lowering adaptive capacity (Campbell et al., 2011).

Discussion

The results of the present study illustrate the exposure, sensitivity, and adaptive capacity of Jamaica's local agricultural sector and its dependents to drought hazards. Firstly, Jamaica's agricultural sector and dependents were identified as highly exposed to drought hazards, particularly along the South coast, due to the islands' topography and variable rainfall patterns (Campbell et al., 2011; Moulton et al., 2015). Secondly, the local sector and communities were identified as sensitive to drought due to poor access to water resources, high crop losses owing to prior drought, low income diversification, and limited landholding (Campbell et al., 2011; Moulton et al., 2015). However, studies also found that sensitivity to drought was mitigated in local farmers with access to irrigation systems and secure landholding, who in some cases even benefitted from diminished local competition (Campbell et al., 2011). Although these contrasting findings illustrate regional and social variability within Jamaica, the research indicates that most local farmers have been identified as highly sensitive to drought (Campbell et al., 2011). Finally, local sectors and communities were categorised as having a low adaptive capacity due to poor socio-demographic profiles but a high adaptive capacity with regards to social capital. This conflicting assessment of the sector's adaptive capacity was unexpected, and emphasises the importance of communal bonds and indigenous practices. Furthermore, it highlights the short-term resilience of

local communities to drought. Nevertheless, the long-term capacity of local communities to aid each other during drought periods may change depending on the frequency, duration and intensity of future droughts (Campbell et al., 2011). If drought frequency and intensity increases, farmers may no longer have the capacity to aid one another, diminishing their social capital. Consequently, the risk of social capital deterioration is high, and therefore, it is necessary to increase mitigation and adaptation efforts locally and nationally (Campbell et al., 2011; Moulton et al., 2015). In addition, this high social capital was unable to counteract the low adaptive capacity and subsequent vulnerability of these communities.

Campbell et al. (2011), Moulton et al. (2015), and Mycoo (2017) discuss possible mitigation and adaptation efforts, including improving water management locally and nationally. On a local level, rainwater harvesting and scaling down agricultural production can be increased, while on a national level, Integrated Water Resource Management (IWRM) Systems and public resource management policies can be developed and enforced. Furthermore, strengthening the socio-economic capacity of farmers by promoting income diversification (e.g., by developing education and tourism) and prioritising local produce within domestic markets serve as means to mitigate the impacts of future drought (Mycoo, 2017; Rahman et al., 2016). These strategies are already being implemented by Jamaican farmers and communities in other Caribbean SIDSs, yet greater organisation, financing, capacity building and enforcement is necessary to reduce Jamaica's drought vulnerability (Campbell et al., 2011; Mycoo, 2017; Rahman et al., 2016).

Interestingly, there were no significant differences in the opinions on the importance of access to water, the benefits of indigenous and communal sharing, and the need for greater policy implementation and government intervention in reducing drought vulnerability asserted by the literature, suggesting that there is a somewhat established consensus within the field. However, there were inconsistencies between the papers regarding whether tropical cyclones (e.g., hurricanes) had a greater impact on the agricultural sector than drought, stressing the importance of conducting local and case-study specific vulnerability assessments (Campbell et al., 2011; Moulton et al., 2015).

The varied degree of consensus within the literature highlights the limitations of the study. Firstly, the lack of research on other areas of Jamaica, since most literature focussed solely on agriculture and drought in St. Elizabeth. Hence, a holistic depiction of local communities throughout Jamaica's rain shadow region is lacking and thus, this study's results regarding vulnerability may not be as applicable to other communities. Secondly, this study was based on existing literature which may not be up-to-date, and limits the representation of indigenous perspectives to St. Elizabeth and what was mentioned in the case-study papers, notably those by Campbell et al. (2011) and Moulton et al. (2015). Finally, the study produced a qualitative vulnerability assessment, and thus failed to engender quantifiable results to produce statistically-backed conclusions, which may affect the validity of results.

Conclusion

This study has produced a vulnerability assessment, identifying the exposure, sensitivity and adaptive capacity of Jamaica's local agricultural sector and its dependents to climate-induced drought. It discusses the implications of Jamaica's high exposure, high sensitivity, and low adaptive capacity to drought whilst outlining possible mitigation and adaptation measures backed by literature. In doing so, it highlights local vulnerabilities and regional variabilities within Jamaica's agricultural sector and communities, providing a coherent framework for drought mitigation and adaptation efforts. Furthermore, it emphasises particularly vulnerable aspects of the local agricultural communities, namely water accessibility due to the cascade impact water scarcity has on crops and farmers' income. Consequently, Jamaica needs to improve its poor water management by providing a coherent framework for communities, policymakers and other actors to mitigate and prepare for droughts. This framework could include developing an IWRM plan or enforcing current policies to prevent increasing drought vulnerability in its local agricultural sector.

Overall, these findings indicate that Jamaica's local agricultural sector is highly vulnerable to drought hazards. This vulnerability will continue to increase as drought is predicted to worsen and

increase in frequency and intensity whilst water scarcity, crop loss and financial insecurity prevail (Campbell et al., 2011; Gamble, 2014; Moulton et al., 2015). Thus, further research on future drought conditions and long-term drought impacts on Jamaica's agricultural sector will be increasingly vital to future mitigation and adaptation strategies (e.g., local capacity building). Future research could also generate spatial data on the drought vulnerability of Jamaica's agricultural sector to allow for a quantifiable assessment. While it is evident that Jamaica's local agricultural sector and dependents are increasingly vulnerable to drought, the solidarity and cooperation of communities provide hope for the future of this essential sector.

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Sciences

Mini-me in a Petri Dish

How Brain Organoids can be the Research Model of the Future

Mayra Albayrak



Photographer: Daria Roman

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Introduction

As scientific discovery approaches new heights, neuroscience has improved immensely over the last decades. With insights from psychological studies of the 1900s, technological advances in the field, and the unquenchable curiosity over the unexplained mechanisms of the mystical organ that is the brain, neuroscience has evolved to place itself in the spotlight. Every passing turn around the sun brings new advances and discoveries in the vast fields of neurosciences, where the studies not only relate to the medical world but begin expanding to involve behavior, economics, education and art. With increasing public interest in, and demand for neurosciences, research methods and models are under greater scrutiny. Currently, an extensive proportion of the research on the human brain depends on animal models, with research conducted on rats and mice comprising 45% of the published literature (Manger et al., 2008). However, researchers have voiced extensive criticism of the use of animal models, as this approach is not the most optimal method to investigate the human brain (Zhao & Bhattacharyya, 2018). While similar, animal models do not exactly translate to the distinct structure of the human brain. Therefore, they do not give the opportunity to fully understand human brain development, nor unravel the complex genetics of neurological disease (Lancaster et al., 2013). However, considering that the scientific community cannot experiment as freely on a human brain, brain organoids appear to be a promising alternative approach. Here, I will focus on the background, development, application and advancement of this method, to exemplify and strengthen the argument of brain organoids being the research model of the future in neuroscience.

Development of Organoids

There are several important milestones in the emergence of brain organoids and a notable one occurred when Takahashi and Yamanaka (2006) generated induced pluripotent stem cells (iPS) from mouse cultures. Stem cells are cells that are capable of becoming any specialized cell in the body, whereas the induced form would be taking a somatic cell of the body and returning it to an embryonic state where it can function as a stem cell

(Takahashi & Yamanaka, 2006). Instead of using human embryonic stem cells (ESC) that are difficult to acquire, this method induced mouse cell cultures to generate stem cells. These cells exhibit embryonic stem cell properties, and due to their efficacy and compared ease in obtainment, they offer a promising alternative to ESCs. In a landmark study, Eiraku et al. (2008) formed cortical tissue from ESCs. SFEBq, a special 3D aggregation culture, was used to grow neural epithelium and provided a more controlled environment for cortical tissue development (Eiraku et al., 2008). Whilst not a brain organoid, making this cortical tissue from ESCs highlighted the possibility of building human organs from stem cells. In 2013, Lancaster and her team were one of the first to demonstrate the production of what we call brain organoids today. While emphasizing the need to find an alternative model to study neurological disorders, they proposed a 3D *in vitro* model using human pluripotent stem cells (hPSCs) and even modeled a microcephaly condition with iPS cells. The researchers coined the model “brain organoids” (Fig.1) because it was shown to develop different brain regions, contain cell populations that could produce mature neuron subtypes, and have a similar development style that can be compared and studied regarding human cortical development (Lancaster et al., 2013). Another team closely investigating cerebral organoids also used pluripotent stem cells in 3D culture to generate what they coined “human cortical spheroids” (Paşca et al., 2015). These spheroids contain neurons from several different layers of the cortex and display complex neuronal activity, which combine to give new opportunities for research on development and disease. These novel characteristics of brain organoids are chiefly their ability to develop specific brain regions and related neurons, display networks, show synaptic activity, demonstrate pathology of neurological disorders, and their similarity to the development of the human brain. These unique features allow brain organoids to act as a more improved research model.

Applications of Brain Organoids

Applications of brain organoids are mainly centered around studying neuronal development and pathological processes of neurological diseases.

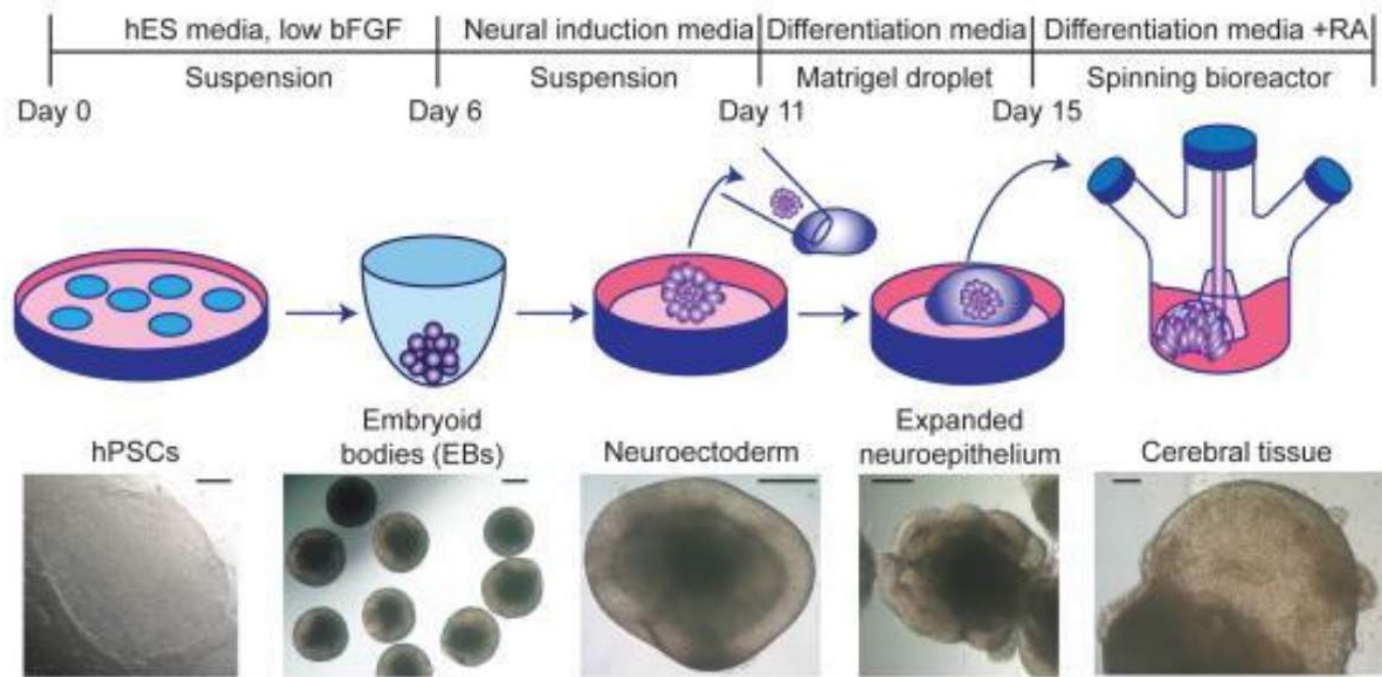


Figure 1: A special environment is used to develop hPSCs to embryoid bodies. Embryoid bodies can generate neuroectoderm (progenitor to neurons) in a special medium. The neuroectoderm is kept in 3D culture, inside Matrigel droplets for differentiation. Matrigel droplets are put in the spinning bioreactor with additional nutrients for full development of brain organoids, and small molecules or growth factors are provided for specific differentiation. This process takes around 20 days. Scale bars correspond to 200 μm . Adapted from "Cerebral organoids model human brain development and microcephaly," by M.A. Lancaster et al., 2013, *Nature*, 501(7467), 374. Copyright 2013 by Macmillan Publishers Limited.

The emphasis has expanded beyond neurodevelopmental (microcephaly, Down syndrome, autism spectrum disorders, etc.) and neurodegenerative (Alzheimer's, Parkinson's, etc.) disorders to include research on brain tumors, infectious diseases of the brain, mental illness, and neuronal networks (Shou et al., 2020). Although brain organoids do not present the same level of complex development and structure of the human brain as some animal models do, they have important characteristics that sets them apart. These include their accurate representation of human brain development up to the 24th week, and the tissue's advanced cellular architecture, electrical activity, neuronal communication, and high genetic adaptability (Chiariad & Lancaster, 2020). Therefore, a vast amount of studies involve the application of brain organoid technology for the study of various disorders. An example is autism spectrum disorders, where an imbalance of glutamate/GABA neurons was found in brain organoids, along with altered gene expression, regulation, and mutations (Shou et al., 2020).

For Alzheimer's disease (AD), Raja et al. (2016) observed that the organoids successfully exhibit pathologies characteristic of AD, and treatments with specific inhibitors were shown to reduce these pathologies. Additionally, a study on the application of brain organoids to schizophrenia showed decreased expression of the FGFR1 gene and excessive activation of the WNT signaling pathway, as well as suggesting that due to the FGFR1 mechanism's important role in nervous system development, targeting the FGFR1 mechanism could be a solution against developmental anomalies (Stachowiak et al., 2017). This small selection of studies exhibits the potential of offering therapeutic solutions to certain diseases even at this early stage in development.

Current Research on Brain Organoids

To develop brain organoids to the extent where they may even replace animal models, research



Figure 2: Two types of spheroids were derived from hPSCs: human subpallium spheroid (hSS) and human cortical spheroid (hCS). Image shows the separate spheroids and the fused assembloid. Adapted from “Assembly of functionally integrated human forebrain spheroids,” by Birey et al., 2017, *Nature*, 545(7652), 56. Copyright 2017 by Macmillan Publishers Limited.)

needs to focus on how to improve the existing technology. Scientists are especially concerned with improving the similarities of brain organoids to human cortical tissue and networks. A study on the cell diversity and development of brain organoids revealed that with longer maturation, cells that are involved in neuronal networks spontaneously arise and assemble into neural networks (Quadrato et al., 2017). These cells then acquire structures that resemble dendritic spines, which were previously difficult to generate *in vitro*. Furthermore, Quadrato et al. (2017) also showed that by combining photosensitive cells with brain organoids, researchers can investigate neuronal systems using optogenetics. Combined, this method allows the use of dendritic structures in research on developmental processes and synaptic damages.

Building on the neuronal networking potential of these organoids, studies reveal that along their maturation, the brain organoids actively change their cell diversity and show increases in electrical activity, implicating that increasingly complex and accurate organoids can be systematically developed in laboratory conditions (Trujillo et al., 2019). To improve the maturation process, an air-liquid interface culture was also investigated and found to improve neuronal survival and growth of the axons (Giandomenico et al., 2019). This way, the efficiency of the axon tracts, such as their length and output, their formation, their direction in and out of the organoid, and the overall function of the neuronal circuits can be more successfully researched. One important aspect of studying network formations involves evaluating their neuronal outputs. While Giandomenico et al. (2019) demonstrated that the subcortical tracts could inner-

vate co-cultured mouse muscle explants, another team under the supervision of Sergiu Pașca has recently developed a more complex brain organoid (Birey et al., 2017) and succeeded in developing an advanced system to investigate the motor neuronal output of cerebral organoids (Andersen et al., 2020). The foundation for this was laid when the team managed to bring together two cerebral spheroids to make one connecting piece (Birey et al., 2017). The researchers placed two spheroids of different brain regions together in a centrifuge with nutrients, and observed that they fused. Coining this structure “assembloids” (Fig.2), the organoids that were generated had different types of cortical neurons, integrated GABAergic and glutamatergic cell types with complex interactions, and showed neuronal migration seen in fetal maturation (Birey et al., 2017). Generating these successful assembloids was significant in that it helped to study complex neuronal interactions, multi-synaptic circuits, and the pathology of developmental diseases.

Building on this achievement, Pașca’s team employed assembloids in generating a cortico-motor organoid system (Andersen et al., 2020). They managed to design a three-assembloid system (Fig.3) connecting a cortical spheroid, spinal spheroid, and skeletal muscle spheroid, which were all derived from human iPS cells (Andersen et al., 2020). Movement in the muscle was triggered by stimulation of the cortical spheroid and the successful integration of this system demonstrated the assembly and connective potential of the organoids, as well as showed their capability to create complex interactions. This relationship between the two tissues is significantly close to the mechanisms of movement in the human body, therefore, recreating this connection between cortical signals and muscle tissue is an important achievement. Finally, a recent study revealed that brain organoids can assemble optic vesicles, that is, tissues that are the previous stages in the development of the eyes (Gabriel et al., 2021). This is significant as it shows that forebrain organoids follow an inherent attempt to form functional optic vesicles, whereby they exhibit cellular elements associated with developing them, as well as photosensitive activity, where implications of this could lead to increased between-tissue interactions and development of more complex brain organoids that can interact with the environment. In summary, these recent studies highlight the diversity of brain

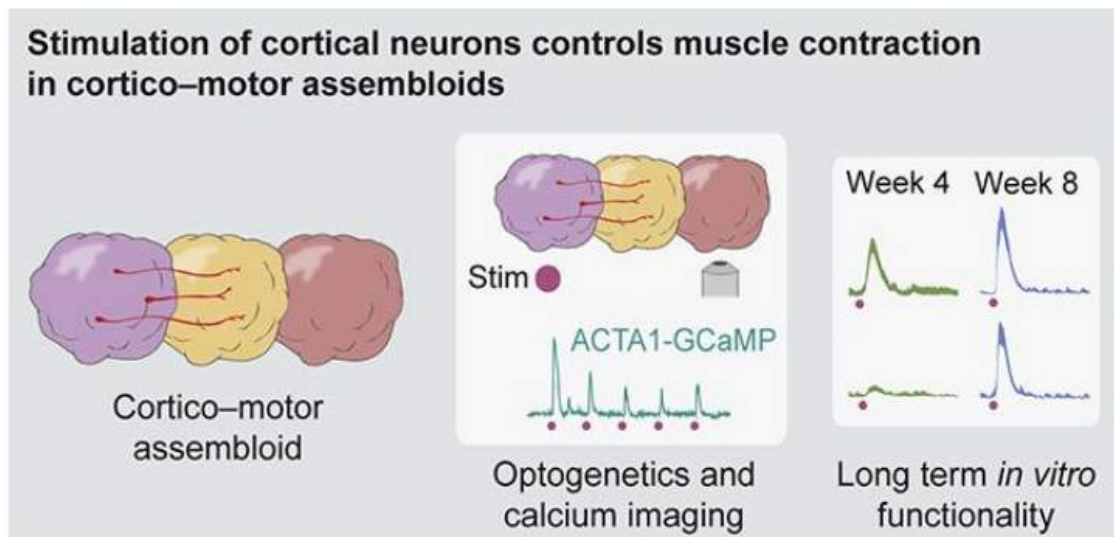


Figure 3: Human iPS cells were used to generate three different spheroids (cortical, spinal, skeletal muscle). The spheroids were fused to make one assembloid and were stimulated. Cortical neuron stimulation was found to successfully contract skeletal muscle, revealing the functionality of the cortico-motorassembloid system. Adapted from “Generation of functional human 3D cortico-motor assembloids,” by Andersen et al., 2020, *Cell*, 183(7), 1913. Copyright 2020 by Elsevier Inc.

organoids that is continually revealed, such as providing important models to study neural networks, cell diversity, electrical activity, fetal maturation and multi-synaptic circuits, and with each finding the research opportunities and similarities to the human brain increase.

Limitations of Brain Organoids

Whereas many of the recent achievements by researchers elucidate the future possibilities of brain organoids, they also unravel their crucial shortcomings. The most relevant limitations of the current organoid technology are their limited size due to circulatory inadequacy, the variety in their composition, and reproducibility, (Chiaradia & Lancaster, 2020) as well as their inability to display complex processes related to cognition and consciousness. Due to the lack of blood vessels and a circulatory system, there is insufficient oxygen and nutrients circulating the organoids, therefore, the organoids reach a limited size with the average being 4mm (Qian et al., 2019). Concerning research in general, replicability and reproducibility are major factors in credibility, and can determine the future of a specific study. As one of the limitations of brain organoids, Shou et al. (2020) reported that there was significant variability in the

organoids from different iPS cell lines, and even in the organoids from the same batches. This finding shows that the composition and production methods are not able to create analogous results yet, which warrant increased attention to the process of brain organoid generation. Last but not least, concerning cognition and consciousness, it is a complex topic of discussion where it has been argued that organoids could potentially reach a position where neurological properties associated with consciousness could be studied (Lavazza, 2021). However, organoids themselves gaining consciousness is not a realistic expectation as of now, and even if that would be the case, major ethical and moral concerns would ensue. Therefore, current efforts to improve organoids are mainly focused on eliminating technical limitations, such as the size and reproducibility, to improve the credibility of organoids in developmental and disease related research. To achieve this, future brain organoids need better production methods which can produce organoids with consistent morphology, size, and cellular composition, along with efficient circulatory systems and an improved culture.

Discussion & Conclusion

Continuous work is being done to improve brain organoids and get them to a level where they could replace animal models in the future. Therefore, I argue that in a few decades, a sizable and durable brain organoid that successfully presents human cortical development, having a functional and intricate neuronal system with multiple neuronal outputs as well as brain regions associated with higher level cognitive and physiological functions, will be developed. Current research focuses extensively on how to address and overcome the aforementioned shortcomings. Assembloids are an important part of this work, as well as polarizing organoids or combining them with glial cells (Makrygianni & Chrousos, 2021). Generating the organoids on microfluidic chips is being investigated to improve reproducibility and variability since microfluidic chips are able to perfuse the tissue with necessary nutrients and morphogens in a more controlled and automated manner (Chiaradia & Lancaster, 2020). Other suggestions to improve the automation and the production include ideas such as feeder-free hPSCs, minimization of ingredients and minimizing of the bioreactors (Qian et al., 2019). Additionally, particular organoids that imitate different cortical layers, vascularization, and regions such as the hippocampus and cerebellum are key areas of interest (Shou et al., 2020). Furthermore, to achieve *in vitro* vascularization, researchers culture endothelial tissue, which contains blood vessels and capillaries, and combine it with organoids (Qian et al., 2019; Chiaradia & Lancaster, 2020). This is a step further, however, it is still in the infancy of development and thus further research is required to generate new ideas on how to propel brain organoids further. Looking at these efforts, the ultimate goal is to generate organoids that would model top-level functions of the human brain. With strong and functional networks, assembloids, expression of different cell types, and inducibility of neurological disorders, brain organoids are a promising model that would potentially be more efficient than animal models and improve significantly in the next few decades.

In this editorial, the question of whether a more successful way of modeling the brain could exist in scientific research was posed, and as a possible solution, the emergence and employment of brain organoids was given. The development, applica-

tions, and current shortcomings were presented to illustrate the status quo. Based on how fast brain organoids developed from mere cortical tissues to assembloids with neuronal outputs that are used in modeling countless neurological disorders, it can be expected that this technology will reach new heights in the next few decades. The incredible discoveries in this area only comprise the last decade, and the amount of advancement in recent studies projects to even a higher probability of improvement in the future. With the promise it holds to replace animal models, neuroscientists are looking at a future where they will be able to work on possibly the most accurate human brain model to date.

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Social Sciences

International Post-Colonial Power Inequalities Affect Everyone

A TWAIL Perspective on How Self-Referrals to the ICC Perpetuate Domestic Power Imbalances

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Abstract

Third World Approaches to International Law (TWAIL) scholars have attempted to explain the Global North's domination of the Global South, through deconstructing the inherent, institutionalized power imbalance in postcolonial international law. The ICC is such an institution of international law that, through its fundamental bias, subordinates African states in the name of universal criminal justice, even though African states have the power to self-refer a situation to the ICC. TWAIL theories of international legal structures and their power imbalances indicate that self-referrals to the ICC can be used to perpetuate domestic power imbalances within Africa. This paper synthesizes arguments and theories by TWAIL scholars about the ICC and African states to demonstrate that African governments can utilize the ICC's self-referral system to target domestic opposition, replicating patterns of power imbalances at the domestic level. This study offers novel insights into how TWAIL theories can be applied domestically, further allowing for consideration of the true function of self-referrals as a legitimate means of triggering ICC jurisdiction, and whether ICC interventions in large-scale crimes may be causing disproportionate harm to civilians and the political functioning of African countries.

Keywords and phrases: *Third World Approaches to International Law (TWAIL), International Criminal Court (ICC), Africa, self-referrals, power imbalance*

Introduction

International law is portrayed as a fair system that is required for peaceful cooperation among states. However, what if, in fact, this system perpetuates injustice in the majority of the world? The lens through which Western society approaches international law is becoming more important as we recognize the realities of our post-colonial world in which power politics determine who has a voice on the global stage. Within the last thirty years, Third World Approaches to International Law (TWAIL) scholars have aimed to explain the inherent power imbalances present in the system of international law which unjustly leads to the Global North's domination over the Global South.¹ The International Criminal Court (ICC) has been criticized for being such an institution of international criminal law that is situated within an institutional, politicized history that perpetuates the subordination of states in the Global South by imposing Western ideals of universalism.² Out of the three main ways to refer a situation to the ICC and trigger its jurisdiction as entailed in Article 5 of the Rome Statute, self-referrals³ are deemed to be the most impartial and functional,⁴ yet they only allow for communication between the ICC and governments of states, risking abuse of this mechanism already at the stage of referral.⁵

TWAIL has long been used to help understand and deconstruct the imbalanced power relations between international legal institutions and states in the Global South,⁶ particularly by investigat-

ing how concepts of power and subordination create a self/other distinction (Global North/Global South).⁷ However, scholars have yet to comprehensively examine/explain/elucidate how this particular dynamic may reproduce itself on a more domestic level.⁸ Therefore, this paper synthesizes TWAIL scholars' arguments about the ICC and African governments to demonstrate how compliant African governments use prejudiced international legal systems - such as the ICC's self-referral system - against certain domestic opposition actors. This ultimately replicates the international self/other distinction domestically, which this paper demonstrates using illustrative case law examples. TWAIL theories of international legal structures and their power imbalances thus indicate that self-referrals to the ICC can be used to perpetuate domestic power imbalances in Africa.

Literature Review

TWAIL theory, with Anghie, Mutua, and Gathii at its forefront, claims that international law is exploitative by nature, in that it is based on Western ideals that carry forward ideas of colonialism which are inherently and unjustly being used to dominate the Global South.⁹ One of the core ideas of TWAIL emphasizes the "self/other" distinction¹⁰ between the Global North and Global South that justifies and perpetuates the North's domination of the South.¹¹ International law originated with

¹Makau Mutua and Antony Anghie, 'What is TWAIL?' [2000] 94 ASIL 31; Usha Natarajan, Laura Betancur-Restrepo, Amar Bhatia, John Reynolds, Ntina Tzouvala and Sujith Xavier, 'Third World Approaches to International Law Review: A Journal for a Community' [2020] 1 TWAIL Rev 7.

²Asad G Kiyani, 'Third World Approaches to International Criminal Law' [2015] 109 AJIL Unbound 255 <https://www.jstor.org/stable/27003150> accessed 14 November 2021.

³Under Article 13 of the Rome Statute, a self-referral is when a State Party to the ICC refers a potential crime, that falls under the ICC's jurisdiction under Article 5, to the Prosecutor for investigation, thus triggering its jurisdiction.

⁴Paola Gaeta, 'Is the Practice of 'Self-Referrals' a Sound Start for the ICC?' [2004] 2(4) JICJ 949, 951 <https://doi-org.proxy.uba.uva.nl/10.1093/jicj/2.4.949> accessed 18 November 2021.

⁵Parvathi Menon, 'Self-Referring to the International Criminal Court: A Continuation of War by Other Means' [2015] 109 AJIL Unbound 260 <<https://www.jstor.org/stable/27003151>> accessed 18 November; and suggested by Gaeta (n 4).

⁶James T Gathii, Obiora Okafor and Antony Anghie, 'Africa and TWAIL' [2010] 18(1) AYIL 9 <https://doi-org.proxy.uba.uva.nl/10.1163/22116176-01801003> accessed 14 November 2021.

⁷Menon (n 5) 263. This paper will use the concept of "self/other" as outlined by Menon, which refers to the distinction and pattern of exclusion created through oppression by colonial powers of Western states towards non-Western cultures and peoples.

⁸As explicitly argued by Menon (n 5) 264, and highlighted by Kiyani (n 2) and Lucrecia García Iommi, "Whose Justice? The ICC 'Africa Problem'" [2020] 34(1) IR 105 <https://doi.org/10.1177/0047117819842294> but not elaborated on.

⁹Mutua and Anghie (n 1) 31; James T. Gathii, 'TWAIL: A Brief History of its Origins, its Decentralized Network, and a Tentative Bibliography' [2011] 3(1) Trade Law and Development 26, 30 <https://ssrn.com/abstract=1933766> accessed 18 November 2021; Pacifique Manirakiza, 'A Twail Perspective on the African Union's Project to Withdraw from the International Criminal Court' [2018] 23(1) AYIL 391, 402. <https://doi-org.proxy.uba.uva.nl/10.1163/22116176-02301016> accessed 18 November 2021; Mohsen al Attar, 'TWAIL: a Paradox within a Paradox' [2020] 22(2) ICLR 163, 165. <https://doi-org.proxy.uba.uva.nl/10.1163/18719732-12341426> accessed 14 November 2021.

¹⁰As used by Menon (n 5) 263.

¹¹ibid; reinstated by Mutua and Anghie (n 1) 36.

white-Europeans exercising their belief of superiority over other groups and cultures and over time culminated normatively into international law, becoming a tool for European hegemony and universalism¹² by subordinating non-Europeans to its “racialized hierarchy.”¹³ The self/other distinction thus embodies the Global North’s “othering” of the Global South, creating conscious and subconscious power imbalances within the system of international law whereby the Global North (“self”) can employ this system to exclude and subordinate the Global South (“other”) to serve its political or economic interest.¹⁴

Bearing in mind these fundamental TWAIL concepts, other scholars have emphasized how TWAIL challenges traditional, international legal hierarchies,¹⁵ highlighting that European hegemony is also perpetuated through legal institutions like the ICC¹⁶ which have internalized the post-colonial self/other distinction.¹⁷ Since its inception, the ICC has been criticized for how it initiates investigations and its mechanisms.¹⁸ Discussions of the “African bias” have been at the forefront of the debate regarding the selection of situations to investigate - some claim that the fact that 10 out of 15 of the ICC’s investigations were initiated on the African continent¹⁹ reflects an inherent bias.²⁰ Traditionally it has been argued that out of the three main ways to trigger the ICC’s jurisdiction, self-referrals are the least politically influenced, compared to United Nations Security Council (UNSC) referrals or the *proprio motu* powers²¹ of the Prosecutor.²² Indeed, because the UNSC is made up of

only a few powerful countries, the Prosecutor has discretionary power, as opposed to self-referrals that would actually allow states themselves to take agency over initiating an ICC investigation on their own territory. During the Rome Statute’s development between 1994 and 1998,²³ it was assumed by most states and international law academics that the self-referral mechanism would not be employed.²⁴ Since states could not be trusted to defend human rights or initiate investigations on their territory, it was believed that the distant position of the prosecutor and UNSC would allow for a more impartial approach when initiating investigations.²⁵ Nevertheless, other scholars have claimed that the mechanism of self-referral can be abused easily, as it can be used by states to steer the investigation by the Court to target state-opposition violence only.²⁶

Considering the aforementioned self/other distinction being about the Global North and legal institutions “othering” the Global South, Mutua and Manirakiza take this one step further by proclaiming that post-colonial power arrangements can manifest themselves domestically, for example, through abuse of the self-referral mechanism.²⁷ They suggest that this can be explained by the asymmetrical power dichotomy inherent in these international institutions, which causes the complicity of states in the Global North.²⁸ Kiyani and Menon further explore this idea.²⁹ They argue that TWAIL is as much about explaining how international law causes the Global North/Global South distinction as it is about how international law perpetuates post-colonial power arrangements within Global South states, re-creating patterns of domination domestically.³⁰ For example, Menon con-

295; Harmen van der Wilt, ‘Self-referrals as an Indication of the Inability of States to Cope with Non-State Actors’ [2015] Amsterdam Centre for International Law 210, 212; Kirsten J Fisher, ‘Africa’s Role in the Progression of International Criminal Justice: a Moral and Political Argument’ [2018] 56 J Mod Afr Stud 541, 548 doi:10.1017/S0022278X18000587 accessed 18 November 2021.

²³Robert Cryer, Darryl Robinson and Sergey Vasiliev, *An Introduction to International Criminal Law and Procedure* (4 edn, CUP 2019) 145.

²⁴Akhavan (n 22) 286.

²⁵ibid.

²⁶Gaeta (n 4) 951; Menon (n5) 260-261.

²⁷Mutua and Anghie (n 1) 37; Manirakiza (n 9) 421.

²⁸Mutua and Anghie (n 1) 37; Manirakiza (n 9) 421.

²⁹Kiyani (n 2) 258; Menon (n 5) 263.

³⁰ibid.

¹²Mutua and Anghie (n 1) 36.

¹³ibid 31.

¹⁴ibid.

¹⁵Gathii, Okafor and Anghie (n 6) 11-12.

¹⁶Kiyani (n 2) 255; Manirakiza (n 9) 405.

¹⁷Attar (n 9) 165.

¹⁸Gaeta (n 4) 949; Menon (n 5) 260.

¹⁹International Criminal Court, ‘Situations Under Investigation’ (ICC, 2021) <https://www.icc-cpi.int/pages/situation.aspx> accessed 4 October 2021.

²⁰Kiyani (n 2) 255; Gino Naldi and Konstantinos D Magliveras, ‘The International Criminal Court and the African Union: A Problematic Relationship’ in Charles C Jalloh and Ilias Bantekas (eds), *The International Criminal Court and Africa* (OUP 2017); Manirakiza (n 9) 405; Iommi (n 8).

²¹The power of the Prosecutor to initiate investigations by their own authority.

²²Gaeta (n 4) 951; Payam Akhavan, ‘International Criminal Justice in the Era of Failed States: The ICC and the Self-Referral Debate’ in Carsten Stahn and Mohamed M El Zeidy (eds), *The International Criminal Court and Complementarity* (CUP 2011)

tends that several African states “have used the trigger mechanism of self-referrals to the ICC to induce judicial recourse against their ‘enemies’.”³¹ Furthermore, Gaeta claims that self-referrals can be used as a “political weapon” as it can be motivated primarily by a desire to expose crimes committed by opponents to divert attention away from those committed by the state.³² This emerging claim that the institution of the ICC can also be utilized by African states to exclude and subordinate domestic “others”³³ builds on the traditional TWAIL notion that legal institutions and the Global North perpetuate the “othering” of the Global South. This circles back to Mutua and Manirakiza’s claim that African states are complicit in this post-colonial system, which disadvantages the “other” within the post-colonial Third World state, such as marginalized citizens or political opposition groups, because governments in Africa are still powerful enough to utilize these power-asymmetrical institutions against their political opponents on a domestic level.³⁴

Power Imbalances Between the ICC and Africa

Having established the TWAIL self/other distinction in terms of the Global North vs Global South, this section explores how this distinction most notably emerges at the ICC with regard to Africa. The legal framework of the ICC internalizes and perpetuates the dominant Western states’ power while subordinating African states in the Global South, specifically through the UNSC and the concept of universalism. Under Articles 13(b) and 16 of the Rome Statute, the UNSC has the power to refer situations in non-member states to the ICC³⁵ as well as to defer a case for 12 months, respectively.³⁶ When combined with the veto powers of the five permanent members,³⁷ three of whom are not even mem-

bers of the Rome Statute,³⁸ this leads to the politicization of ICC case selection.³⁹ Essentially, these delegated powers enable a situation in which the UNSC can control the outcome of cases based on the economic and political interests of its permanent members, wielding unequal power over states that lack this historical dominance. Furthermore, the flawed principle of universal criminal justice at the ICC facilitates the Global North’s subordination of the Global South, as this unrealistic promise does not recognize the inherent hegemony of international law present in its normative system.⁴⁰ The “universal objectivity” proclaimed by legal institutions is, in fact, a set of norms imposed by imperial Europe for Western expansion and subordination of “other” cultures to take place.⁴¹ Over time, this Western belief manifested into normative legal systems that can be used to exert control for the interests of powerful states in the Global North, resulting in an extremely unequal outcome in terms of who is prosecuted.⁴² As a result of the exertion of power by the UNSC and the universalist legal framework, the Global South (the “others”) suffers heinous conflicts which are either ignored in favor of powerful states who benefit from these destabilizations⁴³ or symbolically targeted to direct attention away from the latter’s own conflicts.⁴⁴

Moreover, TWAIL theories of the self/other distinction manifesting into institutionalized, legal power imbalances are demonstrated by the ICC’s “African bias.” To date, ten out of fifteen of the ICC’s investigations have been in Africa.⁴⁵ When considering the previously mentioned institutional power imbalances which result from the “othering” of the Global South, this disproportionate number appears to be an active choice rather than a sim-

2021.

³¹Gaeta (n 4).

³²Westen K Shilaho, ‘The International Criminal Court and the African Union: Is the ICC a bulwark against impunity or an imperial Trojan horse?’ [2018] 18(1) AJOL 119, 136 <https://www.ajol.info/index.php/ajcr/article/view/175832> accessed 18 November 2021; Mutua & Anghie (n 1) 37.

³³Kiyani (n 2) 256; Richard Falk, ‘Foreword: Third World Approaches to International Law (TWAIL) special issue’ [2016] 37(11) TWQ 1,1 <https://doi-org.proxy.uba.uva.nl/10.1080/01436597.2016.1205443> accessed 18 November 2021.

³⁴Mutua and Anghie (n 1) 31; Attar (n 9) 173.

³⁵Manirakiza (n 9) 404.

³⁶Mutua and Anghie (n 1) 37.

³⁷Iommi (n 8) 115.

³⁸International (n 19).

³¹Menon (n 5) 260.

³²Gaeta (n 4) 951-952.

³³ibid.

³⁴Mutua and Anghie (n 1) 37; Manirakiza (n 9) 421.

³⁵Rome Statute of the International Criminal Court (entered into force 1 July 2002) 2187 UNTS 90 art 13(b).

³⁶Rome Statute (n 35) art 16.

³⁷Kamari M Clarke and Sarah-Jane Koulen, ‘The Legal Politics of the Article 16 Decision: The International Criminal Court, the UN Security Council and Ontologies of a Contemporary Compromise’ [2014] 7(3) AJLF 297, 304 <https://doi-org.proxy.uba.uva.nl/10.1163/17087384-12342049> accessed 18 November

ple coincidence.⁴⁶ Questions of selective justice by the UNSC and ICC prosecution have thus been raised by the African Union (AU),⁴⁷ which shows that the African continent has noticed this institutional bias. In his speech to the AU, Kenyan President Kenyatta proclaimed the ICC a “tool of global power politics”⁴⁸ resulting from “structural colonialism,”⁴⁹ which directly reflects TWAIL’s claims of post-colonial, institutional power imbalances. Nonetheless, it should be acknowledged that several of the ICC’s cases in Africa have been self-referred by their respective African governments.⁵⁰ Since ICC jurisdiction can only be invoked if states themselves are unwilling or unable to prosecute,⁵¹ this could indicate that the domestic systems’ lack of resources or deficient legal infrastructure could be to blame rather than active bias.⁵² Yet, when considering the claims of TWAIL that legal institutions are implicated in adopting and perpetuating Western power to subordinate the Global South, this indicates it is not the lack of resources or legal infrastructure to blame for the number of African prosecutions, but rather the replication of these power imbalanced legal system domestically.

Domestic African Power Imbalances

The TWAIL claim that the Global North uses international legal institutions to perpetuate the “othering” of the Global South for political and economic reasons has been replicated in some cases by governments in the Global South. Governments in Africa utilize biased institutions like the ICC to perpetuate domestic power imbalances to target opposition for political gains and use the system’s rules to exclude themselves when it goes against their interests.⁵³ Self-referrals are a good example of this as they are a direct communication channel between governments and the ICC that allows the former to control the narrative by only referring domestic political opponents.⁵⁴ There have been

at least five cases of African states only initiating charges against domestic opposition figures, where in these referrals the ICC Prosecutor has so far failed to investigate governments of self-referring states.⁵⁵ This method is indicative of a domestic replication of the self/other distinction, in which the government “others” domestic political opponents to shift the focus of the narrative of certain international legal violations away from itself.⁵⁶ The use of the power-asymmetrical self-referral system by African governments thus delegitimizes domestic enemies of the state. Conversely, any violence perpetrated and power exerted by the government against these groups is legitimized.⁵⁷

Ugandan President Museveni’s self-referral in 2003 of the opposition rebel group Lord’s Resistance Army (LRA)⁵⁸ is a notable example of an African government ‘repurposing’ the ICC to consolidate political power and subordinate a domestic political opponent.⁵⁹ In this case, only members of the LRA were convicted after Museveni specifically mentioned the LRA’s atrocities in his referral,⁶⁰ despite years of recorded proof of government proxies’ involvement in similar criminal activities.⁶¹ The referral happened at a time when the Ugandan government was losing the armed conflict against the LRA and was considering declaring war on Sudan to stop its military support of the latter, a decision which was unlikely to get them the victory either.⁶² The suspicious timing of the referral was therefore widely interpreted as a strategic move on the part of Uganda to simultaneously prompt an international condemnation of the LRA’s violence and restore its international reputation.⁶³

Similarly, the scope of Mali’s referral in 2012⁶⁴ was limited to crimes committed by political oppo-

⁵⁵ Menon (n 5) 261

⁵⁶ Manirakiza (n 9) 421; Shilaho (n 39) 138.

⁵⁷ Menon (n 5) 261.

⁵⁸ International Criminal Court, ‘Press Release: President of Uganda refers situation concerning the Lord’s Resistance Army (LRA) to the ICC’ (*ICC*, 29 January 2004) https://www.icc-cpi.int/pages/item.aspx?name=president+of+uganda+refers+situation+concerning+the+lord_s+resistance+army+_lra_+to+the+icc accessed 2 December 2021.

⁵⁹ Kiyani (n 2) 255.

⁶⁰ Kiyani (n 2) 255.

⁶¹ Kiyani (n 2) 255.

⁶² Menon (n 5) 261.

⁶³ *ibid.*

⁶⁴ International Criminal Court, ‘ICC Prosecutor Fatou Bensouda on the Malian State referral of the situation in Mali since January 2012’ (*ICC*, 18 July 2012) <https://www.icc-cpi.int/Pages/item.aspx?name=pr829> accessed 2 December 2021.

⁴⁶ Shilaho (n 39).

⁴⁷ Naldi and Magliveras (n 20) 425.

⁴⁸ Manirakiza (n 9) 408.

⁴⁹ *ibid.*

⁵⁰ Iommi (n 8) 107.

⁵¹ Rome Statute (n 35).

⁵² van der Wilt (n 22) 9-10; Shilaho (n 39).

⁵³ Gaeta (n 4) 952; Kiyani (n 2) 259.

⁵⁴ Manirakiza (n 9) 412.

sition armed groups like the MNLA,⁶⁵ AQIM,⁶⁶ and Ansar Dine.⁶⁷ This specification can comparably be seen as a government utilizing this imbalanced system of power to purposefully exclude its own violence in order to legitimize its position. Indeed, the Malian government has launched several military operations, including Operation Serval, which entailed the extrajudicial killing of alleged rebels,⁶⁸ but these were not highlighted in the self-referral made by the government. Overall, there is a clear trend in which African governments self-refer to the ICC to target political "others" who threaten opposition while purposefully excluding the government's alleged criminal acts. These examples demonstrate how the TWAIL concept of biased international legal institutions perpetuating power imbalances can be replicated on a domestic level by complicit, post-colonial governments' usage of these systems to target political opposition groups.

In addition, critiques by heads of government of the court when they themselves are targeted, constitutes further evidence of African governments' manipulation of power-imbalanced institutions for their own ends. Here, the vocalization of disapproval of the court when government officials are targeted stands in stark contrast to governments taking no issue with self-referring specific opposition groups to the ICC in a line of direct communication with the court. For instance, Uganda's president Museveni and Rwanda's president Kagame have voiced criticisms towards the ICC, arguing that the Court uses colonialism and imperialism to oppress and govern Africa.⁶⁹ These criticisms have also been voiced at the AU, who has implemented measures aimed to prevent African officials from being prosecuted by the ICC.⁷⁰ Although it is important to recognize that these claims hold some truth in terms of the ICC being a colonial entity that inherently and unjustly oppresses the Global South, a closer examination of the situation reveals that these concerns may be Janus-faced.⁷¹ The example of the -presently withdrawn- charges against President Kenyatta for post-election violence in Kenya from 2007-2008 further demonstrates this.⁷² After

the opening of an investigation against him via the *proprio motu* powers of the Prosecutor, Kenyatta claimed that the ICC is a tool of colonialism.⁷³ This suggests that, despite the fact that the Court is a tool that disproportionately targets Africa, criticism is only voiced when the Court initiates investigations. Thus, when the direct line of communication between African government officials and the ICC is severed, and they no longer use this power to steer the narrative of prosecution for their own purposes, the Court is denounced. This raises an interesting question about the legitimacy and value of an inter- and supranational court like this being contingent on its value to the government.

Conclusion

TWAIL theories of international legal structures and their power imbalances indicate that self-referrals to the ICC can be used to perpetuate domestic power imbalances within Africa. This study first established that the TWAIL self/other distinction in terms of Global North vs. Global South emerges between the ICC and Africa, whereby the ICC's fundamental framework of emphasizing universalism and delegating power to the UNSC inherently leads to African states' subordination. Taking this a step further, this study shows that this power arrangement is replicated domestically by African governments through the self-referral system. The analysis of the Ugandan and Malian governments' self-referrals of political opposition rebel groups, despite the criticism leveled by the same governments following the Prosecutor's external referral of President Kenyatta, reveals their desire to deliberately exclude their own committed crimes in the same conflicts. Ultimately, this suggests that African states can use the ICC self-referral system to replicate the self/other distinction domestically, in that they utilize these power imbalanced systems to maintain political power while subordinating opposition groups. This work contributes to the existing knowledge of TWAIL by providing novel insights into how international-level power arrangements can trickle down domestically, opening the

ctor v Uhuru Muigai Kenyatta, ICC-01/09-02/11' (ICC) <https://www.icc-cpi.int/kenya/kenyatta> accessed 2 December 2021.

⁷³Linda Mushoriwa, 'The Immunity Question before the International Criminal Court: Revisiting African Sovereignty and the Colonial Origins of International Law' [2021] 29 AJICL 341, 357 DOI:10.3366/ajicl.2021.0370 accessed 2 December 2021.

⁶⁵The National Movement for the Liberation of Azawad.

⁶⁶Al Qaeda in the Islamic Maghreb.

⁶⁷Menon (n 5) 261.

⁶⁸Menon (n 5) 261.

⁶⁹Manirakiza (n 9) 407.

⁷⁰ibid 393.

⁷¹ibid 409.

⁷²International Criminal Court, 'Kenyatta Case, The Prose-

door for further discussions and assessments of the harms caused by the Global North and ICC interventions to the political functioning of states in the Global South.

Social Sciences

Women as a Success Factor in Peace Negotiations

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Introduction

'If we'd had women at Camp David, we'd have an agreement'- Bill Clinton (Finkel, 2012, p. 21). Emerging consensus in the field of International Relations is that women's meaningful participation in peace talks increases the likelihood of a positive outcome (Paffenholz, 2018). While most scholars position connections between women negotiators and civil society groups as the reason for the observed positive impact (Anderson, 2016; Krause et al., 2018), very little has been said about women's negotiation style and negotiation tactics. This paper examines gender differences in negotiation techniques and their potential relevance to/for peace negotiations.

First, this paper highlights evidence of women's positive impact on peace talks. Then, existing research on gender differences in negotiation tactics and conflict resolution is analysed. Peace negotiations with women as lead negotiators or mediators from 1991 to 2014 (Paffenholz, 2018), show a correlation between the likelihood of reaching an agreement and women's influence on the negotiation process. As a case study, the 2020 Libya ceasefire and its negotiations under the leadership of Stephanie Williams will be discussed.

Lastly, evolutionary psychology and social role theory indicate possible reasons for the emergence of previously analysed gender differences. The paper concludes that while gender differences evidently influence international negotiations and can have a positive impact, future research should investigate how and why such differences occur. This paper runs the danger of being misconstrued. It is not its aim to argue that men are worse negotiators, but to highlight how including women in the negotiation process has a positive influence on peace talks. The proposed origins of gender differences should not be viewed through a reductionist lens, but rather understood as one of a multitude of sources driving the observed gender differences. The ultimate conclusion should be that including women into peace negotiations brings valuable benefits, not whether men or women are better negotiators.

Women and Peace Talks, an Overview

The interplay of Women, Peace and Security (WPS) was brought into focus with the adoption of United Nations Security Council Resolution 1325 in 2000. This important resolution shifted the focus from women as victims of armed conflict to women as agents of peace, bringing this to attention in both policymaking and academic circles. However, most debates focus on women's "presence in, rather than their actual impact on, peace processes" (Paffenholz, 2018, p. 1). Empirical data indicates that the participation of women in peace talks increases the likelihood of durable peace (Krause et al., 2018). Krause et al. (2018) found a "robust correlation between peace agreements signed by women delegates and durable peace" (p. 1). Krause's data further demonstrates that "agreements signed by women show a significantly higher number of peace agreement provisions aimed at political reform, and higher implementation rates for provisions" (Krause et al., 2018, p. 2). Yet, women remain significantly underrepresented in peace negotiations.

Gaining a seat at the table, whether in international diplomacy or the corporate world, is still a challenge for women. Be it the glass ceiling or the labyrinth to promotion, women are disproportionately affected by negative gender stereotypes, social roles, 'old boy networks,' and other discriminatory practices (Eagly & Karau, 2002). The imagery that accompanies gender stereotypes for women centres around notions of "caring, nurturing and friendliness" (Eagly & Karau, 2002). These stereotypes, among others, cause women to pursue different tactics in negotiating than men (Eagly & Karau, 2002). However, while stereotypes often hinder women's participation, they might well be the source of women's success in peace negotiations as they inform the tactics women use to negotiate and resolve conflict.

Women's Unique Negotiation Strengths

Common wisdom has it that men are the better negotiators (Kray & Thompson, 2004). When measuring pay-rise success and salary negotiation in economic terms, this notion may seem true (Mazei

et al., 2015). However, emerging research indicates that methodological problems may drive the existing/ current paradigm that labels women as the weaker negotiators (Mazei et al., 2015). Mazei et al.'s (2015) meta-analysis reveals that certain scenarios exist in which women perform equal to men. These scenarios include negotiating on behalf of another person and having prior experience with negotiating (Mazei et al., 2015). Women outperform men in economic negotiation success when "stereotypically feminine traits (e.g., good listening skills) are linked to negotiation success and when stereotypically masculine traits (e.g., assertiveness) are linked to poor negotiation outcomes" (Kray et al., 2002, p. 3), i.e. when understanding and listening are especially important in the negotiation paradigm or experimental setting women outperform men. However, when the setup follows a zero-sum paradigm, then women will underperform. This evidence suggests that differences in negotiation are context-dependent (Kray & Kennedy, 2017), and that women and men may possess different strengths when negotiating. Kray and Kennedy (2017) propose that it may be possible to link traits generally associated with women with success in negotiating rather than failure. Many traits linked to successful negotiation (e.g., listening skills, expressiveness, and verbal ability,) are in fact traditionally associated with femininity (Kray et al., 2002).

One of the gender differences that increases women's success in negotiation is the use of collaborative, rather than forceful, conflict resolution styles. As Holt and DeVore (2005) show, women are more likely to utilise a collaborative conflict resolution style, which is considered more productive in the conflict resolution process (Holt & DeVore, 2005). Men are more likely to avoid conflict or use a forceful conflict resolution style (Holt & DeVore, 2005). Both these styles are thought of as more disruptive in the conflict resolution process, therefore suggesting that women may possess more effective conflict resolution attributes than their male counterparts (Holt & DeVore, 2005). This is in line with Kray and Kennedy's (2017) research which highlights that women score higher on measures of cooperativeness due to a higher concern for others (Kray & Kennedy, 2017). This is due to a process of conceptualisation of the self in regard to others, a trait women display significantly more often than men (Cross et al., 2000). In essence, "women

feel fundamentally connected to, not independent from, others" (Kray & Kennedy, 2017, p. 2). This difference holds up even in business contexts, in which women recognise themselves more often than men as being altruistic and interested in others (Kray & Thompson, 2004). Gelfand et al. (2006) demonstrate that a strong sense of connection to others alters negotiators' cognition, emotion, and motivation towards a more relational view of conflict. They propose that these differences prompt negotiators to "develop and preserve relationships and to help others achieve their goals" (Gelfand, 2006, p. 3). Research shows that women are more cooperative than men in negotiations (Holt & DeVore, 2005). Cooperativeness, defined as having a high level of concern for the other party's outcomes (Pruitt, 1983; Walters et al., 1998), results in negotiation outcomes that benefit both parties rather than one and that produce more easily accepted solutions. This advantage is likely to transform into the area of peace negotiations, as peace agreements that serve both sides are more likely to be signed - and to last.

Relative to men, women are more likely to develop reputations as cooperative negotiators and less likely to develop reputations as selfish negotiators (Anderson & Shirako, 2008). A reputation as cooperative and helpful could positively impact peace negotiations which are long-term processes, often stretching over multiple years, by increasing the likelihood of trust and sharing of information. Moreover, cooperation can be of advantage in interdependent context negotiations (Carnevale & Pruitt, 1992; Pruitt & Carnevale, 1993). These are defined as situations in which two parties need each other to achieve their desired objectives, something prevalent in peace negotiations. According to Pruitt's model, collaborative strategies (high other-concern and high self-concern, i.e., both cooperation and assertiveness) create value by increasing communication about underlying interests, enabling the discovery of creative solutions that satisfy both parties' interests efficiently (Pruitt & Carnevale, 1993).

Besides being more cooperative, women also increase the collective intelligence of a group; that is, the group's ability to perform highly in a wide variety of tasks (Woolley et al., 2010). Women enhance the collective intelligence of a group by encouraging turn-taking and social sensitivity more so than men (Woolley et al., 2010). This effect could

prove vital for peace negotiations, as agreements are often a group process and seldom an individual's merit.

Governments of states expect a certain moral code of conduct both during and after international negotiations. Besides having explicit negotiation skills, women improve ethical behaviour in group negotiations (Kennedy & Kray, 2013). Gender differences in ethics constantly favour women as more ethical (Kennedy & Kray, 2013). Sacrificing ethical values for money or social status causes women greater moral reservations and moral outrage than men (Kennedy & Kray, 2013). Furthermore, cross-culturally, women place more concern on harm and fairness, essential moral foundations (Graham et al., 2009). These ethical variations are imbued in/on the negotiation arena/stage. Women rate ethically dubious negotiation tactics as less appropriate than men at a statistical significance level of 0.05 (Robinson et al., 2000). These tactics include deceiving a counterpart to achieve a better negotiation outcome, making false promises, and attacking an opponent's network. While it may seem that this would make women less competitive negotiators than men, no gender differences appear for traditional competitive bargaining (Robinson et al., 2000), thus ethical disagreements do not reflect a tendency for women to negotiate less competitively than men. Relative to women, men have a higher probability of reducing their ethical norms to achieve better economic outcomes (Kray & Haselhuhn, 2012). As peace and conflict negotiations aim to increase long-term stability and avoid conflict, they might be negatively affected by a negotiator's interest for short-term success (Krause et al., 2018; Paffenholz, 2018). Evidence for this could be seen in women's higher success rates in conflict negotiation (Krause et al. 2018; Paffenholz 2018). Furthermore, long-term relations between countries could be seriously harmed by negotiators' unethical tactics, since rebuilding trust after deception is not always possible. Increasing the presence of women in peace negotiations could therefore directly improve the negotiation tactics and function as a safeguard against unethical behaviour.

Furthermore, women's high ethical standards enable higher levels of relational capital in negotiation processes (Carnevale & Pruitt, 1992; Holt & DeVore, 2005; Krause et al., 2018). Relational capital refers to "all relationships, such as market

relationships, power relationships and cooperation, that are established between firms, institutions and people, which stem from a strong sense of belonging and a highly developed capacity of cooperation typical of culturally similar people and institutions" (Soanes et al., 2006). Increased relational capital can improve trust between negotiating parties and can therefore function as a crucial element for peace negotiations. Unethical behaviour reduces relational capital and causes deceptive negotiators to rate their counterparts less trustworthy than honest negotiators (Van Zant et al., 2015). This also holds true among negotiators who did not realise they had been deceived (Van Zant et al., 2015), ultimately showing how unethical behaviour reduces trusts on all sides. Trust increases the likelihood of both parties pursuing a problem-solving approach or collaborative negotiation style (Carnevale & Pruitt, 1992), which in turn increases the likelihood of a successful negotiation outcome (Carnevale Pruitt, 1992; Pruitt & Carnevale, 1993).

Empirical Data on Women and Peace Negotiations

The above-mentioned skills should result in at least equal, if not increased, success of women at the negotiation table. Aggestam and Svensson (2017) identified 36 cases between 1991 and 2014 (see Table 1) in which women were the head mediator of international peace negotiations. Of these 36 cases, agreements (ceasefire, partial or comprehensive agreement) were reached in 61% of instances (22) and no deal was reached in 39% of instances (14) (Aggestam & Svensson, 2017). Therefore, a slight majority of outcomes resulted in agreements. This contrasts with the standard global pattern in which most mediation interventions (>50%) end with failure (Bercovitch & Jackson, 2009). Nevertheless, this relationship needs further exploration as mediation is a profoundly unpredictable practice depending on a broad set of factors, such as the parties' willingness to negotiate an arrangement to end the conflict (Zartman, 1995).

Since UN Council Resolution 1325, countries have been aiming at increasing women's participation in peace processes. However, mere increase in numbers might not result in the desired effect. Paffenholz et al. (2016) found that "stronger in-

fluence of women on peace processes is positively correlated with more agreements reached and implemented” (Paffenholz et al., 2016, p. 22). However, simple quantification of women’s representation may lead to wrong conclusions, as the level of influence and power are crucial to determine success and impact (Paffenholz et al., 2016). There exists no correlation between greater representation of women and influence over the negotiation process. For example, the number of women ‘observers’ to peace negotiations have recently been rising, but research indicates that they are rarely able to influence the process in any significant way (Paffenholz, 2018). Consequently, the focus should not only be on the mere presence of women at the negotiation table but on the level of influence they have in negotiation processes. To put it simply, it is not about ‘counting women’ but about ‘making women count’ (Paffenholz et al., 2016).

The level of influence, which should therefore be of particular interest, can be measured in the following mode: the extent to which women can influence the beginning of peace negotiations, arrange the negotiation agenda, include gender provisions, and push for arrangements to be signed (Paffenholz et al., 2016).

As such, a link seems to exist between the presence of women as mediators and the probability that a peace agreement will be achieved. Especially in cases where women have been granted strong influence over the negotiation process, gender provisions are more likely to be incorporated (Aggestam & Towns, 2017). However, even though women might be well-represented at the negotiation table in terms of numbers, this does not automatically result in any significant impact, as actual influence might be missing. A strong impact of women on peace processes correlates with more agreements being reached and implemented (Aggestam & Towns, 2017). Nonetheless, researchers agree that further studies are needed to probe and corroborate these findings (Aggestam & Towns, 2017).

Empirical data, therefore, suggests that when women have a strong influence on peace negotiations, these negotiations are more likely to be fruitful (Paffenholz et al., 2016). Why is it that currently, only 8% of peace negotiations are led by women? What causes diplomatic negotiation to still be a male-dominated domain? General sexism women face (such as being perceived as less competent

Table 8.1 Women in peace mediation

<i>Conflict</i>	<i>Unit</i>	<i>Mediator</i>	<i>Year</i>
Angola	UN	Margaret Anstec	1992–1993
Azerbaijan	OSCE	Terhi Hakala	1995–1996
Bosnia-Hercegovina	UK	Pauline Neville-Jones	1995
Burundi	UN	Carolyn McAskie	1999–2000
Central African Republic	UN	Margaret Vogt	2012–2013
Colombia	Norway	Rita Sandberg	2014
Cyprus	UN	Ann Hercus	1998–1999
Cyprus	UN	Lisa Buttenheim	2013
Democratic Republic of Congo	UN	Mary Robinson	2013–2014
Georgia	EU	Heidi Tagliavini	2008–2009
Democratic Republic of Congo	NGO	Liberata Mulamula	2008
India-Pakistan	US	Hillary Clinton	2009
Guinea-Bissau	Sweden	Ulla Andren	1998–1999
Israel	Norway	Mona Juul	1992–1993
Israel	US	Madeleine Albright	1997–1999
Israel	US	Hilary Clinton	2009–2013
Israel	EU	Catherine Ashton	2010–2014
Israel	EU	Federica Mogherini	2014
Israel	US	Condoleezza Rice	2006
Israel	US	Condoleezza Rice	2005
Israel	EU	Helga Schmid	2011–2012
Kenya	African Union	Graça Machel	2008
Liberia	AU	Adwoa Coleman	2003
Liberia	NGO	Theresa Leigh Sherman	2003
Macedonia (FYROM)	EU	Anna Lindh	2001
Papua New Guinea	NGO	Ruby Mirinka	2001
Russia	EU	Tarja Halonen	1999
Philippines	Norway	Elisabeth Slåttnum	2014
Serbia-Kosovo	EU	Catherine Ashton	2011–2013
Sierra Leone	Organisation of African Union (AU)	Adwoa Coleman	1999
Somalia	Sweden	Marika Fahlén	2007–2008
Somalia	NGO	Asha Hagi Elmi	2000; 2002–2004
South Sudan-Sudan	EU	Rosalind Marsden	2012
Sri Lanka	NGO		2002
Sri Lanka	Japan	Yoriko Kawaguchi	2003
Sri Lanka	Norway	Kjersti Tromsdal	2000–2005
Sri Lanka	India	Indira Gandhi	1983–1984

(continued)

Table 8.1 (continued)

<i>Conflict</i>	<i>Unit</i>	<i>Mediator</i>	<i>Year</i>
Sudan	NGO		2006
South Sudan-Sudan	NGO	Mary Robinson	2012
Sudan	Norway	Hilde F. Johnson	2001–2005
Sudan	EU	Rosalind Marsden	2010–2013
Uganda	EU	Anna Sundström	2006–2008
Uganda	Norway	Heidi Johansen	2006–2008
Ukraine	EU	Catherine Ashton	2014
Ukraine	EU	Federica Mogherini	2014
Uganda (LRA)	Government of Uganda	Betty Bigombe	1992–1994; 2004–2006
Ukraine	OSCE	Heidi Tagliavini	2014
United Kingdom-Argentina	US	Hillary Clinton	2010
United Kingdom	Political party	Monica McWilliams	1998
United Kingdom	Political party	Liz O'Donnell	1998

Figure 1: Table 1. Women in peace mediation (Aggestam & Towns, 2017, p. 165)

by default or being automatically assumed to have less time or focus as they are perceived as the primary caregivers to children), are some of the many stereotypes that women suffer the consequences and that devalue feminine strength.

The reasoning that maintains a male-centric perspective in diplomatic negotiation is that assumed feminine traits like agreeableness and passivity are believed to cause poor negotiation performance even though, in reality, various feminine qualities, such as empathy, are essential for negotiation successes (Kray & Thompson, 2004). Women often try to mitigate these stereotype threats by either adopting 'male' behaviour to be taken more seriously or by focusing on negotiating 'soft issues' and obtaining legitimacy through adopting a maternal role (Eagly & Karau, 2002). Often, however, women will be ignored independently of the chosen strategy. Ellerby (2016) states that "a seat at the table is not enough" (p. 8) to overturn the hegemonic masculine culture of diplomatic negotiators, which devalues and excludes women. It is the very narrative of women as bad negotiators that needs to change (Aggestam & Towns, 2017). This narrative, in turn, influences many research paradigms on gender differences in negotiation, further complicating the identification of positive effects (Kray & Kennedy 2017).

Case Study: Libya Peace Agreement 2020

In early 2011, among a wave of public protest in countries throughout the Middle East and North Africa, an uprising against Muammar Gaddafi's forty-year rule prompted an intrastate conflict and international military intervention in Libya. In 2014, attempts to build a democratic state after Gaddafi's death dissolved into a civil war between rival governments. Armed groups, including extremist groups such as ISIS, emerged. Over the last few years, foreign powers frequently participated in Libyan peace negotiations to protect their own economic and strategic interests (Oyeniya, 2019). The two opposing forces were the Government of National Accord (GNA) and the Libyan National Army (LNA). The former had support from the UN and some western countries, however, its primary allies were Turkey, Qatar, and Italy. The LNA received support from Russia, the United Arab Emirates, Egypt, Saudi Arabia, and, to a lesser extent, Jordan and France. Despite multiple high-profile peace talks with the three-track intra-Libyan negotiations, an agreement on a permanent ceasefire was not reached until October 23, 2020.

The appointment of Stephanie Williams as deputy head of UNSMIL for political affairs and her public involvement in the 3-point peace plan of UNSMIL and the intra-Libyan political negotiations seems to confirm the above-mentioned theories. Williams was in conversation with Khalid al-Mishri, head of the High Council of State, as well as other important stakeholders of the Libyan conflict. In late 2020, Williams was the Acting Special Representative of the Secretary General of UNSMIL and oversaw the preservation of the economic, political, and military tracks of intra-Libyan peace negotiations. Williams' mediation of the peace talks included wide consultations, discussions with Libyan mayors from the South, East and West of Libya as part of the LPDF process, and the first meeting between the stakeholders in October 2020.

From this, it becomes imminent that Williams did not only hold a place at the table but also exercised a great deal of influence, hereby supporting the previously-developed theory that the strong influence of women on peace talks increases the probability of successful peace agreements. It also aligns with Paffenholz's dichotomy of 'counting women' and 'making women count,' insofar as Williams held more than a seat at the table and displayed real influence on the process. While this does not prove a theory as it is only one example, this outcome aligns with the correlation observed above in Aggestam & Svensson's (2017) statistical analysis.

Unfortunately, due to the secretive nature of peace negotiations, no transcripts or minutes are available, which makes evaluating differences between men's and women's communication styles impossible. Therefore, the hypothesis that women negotiate differently from men will be assessed relying on experiments from psychological research.

It would be limiting to use a single woman's presence in one peace talk to make overarching broad claims about women in peace negotiations, since studying a single woman's influence would be reductive. Due to the multitude of factors that lead a peace agreement to either succeed or fail, it would be simplistic to argue that women's particular negotiation style is the only reason for success, or to argue that the correlation between women's involvement and negotiation success necessarily implies causation between them. However, as shown above through empirical data, a strong influence of women on peace talks increases the proba-

bility of agreements being reached. Better methodological processes and better access to empirical data are needed in order to investigate the cause for this statistical trend further.

Origin of Differences between Women's and Men's Negotiation Tactics

Numerous cultural and biological theories attempt to explain why men's and women's negotiation techniques differ. Anne Campbell (2013) suggested that biological differences have been 'enhanced' by cultural interpretations which shame certain behaviours when displayed by women. For instance, the stigmatisation of women's aggression "causes women to offer exculpatory (rather than justificatory) accounts of their own aggression" (Campbell, 2013, p. 1). At the negotiation table, this process is known as "backlash theory," in which eagerly asking for a pay-rise or promotion is viewed negatively when requested by a woman and neutral when requested by a man (Kray et al., 2002).

Role theory (Eagly & Karau, 2002) suggests that gender differences in negotiation behaviours can partly be explained by biases, stereotypes, and discrimination (Kray & Thompson, 2004). Gender stereotypes mainly associate women with emotionality, weakness, and an accommodating character, while men are linked with rationality, strength, and assertiveness (Spence et al., 1974). These preconceptions can result in a stereotype threat as women are punished for breaking with the associated assumptions of accommodation and friendliness, resulting in women either avoiding being assertive or being perceived negatively if they exhibit assertive behaviour (Pardal et al., 2020). Research shows that the simple awareness of negative stereotypes can influence actual performance (Pardal 2020). Pardal (2020) showed that stereotype threat influences women's performance in mixed-gender negotiations. Furthermore, negotiation performance was found to be impacted by women's fear of backlash for violating gender stereotypes through acting assertively (Amanatullah & Morris, 2010).

However, when women negotiate on behalf of a third party, the difference disappears as community interest and empathy align with stereotypes about women (Kray et al., 2002). This erasure of

difference depending on context suggests that it is the fear of backlash, and not a lower innate ability to negotiate, that drives performance difference (Pardal et al., 2020). Therefore, gender differences in negotiation likely stem, at least partly, from sexist bias, negative stereotypes, and discriminative reactions.

Nevertheless, biological roots might lie underneath culturally 'enhanced' stereotypes. Research shows that women's threshold of fear of physical harm is lower than that of men's (Campbell, 2013). This is observable in women's lower incarceration rates for violent crimes, fewer hospitalizations, and lower rates of perpetrating crimes. This does not mean that women are less aggressive or less competitive than men but rather that aggression and competition merely take different forms. As Archer (2009) points out, women's aggression is expressed in diverse ways and tends to combine varying tactics, such as using alliance and targeted gossip. In most cases, women rely on comparatively low-risk competitive strategies, arguably due to evolutionary constraints of offspring production and care (Campbell, 2013). In social species, such as humans, women tend to resolve conflict without relying on direct aggression (Campbell, 2013). This is achieved through dominance relationships, threats of punishment, as well as coalitions and alliances. The latter is often favoured by women, arguably due to the reduced risk of retaliation and increased cost of physical danger. Campbell (2013) suggests that this has evolutionary benefits and emerged as an adaptation. Placing a high value on protecting their own lives enhanced women's reproductive success because infant survival depended more upon maternal than paternal care and defence (Campbell, 2013). Due to this, a mechanism evolved in which the cost of risk-taking is weighted more heavily in situations that pose a direct threat of bodily injury, ultimately resulting in women being more prone to using collaborating and coalitional solutions, rather than direct threats (Campbell, 2013). As Holt and DeVore's (2005) research shows:

Compromising is endorsed more frequently by females; females are more likely to endorse the use of compromising than males; males are more likely to report using forcing than females; and with regard to organisational role, males

are more likely than females to choose a forcing style with their superiors (p. 3).

Most likely, cultural and biological roots drive gender stereotypes, as wide areas of research indicate that nature and nurture interplay (Caspi & Moffitt, 2006; Duncan & Keller, 2011; Kendler & Karkowski-Shuman, 1997). It is important to note that both social role theory and evolutionary psychology rely on cis-gendered assumptions and take the 'average' men and women into account, therefore, this theory can only be applied to general trends and groups, but not the individual.

Therefore, social role theory and evolutionary theory provide insightful explanations to the question as to why these gender differences come into existence.

Conclusion

This paper developed a theory about women's influence on peace talks and the role played by their different negotiation style. The author argues that women's different perspectives on conflict and their more collaborative conflict resolution style make reaching an agreement more likely. This theory adds to existing scholarly thought, which tries to explain why we see a positive correlation between the reaching of agreements and women's participation in international negotiations (Cassidy, 2017). Furthermore, evolutionary and social explanations of gender differences in negotiation styles were explored. Women seem to increase the likelihood of a peace agreement being reached through their closer connection to the community and civil society organisations, but possibly also through different negotiation styles and diverse conflict resolution tactics. However, these benefits only activate when women are in influential positions: the mere presence of 'women observers' in peace negotiations does not correlate with increased likelihood of peace negotiations success (Paffenholz, 2018).

The differing negotiation styles of women were analysed with the help of existing research in the field of business studies. The origin of these differences was hypothesised to lie in cultural pressures, negative stereotypes, stereotype threat, gender performative policing as well as evolutionary adaptations making women more prone to collaborative conflict resolution techniques. Overall, it be-

comes evident that women have a positive influence on the likelihood and durability of peace. In contrast to current scholarly thought, this paper identified differences in negotiation style as one of the possible reasons as to why women's direct participation in peace talks increases the likelihood of peace. It is therefore not only women's closer contact to civil society groups as other academics suggest, but also their different approach to conflict resolution that has a positive effect in international negotiations. Identifying the potential pathways through which women positively affect peace negotiations has significance not only for women negotiators themselves but also for policymakers. Better understanding the pathways through which women help further peace allows for learning and applying these tactics to international negotiations in general, positively affecting peace. By highlighting the differences, women can better understand their challenges and advantages in negotiation.

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Humanities

An Archive of Femicides in Cyberspace

The Monument Counter as a Counter-Memorial

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Monuments are common ways to commemorate an ideology, event, notion, or figure, which serves as an honoring mechanism by glorifying the entity in question. Whether monuments effectively preserve the memory or remind the community of the event in question is contested, as sometimes the memorials lose their meaning over time or are labeled as controversial due to the ever-changing dynamics of society. This paper will talk about monuments as ineffective tools of commemoration and suggest that counter-memorials challenge the stereotypical practices of monumentality by confronting the conventions of the power hierarchy established by monuments. Specifically, this paper will discuss an online counter-memorial dedicated to Turkish women who have lost their lives from 2008 to 2022 due to male violence. The counter-memorial called *The Monument Counter* (2013) suggests a way to construct monuments of shame and disgust without the glorification of femicide, therefore drawing attention to the subject by acknowledging the problematic nature of the government and showcasing the trauma that millions of women every day have experienced. Taking the relationship between the preservation of memory and counter-memorial into account, this paper will argue that *The Monument Counter* defies the conventional understanding of memorials by being transient and intrusive in the space that it was erected, as well as demonstrating interactivity to raise awareness about femicides.

In order to understand *The Monument Counter* as a counter-memorial, one first has to look at the relevant theoretical framework in light of the act of remembering. Osborne defines counter-memorial as “embody[ing] qualities quite opposite from conventional monuments” (167) in the sense that they are “fleeting and transitory, problematize [the subject]; and [...] actively invite and require viewer participation and engagement” (Osborne 167). According to Krzyżanowska, the unconventional properties of counter-memorials allow the community to “search[...] for new ways and patterns of expression [...] different than in monumental commemorations [and] question[...] traditional limitations of monumental remembrance” (470). It is essential to critically analyze and occasionally oppose traditional monumental practices because of their relation to collective memory and how they establish spatial hegemony. The controversial relationship between spatial hegemony and traditional

memorials is where the foundation of a monument relies on “a dominant group impos[ing] its vision of reality on the way others see the world” (Raymond 178). Therefore, the memorials promote the government’s narrative within their erected space, dominating and controlling the space with an ideology oriented toward excluding the people’s collective memory. Not only do memorials serve to encourage the figure in question to be glorified and emphasized in an urban landscape, but they also command how the community can remember a specific entity. However, it is vital to question whose history and reality are represented in public monuments since the representation is usually constructed by people in power, exercising their version of history. This constructed version of reality determines the power hierarchy in a public space and does not allow the minority population a voice in remembering or forgetting their historical discourse.

Another reason that traditional monuments are not always the most effective ways to represent a collective memory is that the “engagement with memory lies in its perpetual irresolution” (Young 270). Conventional monuments do not allow for discussion due to their property of being state-sponsored. In other words, monuments are represented as established entities engaged in a paradoxical relationship, which Osborne describes as: “in the process of materializing a [...] memory in a physical object, monuments simultaneously render that memory vulnerable to [forgetting]” (167). The phenomenon of forgetting occurs when the monument is integrated into the public space, in which the community gets used to the commemoration to the point where discourse around the monument is not recognized, dissolving with time. Therefore, it can be said that the monuments have a time limit after which they lose their meaning; memories do not attach to memorials as expected since this act of remembrance depends on the interaction of the audience, in which the viewer’s meaningful engagement with the memorial produces a liberal territory for everyone to discover their personal interpretation. In other words, although permanence is a feature of a traditional monument, longevity does not necessarily elevate the visibility or preservation of memory because the limited time span of the memorial leads to its engraving on the space, and thus, the object does not draw as much attention as it used to. Therefore, counter-memorials are ro-

bust carriers of memory in that they recognize that memory exists in ways that create a debate and discussion around the subject, avoiding burdening all memory into one statue.

Before talking about the counter-memorial, *The Monument Counter*, it is essential to investigate some of the statues initiated in Turkey to commemorate women who have been killed due to domestic violence. One of the famous monuments that have been erected as a part of the Stone Statue Symposium in 2012 was called the *Three Female Figures* (see fig. 1). It was placed in the bustling city square of Ordu, a city located in northern Turkey. The statue consisted of three women sitting on a bench and chatting. The state-sponsored monument was inspired by the famous song of Ordu, with the lyrics, “Tabya başında üç kız yan yana”, which translates as three girls next to each other in Tabya, a busy area in the city. The monument was erected as an attribute to Ordu’s famous folk song, however, it still showcased three women spending time together, signifying how women have rights and freedom of existence independent of men, freely convening with their friends, and being a part of society. This meaning was also practiced with the explanation placed next to the monument, where the plaque stated that this monument represented Ordu’s egalitarian gender politics that was the topic of famous songs. However, after two months, this monument was placed in a low trafficked garden of a church, where fewer visitors are able to interpret this monument in a way that empowers women. It seems as if the understanding of Ordu as an inclusive city is disguised by the location of the monument, which causes the statue to have little to no effect. Despite this intentional placement and replacement of locations creating “a visible example of the dense and multi-layered symbolic geography” (Eröss 237), the citizens still had adverse reactions (see fig. 2) to the statue because it would be considered inappropriate for three women to sit together without the presence of men (“Ordu’da Kadın Heykeli’nin Başı Koparılarak Tahrip Edildi”). After a series of discussions, the government removed the statue, explaining that it did not conform to Turkey’s moral values or societal gender roles (“Ordu’da Kadın Heykeli’nin Başı Koparılarak Tahrip Edildi”). The removal of this statue is highly problematic because it represents the victory of the authorities to the point where it diminishes gender equality, thereby celebrating misogynistic ide-

als. The monument was significant to the political climate because it represented women as equal members of society without being subjected to inequality; however, the fact that it was first replaced then removed proves that the monument failed to sustain “[...] the political status quo or improve visibility of claims of minority groups” (Krzyzanowska 468).



Fig. 1. *Three Female Statues* in Ordu, Turkey from Hürriyet; “Daily News”; hurriyetdailynews.com, 07 June 2017, <https://www.hurriyetdailynews.com/statue-of-three-female-figures-attacked-for-third-time-in-turkeys-ordu-114043>.

After acknowledging that the traditional monument has failed to gain recognition and empower women with the lack of support from the state, the proposals of designing counter-memorials were made to project the emotions and thoughts of women, recognizing that memory exists outside of public commemorative art of state-sponsored monuments. Therefore, a digital monument was designed by Zeren Gökten (see fig. 3), which presents the names of women who have been killed each year by male violence in Turkey and how the murders appeared on the news. A number written with white block letters comes up when one logs onto the website, indicating how many women have been subjected to violence that year. Underneath, there is a list of names of the women, and visitors can click them to see how they were killed and how the media has portrayed their murders. Initially, this was not a public monument; Gökten placed it in a museum setting, where a QR code was discreetly implemented next to other exhibits in order to allow “visitors [to] enter from any direction, even incidentally and inattentively” (Stevens et al. 727). This exhibition object was then turned into a monu-

ment when visitors shared the website on their social media; it gained public attention with its refusal to be a top-down, state-sponsored political memorial. Instead, it created an intimate environment where one is confronted with extensive/significant violence directed towards women.



Fig. 2. *Three Female Statues* in Ordu, Turkey after destruction from Bianet; bianet.org, 07 June 2017, <https://m.bianet.org/bianet/sanat/187209-ordu-d-a-3-kadin-heykeli--ucuncu-kez-saldiriya-ugradi>.

The elements worth discussing are those that make *The Monument Counter* a counter-monument, namely its intrusiveness, space, and temporality. As was stated before, counter-monuments are classified as revealing contested memory, in this case, by acknowledging the past and admitting that state policy was inadequate to protect women. This contrasts against the traditional monuments, which “rarely.. [allows for] a nation to call on itself to remember the victims of crimes it has perpetrated” (Young 270). In the case of *The Monument Counter*, visitors are forced to confront the digital memorial, as they are unknowingly directed to the website, which allows one to confront the insidious and upsetting reality of femicide, to the point where the visitor cannot avoid the self-reflection and the interaction with their “I” (Shelf 152). By drawing on the concept of self-reflection, *The Monument Counter* has been able to show that digital counter memorials are successful in taking “alternative political action” (Shelf 158). The encouraging of viewers to question their own participation in the discourse of femicides, critiques and complicates the perception around femicides by inviting the viewer to turn inwards and have a dialogue with themselves on how to subvert the master narrative. This property of being exposed to the counter-memorial is different from the traditional

monument of *Three Female Figures*, where it alienated itself “from the dominant way of remembering, but not necessarily question[ed] the narrative of the event or the person commemorated” (Eröss 240).



Fig. 3. *The Monument Counter* from Zerrin Gök-tan; AnitSayac.com, 2013, <https://anitsayac.com/?year=2021>.

The space that *The Monument Counter* occupies is digital, which raises questions about its efficacy in representing the political corruption that led to the femicides. It is essential to acknowledge that “the digital nature of the monument [provides] unlimited possibilities of extending the monument by adding information” (Faro 169). The virtual placement of the monument humanizes women who have been victimized by revealing their names, the weapons they have been killed with, and how the femicides were represented in mainstream partisan media outlets. Unlike a physical monument, women are not just represented as a number in the virtual placement of the counter-memorial; *The Monument Counter* constructs a humanizing architecture where viewers can collect information about the brutal nature of femicides as well as gather personal data on women who have once been part of the Turkish society. Furthermore, this archival project in cyberspace encourages the participants’ interaction by hyperlinking the list of women, and participants interact with the monument to access information about how they were killed. This interaction breaks down the power hierarchy between the individual and the monument, as the longevity of the counter-monument form depends on the audience’s participation. Once the audience chooses to participate by clicking the hyperlinks, the monument functions democratically by dismantling the power hegemony it encapsulated beforehand, where the audience adopts the role of “co-celebrants” (Foot et al. 89). In *The Mon-*

ument Counter, there is a section specifically designed for inquiries, in which the viewer can add names of women who have not already been listed on the website. The liberating practice of interaction encourages individuals to conduct further research or even ensure accurate representation of victimized females by being a part of collective memory. Another interaction the digital monument provides can be categorized under research purposes, in which a diverse scope of individuals wanting to research femicides can “collect, disperse, and study information” (Faro 15) to understand how the femicide was showcased in media outlets. Therefore, as Foot et al. further pursue, web-based memorializing is an accessible site due to its enabling of public participation, in contrast to traditional monuments in which “spontaneous personal and public expressions of grief and loss” (77) cannot be granted due to the inaccessibility of geographical land.

Another element that distinguishes *The Monument Counter* is its temporality, in which the digital monument has the ability to update itself when femicides occur. According to Young, counter-monuments aim “not to remain fixed but change, not to be everlasting but not to disappear” (277) as well as to “challenge the idea of monumentality and its implied corollary, permanence” (278). Since *The Monument Counter* is in the digital realm, it has room for flexibility, updates, and adjustments to the point where the monument will destroy itself. According to Gökten, the website is programmed to eradicate itself when femicides end, meaning that the women who have been subjected to death by male violence become zero for a period of one year. This self-destroying digital sculpture will also make a self-reflexive statement by vanishing, meaning that the public will see the developments of how a corrupt political system has evolved to protect women. Furthermore, since the concept of monuments is “highly selective and built on the principle of exclusion” (Assman 337), it is an important initiative to make counter-monuments inclusive and appealing to various audiences, through which the constant modification of memory can be implemented by interactivity, where the collective consciousness on femicides is refreshed and activated when “individuals [use] all five senses and let those experiences help them to find their own interpretations” (Erőss 239). The preservation of the dynamic memory in *The Counter Monument* is

an excellent example in which the temporality of the digital site refuses to vanish without action required from the community; the monument is not finished unless the femicides stop, which according to Young, “the finished monument [...] completes memory itself, puts a cap on memory-work, and draws a bottom line underneath an era that must always haunt [the community]” (371).

In this essay, the counter-memorials as an alternative technique of commemorating were discussed and juxtaposed with traditional monuments. In light of memory studies, the case study of *The Counter Monument* has been analyzed, showing close attention to its properties of intrusiveness, space, interactivity, and temporality. These qualities have been compared and contrasted to the conventional monument of Three Female Figures, which was relocated to an unpopular setting and ended up being removed due to Turkey’s “moral values”, failing to embody an empowering commemoration of female injustice. However, *The Monument Counter*, on the other hand, has raised awareness of the recurring pattern of femicides and how the government subordinates women by failing to protect the community at all times, causing the femicides to be politically charged and attributed to the mismanagement of Turkey’s legislations. Within the cyberspace it occupies, *The Monument Counter* transforms into a socio-political commentary, raising awareness of femicides by separating the idea of a traditional monument from powerful authorities and constructing a “monument against itself: against the traditionally didactic function of monuments, against their tendency to displace the past they would have us contemplate—and finally, against the authoritarian propensity in monumental spaces that reduces viewers to passive spectators” (Young 373).

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Humanities

Visible Invisibilization

How and Why have Refurbishments and Street Surveillance Affected the Homeless' Relationship to Public Space?

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Abstract

Public space has historically been considered as inherently social. Through ideological changes brought about by neoliberalism, the implications of public space have been transformed. The intensification of fear has led to a rise in surveillance strategies implemented to restrict and regulate public space for those seen as a threat to the social order of society. The homeless community is commonly seen as a disorder in the system that should be removed by regimes of spatial control (Smith, 1992). Amsterdam's efforts of urban revitalization have consequently led to the physical inaccessibility of many public spaces that fulfill the basic needs of homeless individuals. Hostile furniture in the form of street furniture, also present in the center of Amsterdam, deters those who are dependent on them. Amsterdam has taken efforts to eliminate homelessness and maximize space for profit and thus, the museumification of the city inevitably creates exclusionary spaces. This paper will explain the transformation of public space and discuss how efforts are mobilized to discipline public space, before moving towards a discussion of why the experience of homelessness is seen as a disorder. Ultimately, this paper will investigate these strategies of safety, cleanliness, beauty, and accessibility through the specific case study of Weesperplein, Amsterdam.

Keywords and phrases: *Public Space, Homelessness, Accessibility, Hostile Architecture, Neoliberalism*

Introduction

Spatial power, specifically spatial control, is mobilized as a tool of disempowerment targeting communities, especially the houseless community, in order to keep these communities invisible and excluded from the public space. This is of great relevance as the individual engages with space, both material and social, on a daily basis. In many ways, public space is constructed by underlying power relations that are yet to be uncovered. Through the rise of urbanity, institutions and power structures seem to control space in order to exert power over certain communities (Doherty et al. 2008). The privatization of 'public space' has inevitably led to a physical inaccessibility of certain demographics (Sahlin, 2006). Through this only certain demographics are included in the urban sphere. Many scholars have contextualized the mechanisms and techniques utilized to limit accessibility for homeless communities as homeless people frequently remain subjects of demonization and criminalization; these are reflected in ongoing trends such as street surveillance (Amster, 2003; Mitchell, 1995). Forms of such indirect surveillance, especially street furniture, are used to help maintain order. This strategy uses the public sphere to discourage malcontents, such as lingering. In academic debate it has been argued that these, alongside other methods, disallow homeless individuals to participate in society as full citizens. Instead, they foster invisibility from the public sphere (Meert Stuyck, 2005). The effect of certain tools have not been explored yet, especially in the city of Amsterdam, therefore the discourse around strategies of spatial cleansing remains rather silent (Deben, 2003). The built environment - public furniture that discourages public nuisances - is particularly employed. In Weesperplein train station located in the city's center however, it seems to be restrictive towards its mobilization as a public space. The plurality of methods of control, patrolling and surveillance are all found in many of Amsterdam's train stations.

Method

This essay will employ a literature review that critically examines the academic debate around the production of space in a neoliberalist time

frame, using the natural surveillance methods in the Weesperplein train station in Amsterdam as a case study. First, I will explore what has changed in the production of space, through surveillance, and more specifically the implementation of unpleasant furniture. Next, this paper will aim to illustrate some strategies used to create an excluding narrative, which will be elucidated by relating theory to the case study. Last, this essay will demonstrate why normative society tries to expel those they deem as undesirable. The paper will link the relationship between street furniture in Amsterdam's homeless community. The findings of this research will allow us to see how public space is being transformed, thus depriving the homeless of basic access. The aim of this research is to visually recognize the barriers utilized to invisibilize rough sleepers by analyzing public control strategies used in the Weesperplein train station. These strategies are seemingly innocuous to the 'included' civilians, yet detrimental to the public acceptance of the houseless community.

The Transformation of Public Space

Lefebvre (1991) sees space as a means of production and therefore as part of a society's base. Furthermore, space is not seen as something pre-existing and material, but instead as something produced by people and thus highly social. How people produce space is highly contingent with when people produce space. As such space is a societal product, space is conceived by human perception. Individuals do not only create physical landscapes, although this is an important factor in the production of space (Purcell, 2002). The relationship between people and environment has a strong influence on the relationship between people themselves (Lefevre, 1991; Harvey, 2008). Therefore, social relations and social inequalities are also deeply implicated in the production of space. Inevitably the public space is constructed as a social space, therefore also a social construct.

There is a prevailing sense among urban social theorists that has changed in the production of space in the last fifty years (McCann, 2002). These focus on a recent restructuring of urban space that can be traced to several political watersheds which influence the way society conceptualizes cities and

the way they are governed (Purcell, 2002). The ideological roots of this restructuring lie in the rise of neoliberalism and its expression of urban policy. Scholars also point to the intensification of a culture of fear, with shifts in the policing and surveillance of urban space (Mitchell, 1995 ; McCann, 2002). Nonetheless, at its base, the urban restructuring of space might be more fundamentally traced to a broader restructuring of the economy itself. One significant factor of this restructuring is coined by Smith and Low (2013) as the redaction of public space, which informs the ability of urban spaces to serve public interest, which is then compromised by tools such as surveillance. This process is consistent with the notion of neoliberalism. The practice of this ideology comes with implications, primarily dispossession of those who could not afford to participate in that economy (Smith, 1992). In general, it can be understood that urban space is the realm in which the general public hold a stake in ownership, access and regulation. Increasingly, urban space has transformed to be something that is not inherently public, but private enclosures, for example in Weesperplein station. Through increased privatization, contemporary public spaces are marked by invisible borders, which delimit areas (Doherty et. al., 2008). To illustrate, the train station, although considered public, tries to reduce anti-social behavior through design concepts. It embodies a sense of openness with little opportunity for delinquency or crime (Diec, 2009). Modern architecture and layouts promote the idea of an urban Amsterdam, however the available amenities portray the reality. In light of neoliberal tendencies, the train station gains upkeep and supervision, at the expense of inclusionary accessibility.

Overall, we can still witness the enclosure of new public space in which the displaced cannot return to the privatized land, nor are they able to afford housing within the city (Harvey, 2008). Instead, privacy becomes a “virtual commodity purchased by the middle class and the well-to-do” (Bickford, 2000, p. 364). Neoliberalism expresses itself through not only the production of space, but also through its policing (Smith, 1992). This idea embodies two main notions: a form of reclamation of stolen land, and retaliation from those who took it. Punitive measures are enacted against disenfranchised communities, such as the homeless. The “other” is often seen as a threat to normative

and hegemonic in-groups (Gerrard Farrugia, 2015). By reclaiming public space, institutions exclude already-marginalized people. The constant privatization in cities such as Amsterdam becomes a threat to the livelihood and personhood for any who are deemed to be deviant (Amster, 2003).

Tools of Disempowerment

“Public space is going to change as a result of the implicit and explicit disciplining and regulation associated with the refurbishment and management plans” (Deben, 2003, p. 241). The commodification of urban space restricts the ability for a space to aid a wider scope of individuals. Weesperplein station is one of the busiest stations in Amsterdam’s metro system. On a daily basis pedestrians use this route for transport. The trends that are implemented here to keep ‘undesirable’ demographics out of the newly constructed train station are mostly employed in official locations. The municipality of Amsterdam upholds that “planning and management should focus on attractiveness, cleanliness, accessibility and safety” (City of Amsterdam). All these areas of focus can be seen as different criteria utilized to manage and discipline homelessness in public areas. Through natural surveillance in the design, certain features maximize visibility of people, making it easier to surveil and therefore invisibilize them (Clarke, 1995).

The production of space and policing are not necessarily mutually exclusive categories, and their intersection can be seen in the employment of antisocial or hostile architecture. This is meant to prohibit certain kinds of behaviors, as well as people who are deemed undesirable (Katyal, 2002). This increases surveillance and control of access in order to improve security, as well as to ensure homogeneity (Mitchell, 1995). As argued by Amster (2003), there persists a desire to exclude the “unwanted” from the public sphere by limiting their access to it. These notions have translated into the establishment of defensive urban architecture. Such “soft policies of exclusion” vary in their degree and are repressive strategies implemented to invisibilize the existence of houseless people.

Space in modern cities focus on enhancing the quality of urban life and engaging in aesthetic appeal (Bickford, 2002). Amsterdam’s relationship to punitive measures in public space is visible through

the ongoing process of urban renewal in an attempt to beautify the city. There has been a new-found interest in revitalizing urban space, in order to make it safer. Consequently, public space is a contested battleground for power. “Festivalization”, “theme parkerization”, and “museumization” of the city are operations that increase beautification, but limit accessibility (Deben, 2003, p. 231). Streets, plazas and the like underwent reconstruction, conducive to the organization of city life. The patterns of surveillance and patrolling introduced by such policies, however, limit access to space (train stations parks), making public space less than public. By design, people are forced to relocate to the outskirts of the city (Katyal, 2002; Van Deusen, 2002). Aesthetics can be seen as indirect policing, in that it is not directly visible in comparison to the more transparent mechanisms.

Hostile architecture is one of many mechanisms of neoliberalism “which seek to commodify public space,” (Zanotto, 2012). Existing infrastructure can be modified to alter its use. All around the city of Amsterdam, benches are designed to reduce both comfort and possibility of usage. They are implemented to target, disappoint and deter people, particularly those who fall within undesirable demographics (Katyal, 2002). The street furniture limits activities, denying a potential interaction. Urban renewal projects aim to beautify the city, but in return create an unpleasant design (Deben, 2003). Many benches in Amsterdam have been modified to adapt to measures of intangible social control, for example through separated armrests or designs with curves or slopes, which increases the difficulty of resting on the benches. These structures foster the notion of isolating and expelling homeless individuals from urban spaces, continuing the trend of showing them that they are not welcomed (Goss, 1998). Such renewal further disrupts the ability to use the space for different means for the homeless community. This underlines the previously touched upon museumification that Deben (2003) mentioned. The attempts to beautify and revitalize the urban landscape (Mitchell, 1995) consequently disregard any other use besides sitting as a singular unit. The benches depicted from the case study (Fig. 1) are narrow and spaced widely apart. This ensures that an average person can not lay on them comfortably. Further, spaces in between them are wide, to minimize the ability to rest on these benches for long periods of times, like

overnight.



Fig. 1. Benches at Weesperplein, Amsterdam.



Fig. 2. Benches at Weesperplein, Amsterdam.

The day-to-day routine of a homeless person relies on the accessibility of public infrastructure (Meert Stuyck, 2005). A train station seems to encompass all the necessities to sustain a homeless life (Goss, 1998). They provide shelter to protect from cold nights, facilitating sleep with structures like benches, and often employ tools for hygiene, such as bathrooms. Therefore, modifying these necessities ultimately eradicates the functionality it serves for homeless people. In Amsterdam, this change has become visible in spaces that also serve as plazas of profit (mainly tourist areas) (McCann, 2002; Harvey, 2008). However, Amsterdam limits access to the train station through patrolling and closing the station at night. The train

station, as a space in the public domain, has transformed into a spatial marker for state regulation (Song, 2006). Cameras, patrols and the criminalization of activities exclude rough sleepers from utilizing this space.

In light of keeping out those deemed to be dangerous, unsanitary and deviant, cities such as Amsterdam employ borders in both residential areas and train stations (Fig. 2). While sometimes invisible, the barriers at the train station showcase a clear message: keep out (Diec, 2009). These exert noises when entered without the necessary documentation. Further, most of these gates are patrolled by station employees and result in immediate fines if they are entered illegally. Gates can take many forms, “from an impenetrable wall to a simple mechanical arm”, and thus also carry social implications (Bickford, 2000, p. 361). Despite the fact that gates do serve the purpose of safety, they can also transmit the meaning “danger - keep out” (Bickford, 2000, p. 361). Such architecture underlines the dangers of the city and protects civilians. (Van Deusen, 2002, p. 150). It ensures safety for consumption and other punitive trends, while simultaneously excluding homeless people.



Fig. 3. Gates at Weesperplein train station, Amsterdam.

Reasons for Invisibilization

The municipality attempts to revitalize the urban sphere. The public view of homelessness is still fueled by ideas of uncleanness and disorder. The vagrant lifestyle does not serve capital consumerism, and also repulses others from engaging with it (Amster, 2003; Deben, 2003). Thus, spaces

undergo ‘spatial cleansing’ in order to expel and invisibilize the city (Amster, 2003). Although these strategies might reduce the visibility of homelessness, the designs are objects of hostility. Although a part of city life, the homeless are excluded through their otherness, as they are seen as a blemish on broader social relations in capitalist governance. (Deben, 2003). The image of homelessness is used as a visual and boily indicator for dysfunctionality (Gerrard Farrugia, 2014). The need for social order is inherently traced back to the trends of neoliberalism. Therefore, the homeless are seen as something ill, and thus, in need of sanitation. Social order gives incentive to discipline and criminalize homelessness (Amster, 2003). This image of disease often falls in line with the “disneyfication” of public space (Sorkin, 1992). Sorkin (1992) claims that the metaphor fosters an experience of controlled vitality, as the “disinfected experience, of shiny surfaces and squeaky-clean images” (Amster, 2003, p. 199). “Disney is above all the sterilized environment, a place stripped of any outward signs of filth, decay, spoliation, or despair. Underneath that facade, however, is an interior dystopian world of darkness, brutal efficiency, neurosis, rigid control, and emptiness” (Amster, 2002, p. 197). This atmosphere is carried on in the interior world of Amsterdam’s train stations: cold, sterile and efficient.

Surveillance, installations and refurbishments reduce access to the urban landscape. For the homeless community, this changes the essence and use of the public domain. (Doherty et. al, 2006). The right to the city should be held by everyone, and all should have access to public resources. The public domain is accessible to everyone for all sorts of needs, yet some places are more accessible than others for some people and activities (Lofland, 1998).

Conclusion

In conclusion, public space seems to be a space of conflict over who controls it, who has the right to it, and how it is reproduced. It seems to be public, being private as it is an exclusionary field. Public space is being appropriated more and more for private use. Public spaces have also served as a location for socialization, gathering and commercial transactions (Zanotto, 2012). While Amsterdam

has undergone economic advances, public space now grows into an exclusionary resource. Safe, clean, and lively public spaces serve as incentives for profit. Many areas are renewed, in order to revitalize certain neighborhoods, with profit being the core incentive of these projects. These renewals are aimed to beautify the city and create more desirable locations. Nevertheless, this account of public space as an apparatus for economic growth is in contention with the reality of many people whose basic needs are met through access to public facilities. Design and surveillance strategies, mostly in renewed areas, discourage the homeless' ability to engage with the public sphere for survival. Instead, punitive strategies implemented foster the idea of homeless people as criminal or undesirable. It is to be recognized that the common denominator remains an aesthetic narrative, both in how the city should be perceived and the street installation that follows this notion. Therefore, anything that is deemed undesirable is excluded through intangible methods of surveillance. Human interaction is replaced with non-negotiable urban architecture.

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