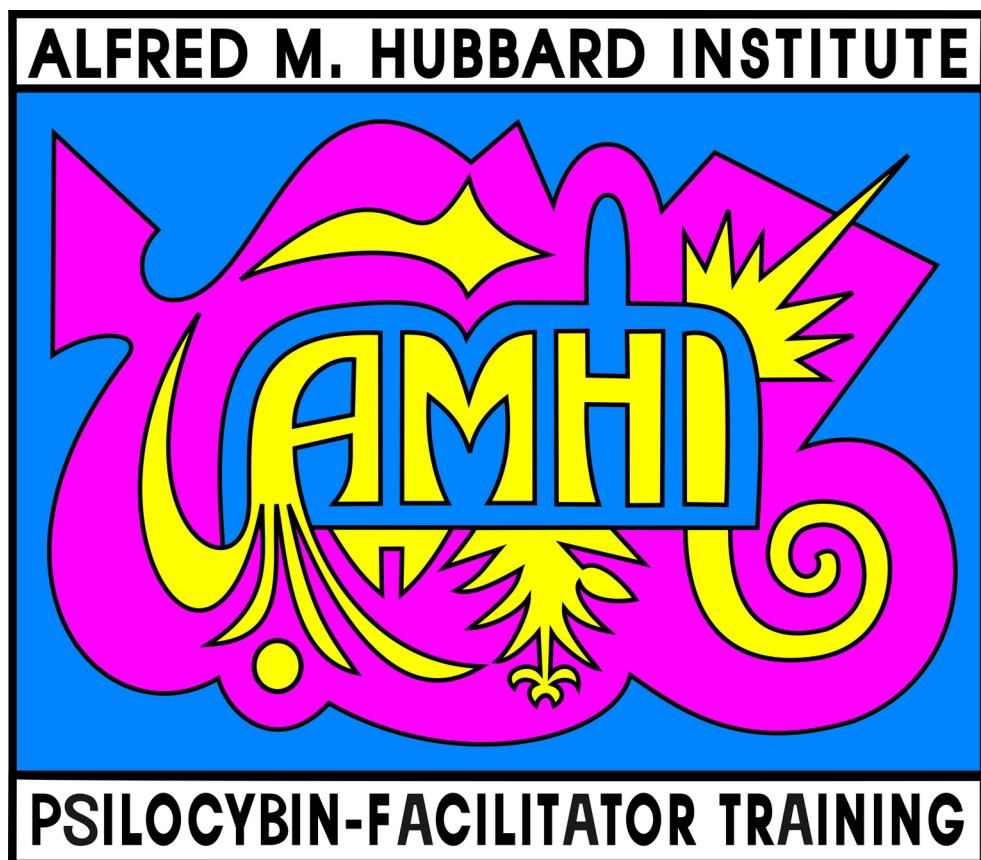


# **Application to Become a Student in the Psilocybin-Facilitator Training Program at the Alfred M. Hubbard Institute (AMHI)**



Version September 2024

## **Preparation for Applying to the AMHI Program**

### Attend an Online Question-and-Answer Meeting

Applicants should thoroughly familiarize themselves with the contents of the AMHI website including our student handbook and AMHI's FAQ page. Potential applicants should write out in advance any questions that they want to ask about the program. AMHI will hold online meetings to explain our program and to enable the public to ask questions. Email us at [AlfredHubbard@protonmail.com](mailto:AlfredHubbard@protonmail.com) to be notified about our next online question-and-answer discussion or to request a one-on-one online meeting.

### Textbook

The textbook for AMHI's training program will be Stanislav Grof's *LSD Psychotherapy*. The subjective psychological effects of LSD are very similar to those of psilocybin, and the psychotherapeutic techniques that Grof describes can be easily adapted to the "wellness" treatments offered by Oregon's licensed psilocybin-service centers. This book can be purchased from the MAPS.org online bookstore. Or you can download the first edition for free:

<file:///home/r/Stanislav%20Grof%20-%20LSD%20Psychotherapy,%20Hunter%20House%201977.pdf>

AMHI advises prospective students to begin reading this textbook now. This textbook will give you a clearer idea of whether psychedelic facilitation is a career that appeals to you. Additionally, prior familiarity with the contents of this textbook will reduce your workload during the training program, should you continue the application process and be accepted into the program.

### Equipment

Students should regularly monitor their email address to which AMHI can send messages. All students will need a functioning modern laptop or tablet with a functioning camera. We will conduct online meetings in which AMHI instructors will visually confirm the students' attendance throughout the entire class. Students will type essays on their laptops, and we will use screenshare to broadcast presentations and to correct the essays. A cell phone is probably inadequate for this sort of online activity.

### Student Handbook

Applicants should read the *AMHI Student Handbook*. If you are accepted into the AMHI training program, we will email a letter of acceptance whose terms require all prospective students to pledge to follow our academic-

freedom policy and adhere to the other rules in the *AMHI Student Handbook*.

## **AMHI's Four-Step Application Process**

AMHI's application process involves four steps:

1. Email your six essays to [AlfredHubbard@protonmail.com](mailto:AlfredHubbard@protonmail.com)
2. Email us your brief video statement or a link to your video
3. Online interview
4. Delivery of acceptance letter

At each of the first three steps of the process, AMHI may decline to proceed further with some applicants.

### **Step 1: Write Six Essays**

The first step in your application will be writing six essays so AMHI can evaluate your writing skills and abstract-reasoning ability. Your essay should be at least one paragraph, but long enough for you to get your point across, no shorter and no lengthier.

Psilocybin is a psychedelic drug whose subjective effects are similar to those of other classical hallucinogens such as LSD and mescaline (the primary psychoactive chemical in the peyote plant). MDMA is not a hallucinogen although it does have mind-expanding properties. The first three of the following writing exercises will discuss a psychedelic substance or MDMA. The fourth and fifth exercises deal with topics from psychology and sociology. The final essay asks you to compare content from the previous exercises.

You will not be penalized for expressing nonconformist opinions. Your essays will be evaluated for logical thought, clarity of expression, cleverness of wording, rhetorical persuasiveness, overall structure of your composition, your thoroughness in evaluating the available evidence, as well as any shortcomings in your adherence to proper spelling, grammar, and punctuation. You should use a spellchecker and a dictionary. If you are not adept with proper punctuation, then use a style guide such as Bryan A. Garner's *The Oxford Dictionary of American Usage and Style*. If you are not a native speaker of English, then we will cut you some slack.

If you have any questions about these instructions, then please contact AMHI so we can clarify what you are expected to do. Our email is:  
[AlfredHubbard@protonmail.com](mailto:AlfredHubbard@protonmail.com)

## **Essay 1: Why Do You Want to Become a Facilitator?**

View this short video *Project: MK-Ultra Human Experimentation on the Psychological Effects of LSD.*

<https://www.youtube.com/watch?v=RD1S6CYCqkQ>

This film raises some serious questions that you can answer in your first essay:

- 1) What qualities should a psychedelic facilitator have?
- 2) Do you think that some personality types could more easily embody these qualities than other personality types?
- 3) What personal qualities do you possess that would help you to become an excellent facilitator?
- 4) What personal qualities might you need to improve in order to increase your effectiveness as a facilitator?

## **Essay 2: Safety Considerations**

Psychedelics can produce pleasant and even blissful experiences. However, we must recognize that they can also bring up difficult emotions.

Facilitators have a serious responsibility to properly screen clients and to skillfully manage both individual sessions and group sessions. Facilitators must take all reasonable precautions to protect the safety of themselves, their clients, and other people who may be impacted both during and after the session in which the drug is administered. Read the "Case History" section of the following medical report [p. 381]. This describes a peyote session gone awry. This session occurred in the context of an indigenous religious ritual, but the lessons that can be learned apply equally to what goes on in a licensed psilocybin-service center. Describe how the session was likely to have been traumatic for everybody involved: the culprit, the victim, the innocent bystanders, and the Road Man (the ceremonial leader of the Native American Church meeting). Your essay should discuss the ethical issues and legal considerations from the standpoint of all of these participants. What lessons might be learned from this tragedy?

# The Analysis and Distribution of Mescaline in Postmortem Tissues

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## Abstract

Mescaline (3,4,5-trimethoxyphenethylamine) is a hallucinogenic alkaloid found in the peyote cactus. This report documents mescaline distribution in a death caused by multiple gunshot wounds. Mescaline was extracted with a butyl chloride liquid-liquid method and identified by mass spectrometry. Quantitative analysis was performed by gas chromatography using a nitrogen-phosphorus detector. Concentrations of the drug were 2.95 mg/L, 2.36 mg/L, 8.2 mg/kg, and 2.2 mg/kg in blood, vitreous, liver, and brain, respectively.

## Introduction

Mescaline is a naturally occurring hallucinogenic alkaloid found in the peyote cactus. Peyote cactus (*Lophophora williamsii*) is found in Mexico and the southwestern United

States (1). Although the use of mescaline is illegal in the United States, it is legally used in religious rituals of the Native American Church, usually in the form of a tea brewed from the cactus or by ingestion of the "button" top of the cactus (2). Although chemically unrelated to lysergic acid diethyl amide (LSD) (Figure 1), the hallucinogenic effects of mescaline are similar to that of LSD, although they are longer lasting.

Typical hallucinogenic doses range from 200 to 500 mg of the hydrochloric or sulfate salt with blood concentrations of 3.8 mg/L at 2 h and 1.5 mg/L at 7 h after ingestion (3). Reynolds et al. (4) reported the death of an individual due to massive traumatic injuries while under the influence of mescaline. Drug concentrations in the blood, liver, and urine were reported at 9.7 mg/L, 70.8 mg/kg, and 1163 mg/L, respectively. Nolte and Zumwalt (5) reported a case of mescaline intoxication resulting in death. An antemortem blood sample contained 0.48 mg/L of mescaline and a urine sample 61 mg/L of mescaline.

This report describes the mescaline concentrations in a traumatic death case.

## Case History

The victim was a 53-year-old American Indian male who was purportedly using Peyote in a religious ceremony with others. During the course of the ceremony, the victim was shot multiple times by another participant.

## Materials and Methods

### Reagents

Methamphetamine and Mescaline were purchased from Radian (now Cerilliant, Austin, TX). All other reagents were analytical reagent grade purchased from Fisher Scientific (St. Louis, MO) and VWR (St. Louis, MO).

### Analytical procedure

To 1.0 mL whole blood, 1.0 mL vitreous humor, or 1.0–2.0 g tissue homogenate (1:4), internal standard (methamphetamine)

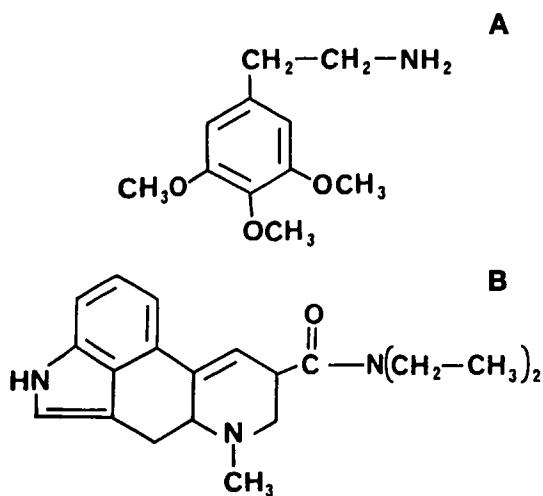


Figure 1. Structures of mescaline (A) and LSD (B).

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was added and the pH adjusted by the addition of 0.5 mL concentrated NH<sub>4</sub>OH. The sample was extracted with 10.0 mL *n*-butyl chloride. The organic layer was then transferred to a clean culture tube and back-extracted into 3 mL 1N H<sub>2</sub>SO<sub>4</sub>. The pH was adjusted again with 0.5 mL concentrated NH<sub>4</sub>OH and the sample was extracted into 2.5 mL of *n*-butyl chloride. The organic layer was then evaporated to dryness under N<sub>2</sub> with the addition of methanolic HCl at 40°C. The sample was reconstituted with 100 µL methanol for injection into the gas chromatograph (GC).

Qualitative analysis was performed by SIM gas chromatog-

raphy-mass spectrometry (GC-MS) using an HP-1 12.0-m × 0.2-mm column. The primary ion used for a positive identification was 182 with secondary ions 167 and 181.

Quantitative analysis was performed by GC using a nitrogen-phosphorus detector. An HP 5890 GC was used with an HP-1 12.0-m × 0.2-mm column. The operating parameters consisted of a column temperature programmed from 100 to 300°C at 10°C/min. The injection volume was 2 µL, done by a splitless injection with a 1.0-min purge. A representative chromatograph is presented in Figure 2. The ratio of mescaline peak area to methamphetamine peak area was compared to a calibration curve bracketing the concentration of the specimen. The curves were prepared from spiked whole blood controls and deionized water that were extracted at the same time as the specimens evaluated by that curve.

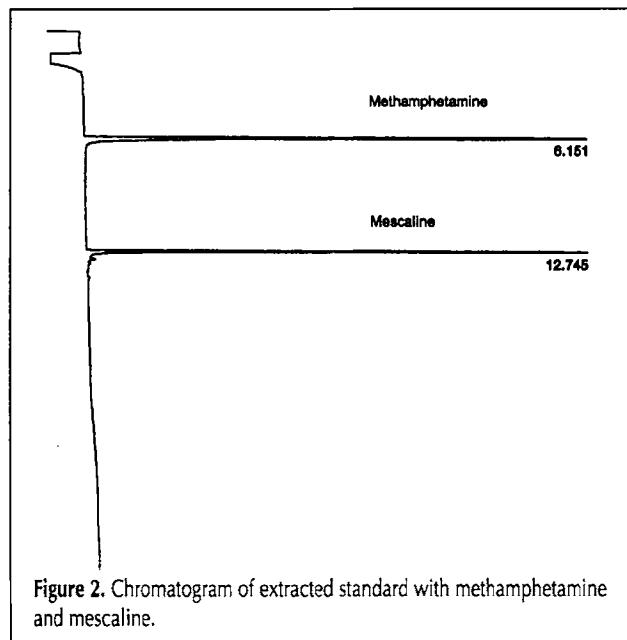


Figure 2. Chromatogram of extracted standard with methamphetamine and mescaline.

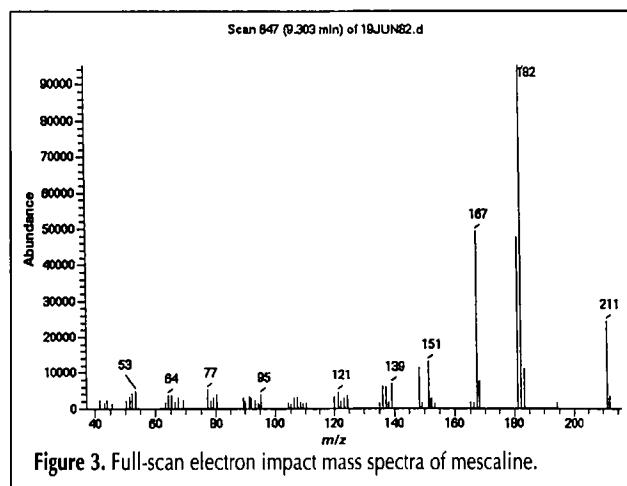


Figure 3. Full-scan electron impact mass spectra of mescaline.

## Results and Discussion

The mass spectrum of mescaline is presented in Figure 3. The concentrations of mescaline are presented in Table I. An immunoassay test performed on the urine was negative for other drugs of abuse and the blood was negative for alcohol.

A review of the literature reveals a paucity of data relating to the distribution of mescaline. Charalampous et al. (6) report a mean Cp<sub>max</sub> of 3.8 mg/L blood concentration from subjects given 500 mg of labeled mescaline hydrochloride. Mokrasch and Stevenson (7) report a mean Cp<sub>max</sub> of 14.8 mg/L blood concentration after being given a 5-mg/kg dose of mescaline sulfate intravenously. These controlled studies offer much information on drug/metabolite concentrations. Reynolds and Jindrich (4) report a traumatic death associated with mescaline use with a blood concentration of 9.7 mg/L. The present case documents blood and tissue concentrations significantly lower than these; however, no data are available as to the amount ingested, the time interval between consumption and death in the case, or the hallucinogenic effects, if any.

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Table I. Distribution of Mescaline

Tissue	Concentration
Femoral Blood	2.95 mg/L
Vitreous	2.36 mg/L
Liver	8.2 mg/kg
Brain	2.2 mg/kg

### **Essay 3: Microaggressions**

Oregon's Psilocybin Services Act requires facilitator-training programs to teach a 12-hour social-equity "module". Social equity involves discussing racial topics such as *microaggressions*. If you have never heard of the concept of microaggression, please look it up online.

The article "Culture and Psychedelic Psychotherapy" states, "Women of color are among the most stigmatized groups of people in North America" [p. 129, summarized on p. 125] and Black patients can be injured by "violence from clinicians in the form of microaggressions" [p. 133]. Do you think these statements are accurate? Explain why or why not.

According to this article, two-out-of-four non-Black MDMA therapists made microaggressions or culturally insensitive comments to Black clients who were under the influence of MDMA. This "abuse of authority and abuse aided by an intoxicating substance" was likened to sexual abuse by a therapist [p. 133].

The co-author Jamilah R. George described a therapist committing a microaggression by saying, "Maybe there is a part of you that doesn't want to be understood" [p. 130]. Please explain how this statement was a racist abuse that was a form of violence.

Express your honest opinion of the authors' arguments. You will not be penalized for whatever viewpoint you take; your evaluation on this task will be based solely on the quality of your thought, the rigor of your logical reasoning, and the intellectual honesty of your analysis.

Would you feel comfortable acting as a facilitator for any of the three authors? Explain in detail why or why not.

# Culture and psychedelic psychotherapy: Ethnic and racial themes from three Black women therapists

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## RESEARCH ARTICLE



### ABSTRACT

Psychedelic medicine is an emerging field of research and practice that examines the psychotherapeutic effects of substances classified as hallucinogens on the human mind, body, and spirit. Current research explores the safety and efficacy of these substances for mental health disorders including anxiety, depression, and posttraumatic stress disorder (PTSD). Although current studies explore psychotherapeutic effects from a biomedical perspective, gaps in awareness around cultural issues in the therapeutic process are prominent. African Americans have been absent from psychedelic research as both participants and researchers, and little attention has been paid to the potential of psychedelics to address traumas caused by racialization. This paper examines cultural themes and clinical applications from the one-time use of 3,4-methylenedioxymethamphetamine (MDMA) as part of an US Food and Drug Administration (FDA)-approved clinical trial and training exercise for three African American female therapists. The primary themes that emerged across the varied experiences centered on strength, safety, connection, and managing oppression/racialization. The participants' experiences were found to be personally meaningful and instructive for how Western models of psychedelic-assisted psychotherapy could be more effective and accessible to the Black community. Included is a discussion of the importance of facilitator training to make best use of emerging material when it includes cultural, racial, and spiritual themes. A lack of knowledge and epistemic humility can create barriers to treatment for underserved populations. Implications for future research and practice for marginalized cultural groups are also discussed, including consideration of Functional Analytic Psychotherapy (FAP) as an adjunct to the psychedelic-therapy approaches currently advanced. As women of color are among the most stigmatized groups of people, it is essential to incorporate their perspectives into the literature to expand conversations about health equity.

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### KEYWORDS

African Americans, hallucinogens, psychedelic medicine, MDMA, psychotherapy, education, race, culture

## INTRODUCTION

### Psychedelics in Western medicine

Psychedelics have been used in traditional indigenous contexts for centuries for emotional health, spiritual purposes, and personal growth, but are now re-emerging in Western medicine for their potential in reducing symptoms of some of the most disabling mental health conditions. Therapeutic experimental research of psychedelics dates back to the 20th century, with drugs like Lysergic acid diethylamide (LSD), psilocybin, mescaline, and 3,4-methylenedioxymethamphetamine (MDMA) being used for a variety of indications (Costandi, 2014; Passie, 2018). Current clinical research is exploring the safety and efficacy of psychedelics for

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mental health disorders, such as posttraumatic stress disorder (PTSD), mood disorders, substance use, and end-of-life anxiety (Brown & Alper, 2018; Ross et al., 2016; O'talora G et al., 2018). These drugs have been explored as stand alone treatments, such as intravenous ketamine infusion therapies (Zarate et al., 2006), and as adjuncts to psychotherapy (Mithoefer et al., 2018; Rodriguez et al., 2016; Wilkinson et al., 2017). However, very little of this research has focused on people of color, and there are no accounts that represent the experience of Black women. The purpose of this paper to report the personal accounts of three African American female clinicians who were administered a psychedelic substance in a psychotherapeutic clinical setting to help advance our understanding of the use of psychedelic-assisted psychotherapies in different populations.

In Western clinical paradigms, psychedelic substances and traditional psychotherapy have been combined to create mental health treatments that are curative and support psychic expansion through non-ordinary states of consciousness, where the effect is potentiated by the presence of an experienced healer, therapist, or guide. For example, psilocybin is being used in combination with Acceptance and Commitment Therapy (ACT) for the treatment of Major Depressive Disorder (Sloshower et al., 2020). Ibogaine is combined with behavioral therapy in the treatment of opiate dependency (Brackenridge, 2010). Likewise, MDMA is being used in combination with psychotherapy for PTSD to facilitate trauma processing and create a context for healing within a participant's mind, body, and spirit (Mithoefer, 2015). Although psychedelic-assisted treatments are showing promise in Western medicine, researchers and clinicians must begin to examine the applicability of these protocols cross-culturally.

### Indigenous practices

Most of the existing literature on psychedelic therapy is from a Eurocentric, medicalized perspective, often omitting indigenous use or discussing its origins in a detached historical manner (George, Michaels, Sevelius, & Williams, 2020). However, many substances currently used for psychedelic medicine are derived from plants that are considered to have sacred healing properties by indigenous groups, and are still being used by those communities today. Even manufactured psychedelic substances are derived from plants, some of which have been prized for their health benefits by indigenous peoples, such as sassafras and similar spice trees, which produce safrole oil, the source of MDMA (Kemprai et al., 2020).

Cultural groups around the world make use of psychedelic healing traditions, which include the clinical management of psychedelic medicines in a spiritual context. These traditions are repositories of millennia-old medical experience and knowledge regarding best practices in the use of these substances. Such indigenous traditions constitute their own form of clinical science that provides important guidelines relevant to Western applications of psychedelics in medicine and therapy (Winkelman, 2007).

There has been much written about the indigenous use of plant medicines from Mexico and South America, but psychedelics have been used across cultures and eras. The psychedelic Soma was a central part of ancient Indian (Vedic) religiosity, and psychedelics appear to have been used in Biblical times to facilitate divine encounters by anointing priests and kings (Nemu, 2019). They have also been used for thousands of years in African culture and traditions. When Black people were enslaved in North America, Yorba women from West Africa engaged in healing practices using their knowledge of plant medicines derived from Africa (A. Williams, 2018). In Ethiopia, all plants are believed to possess some degree of medicinal usefulness, and medicinal plants occupy a central place in their traditional health care system (Doffana & Yildiz, 2017). This includes an array of flora for medical purposes and important psychoactive plant medicines for psychological problems and more psycho-spiritual problems, such as warding off evil influences and misfortunes; Caate (*Katha edulis*), buncho (*Coffea arabica* L.) and ṭaddo (*Rhamnus prinoides*) are examples of some of these plant medicines (Doffana & Yildiz, 2017).

The iboga shrub (*Tabernanthe iboga*) has been used for centuries in healing ceremonies and cultural rites by traditional communities in West Africa, for example among members of the Bwiti religious groups in Gabon, Cameroon, Equatorial Guinea and the Congo (Brackenridge, 2010). It is a mild stimulant in small doses, but in larger doses causes an intense psychedelic state. Iboga is the source of ibogaine, a powerful psychoactive alkaloid. Researchers in the West, found that ibogaine can significantly reduce withdrawal symptoms from opiate dependency and eliminate cravings (e.g., Brown & Alper, 2018). This has resulted in several noteworthy clinical trials and thriving international and underground ibogaine treatment centers for opiate addiction (Labate, 2014).

In southern Africa, there is widespread reliance on *ubulawu* as psychoactive spiritual medicine among practitioners of traditional medicine in many communities, including the Xhosa and Zulu, to communicate with their ancestral spirits and to treat mental disturbances (Sobiecki, 2012). Ubulawu is composed of the roots of a variety of plants (e.g., *Silene* and *Dianthus* species) that are ground and made into a cold water infusion, churned to produce healing foam. Further, Bantu traditional healers use the ubulawu as part of their ritual initiation process and as a training tool for their shamanic work. It has been noted that factors such as psychological attitude, familiarization with the process, correct plant combinations, and a compatible relationship with the healer are all critical influences in the effectiveness of ubulawu (Sobiecki, 2012). The Bushmen of Dobe in Botswana use the hallucinogenic plant kwashi (*Pancratium trianthum*) for spiritual and healing purposes (Schultes, Hofmann, & Ratsch, 2010). As of 2002, over 300 plants with psychoactive uses have been identified in South Africa alone, many with psychedelic properties (48 listed as visionary plants for inducing altered states of consciousness; Sobiecki, 2002).



There are many other psychedelic medicinal traditions in Africa, but most of these have not yet been sufficiently researched to enable Westerners to fully understand or appreciate their potential. What is clear, however, is that Africans have had a long tradition of healing with psychedelic plants, used in accordance with traditional practices and experienced healers.

### Stigma surrounding psychedelics in Black communities

Despite great public interest in the use of psychedelics for mental health, and traditional uses among indigenous groups, people of color in the US have shown less enthusiasm for this repopularized modality. In terms of African Americans specifically, reduced interest is evidenced by the fact that very few Black people have been included as research participants in studies of psychedelic therapy (2.5% worldwide; Michaels, Purdon, Collins, & Williams, 2018) and our own observations in regards to the small number of Black researchers involved in psychedelic medicine. Further, although Black and White people in the US use drugs at similar rates, recreational use of hallucinogenic drugs is far lower for African Americans than White Americans (Shalit, Rehm, & Lev-Ran, 2019).

False stereotypes about African American drug use causes many to have increased fears about even considering psychedelics as a mode for healing and growth. Consider that Black youth use drugs at lower rates than White or Hispanic youth (Wu, Woody, Yang, Pan, & Blazer, 2011), and Black Americans are less likely to suffer from substance use disorders than White Americans (Grant et al., 2016; Lacey et al., 2016). Nonetheless, Black Americans are 3.5 times as likely to be arrested for drug-related offenses and are 7 times more likely to be incarcerated for using drugs compared to White Americans (e.g., US DOJ, 2016; Hinton, Henderson, & Reed, 2018).

These differential rates of punishment are not an accident. According to University of Virginia historian, Douglas Blackmon, the criminal justice system was designed to bring justice to White people and injustice to people of color (Anderson, Blackmon, Elzie, López, & Lowery, 2017). Slave patrols were the forerunners of our police force, hired by landowners to catch runaway slaves and punish them (Turner, Giacopassi, & Vandiver, 2006), and law enforcement today continues to carry out a version of its original mandate. Laws against drug use in the Nixon-era were intentionally designed to target Black people, as they were seen as a serious threat due to their push for Civil Rights. “Hippies” were also targeted as their opposition to the Vietnam War was attributed to the use of substances like LSD. However, drug laws were never applied evenly across racial groups, with Black Americans targeted by law enforcement and receiving longer and harsher sentences for identical violations of the law as compared to White Americans (e.g., Beckett, Nyrop, & Pfingst, 2006). The rising perception that drugs were a Black problem fueled negative stereotypes about these communities that Black people were

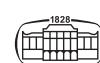
eager to dispel, resulting in stronger negative attitudes about drug use overall in Black communities.

The Black Church was motivated to find solutions to the crack epidemic and aligned itself with the Reagan-era “War on Drugs” as a potential solution. However, the War on Drugs became an excuse for long and harsh sentencing of Black Americans found guilty of drug infractions. Crack cocaine penalties were much more stringent than penalties for powdered cocaine use, the only difference being that Black people were more likely to use crack and White people were more likely to use cocaine. Through this process, African Americans became falsely stereotyped as addicts and dealers who were committing crimes to feed unconstrained drug habits (Williams, Gooden, & Davis, 2012). So, the War on Drugs became a vehicle for the mass incarceration of Black Americans accused of drug infractions, and US prisons became filled with Black and Brown bodies (Alexander, 2012). There was little interest within the Black community for drugs as a means of expanding consciousness or personal growth. The focus was on preventing and reducing drug use to keep people safe, well, and out of jail.

There is no scientific literature on African Americans and psychedelics, beyond demographic correlates of usage and treatment-seeking patterns (e.g., Palamar, Mauro, Han, & Martins, 2017). The limited research on MDMA among African Americans indicates that the drug has gained a small measure of increased popularity among Black youth, amidst much misinformation and misperception about the benefits and dangers of use. Rather than facilitating self-discovery or improving mental health, users believe MDMA can alter the effects of other drugs or potentiate sexual experiences (Rigg, 2017; Rigg & Lawental, 2017).

### African American racial and cultural trauma

Historical trauma refers to the cumulative emotional harm of an individual or generation caused by a profound traumatic experience or event. The trauma experienced by prior generations continues to result in harm to subsequent generations. The historical trauma response may include depression, substance abuse, suicidal ideation, anxiety, low self-esteem, anger, and emotional constriction (Brave Heart, 2003). Examples of historical trauma include acts of genocide, such as what happened to Native Americans and Indigenous Canadians, and to Jewish people during the Holocaust. One of the most salient examples of historical trauma in the United States is the experience of Black people in America who were kidnapped from their homes in Africa, and forced into a lifetime of servitude. These individuals were subjected to an agonizing Middle Passage, enslavement of themselves and their children, forced separation of families when children were sold, physical and sexual abuse, and forced extermination of their culture and languages. Once slavery was no longer legal, African Americans continued to experience oppression in the form of segregation, Jim Crow laws, and the unequal application of the criminal justice, which included lynchings (Alexander, 2012; DeGruy, 2007).



At every level, the criminal justice system is heavily biased against Black people compared to White people (e.g., Beckett, Nyrop, & Pfingst, 2006; US DOJ, 2016), and although Black Americans are 13% of the population, they comprise 35% of male inmates and 44% of female inmates (Hinton et al., 2018).

Cultural trauma occurs when members of a cultural group have been subjected to a horrendous event that etches permanent marks upon their group consciousness, marking their memories forever and changing their future identity in fundamental and irreversible ways (Alexander, Eyerman, Giesen, Smelser, & Sztompka, 2004). Given the traumatic history of African Americans, combined with current problems such as racial profiling, mass incarceration, unchecked police violence in mass media, and daily discrimination, it should be unsurprising that cultural trauma persists (Alexander, 2012; Becket, 2006; Bor, Venkataramani, Williams, & Tsai, 2018; Chou, Asnaani, & Hofmann, 2012). Traumatization exists at the intersection of race and gender as well. African American women experience high rates of PTSD, which can be explained in part by the high number of traumas they experience. The National Survey of American Life found that almost half of all African American women had been assaulted, which included 17% having been raped, 20% having been sexually assaulted, and 16% having been stalked; additionally, 17% experienced a life threatening car accident, 14% had a life threatening illness, and 12% had a child with a life threatening illness (Ching, Williams, & Taylor, 2018). Given these grim numbers, it seems clear that Black women carry a great deal of pain associated with life in America, from both past and present traumas.

The combination of historical and cultural trauma in African Americans can lead to what Dr. Joy DeGury (2007) has termed “Post Traumatic Slave Syndrome”—loss of self-esteem, anger, and internalized racism. Correspondingly, current research indicates that the experience of ongoing racism can indeed result in stress, traumatization, and even a formal diagnosis of PTSD. When racism causes or contributes to traumatization, we call it *racial trauma* (Williams & Leins, 2016; Williams, Printz, Ching, & Wetterneck, 2018).

### African Americans and medical research

African Americans also have these traumas surrounding medical research, including psychedelic research. There is evidence that the risks of early era psychedelic research unduly rested on the backs of African Americans and other vulnerable populations. In examining these early studies, comparing the treatment received by White research subjects to what was experienced by people of color, inequities become evident. The Addiction Research Center (ARC) in Lexington KY, run by Dr. Harris Isbell, shared the campus with the Federal Bureau of Prisons. The research subjects were inmates, one-third White, a third “Negro” and a third “Mexican.” While most people have some knowledge of the Tuskegee Syphilis Study of Untreated Syphilis that targeted Black men, few know about the facility dubbed the “Narco Farm” in Kentucky (Campbell, Olsen, & Walden, 2008).

One study describes two groups that received LSD, one was “Negro” males convicted on drug charges who were recruited from prison and provided coercive incentives to participate in dubious LSD experiments, and the comparison group was professional White people at Cold Spring Harbor, living freely, who were not coerced but given LSD in the principal investigator’s home “under social conditions designed to reduce anxiety” (Abramson, 1960). Knowing the profound influence of set, setting, and intention, these two groups undoubtedly had very different experiences. According to Edward Flowers, an African American subject in ARC experiments while incarcerated, “They used my ass and took advantage of me, you know, being a young kid and all...” (Campbell & Stark, 2017).

There were over 500 published studies that came out of ARC from 1935 to 1975, testing the limits of human tolerance for psychedelics, opiates, and amphetamines on prisoners (NIDA, 1978). Dr. Isbell’s studies included dangerously high and prolonged doses of LSD on his subjects. In the 1970s, ARC moved to Baltimore and became the National Institute on Drug Abuse (NIDA), after a nationwide ban on the use of federal prisoners as research subjects. These studies violated well-established guidelines for the ethical conduct of biomedical research (e.g., Nuremberg Code, Declaration of Helsinki, Belmont Report) that has never been publicly acknowledged. African Americans individually may not know the details of the crimes committed against Black communities, but the cultural memory remains (Suite, La Bril, Primm, & Harrison-Ross, 2007).

### Psychedelic experiences for training of therapists

Psychedelic-assisted psychotherapy, as practiced currently in academic research settings, involves the use of a psychedelic compound in conjunction with a specified sequence of therapy sessions that are intended to inform, shape, and support the psychedelic experience. Studies typically include three types of sessions: preparatory, medication, and integration sessions (Bogenschutz & Forcehimes, 2016). These prepare clients for psychedelic sessions and establish the therapeutic alliance, to guide them safely during the experience and assist in the critical process of translating their experience into lasting change. Sessions generally utilize medium to high doses of a psychedelic substance during 1–3 sessions, with the intention for the client to have an intense and insightful experience supported by the therapists and further explored during integration (Nielson & Guss, 2018).

Therapists and researchers who work with psychedelics are often questioned regarding their own use of psychedelics, with a concern that a lack of direct experience might compromise their effectiveness as therapists (Nielson & Guss, 2018). Such experiences may be difficult to obtain given the legal prohibition against psychedelic substances, and even more so for African Americans for the reasons described previously. To facilitate instructional psychedelic experiences, the Multidisciplinary Association for Psychedelic Studies (MAPS) received US Food and Drug



Administration (FDA) approval to proceed with a separate study for healthy volunteers. As part of the training to become an MDMA therapist, clinicians were able to receive one dose of MDMA along with psychotherapy in the same manner in which a participant would. The study was not designed to investigate the effect of the MDMA experience on clinicians, but rather to provide the opportunity for therapists in training to experience MDMA in a therapeutic setting, while collecting safety data in healthy volunteers. Some therapists have published their own individual accounts (e.g., Ching, 2020; Halberstadt, 2014), but as previously noted, there have been no accounts from African Americans and their corresponding cultural issues published in the professional literature, making this an important new area of inquiry. Women of color are among the most stigmatized groups of people in North America, where much of this work is taking place, therefore it is essential to incorporate these perspectives into the literature to expand conversations about psychedelics and health equity.

## METHODS

### Participants and study procedures

At the University of Connecticut Health Center (UConn), our team participated in a multisite MAPS-sponsored, FDA approved, Phase 2 open-label study for PTSD. This work focused on culturally-sensitive and respectful treatment approaches for people of color, taking into account the impact of culture and the possible need to adapt MDMA-assisted psychotherapy to culturally-specific traumas (Williams et al., 2018; Williams, Reed, & Aggarwal, 2020).

At the UConn site, most study clinicians participated in the separate study to further their clinical training, “Phase I Placebo-Controlled, Double-Blind Crossover Study to Assess Psychological Effects of MDMA when Administered to Healthy Volunteers” (MT-1; [ClinicalTrials.gov](#) identifier: NCT01404754). MT-1 was a randomized, double-blind cross-over study, whereby all participants received MDMA during one drug session and placebo at a second session. Three MT-1 participants were Black women. Each participant had an initial preparatory visit at the investigators’ offices for screening, followed by two day-long drug sessions, each including an overnight stay with a night attendant in a nearby room. Participants had an integrative session with the therapists the next morning after drug sessions, and a phone call to check in the day after. Each participant worked with two therapists, a male and a female. Between the three therapist participants, there were a total of four facilitating therapists, three of whom were White Americans and one who was a Columbian American. The study was approved by the Copernicus Institutional Review Board, and all participants provided informed consent.

### Methodology

To arrive at critical themes, an iterative thematic analysis process was utilized (Vaismoradi, Jones, Turunen, &

Snelgrove, 2016). The objective of this approach is to generate themes related to the phenomena under study that might point us toward a broader cultural experience as witnessed through a smaller number of eyes and life experiences (the phenomena-in-context). The goal is to acquire a felt sense of the experience through accounts described by different participants. To that end, each participant wrote about her experience, with a focus on the parts that felt most salient, and then condensed the accounts to approximately 950 words. An iterative process was utilized to identify themes, whereby the subjects of the study were themselves co-creators of the themes. Each participant read each account and generated themes, revising the final list until there was agreement.

What follows are the written accounts of three female African American therapists from the UConn site that participated in MT-1 in 2017 in Denver, Colorado.

### Psychedelic experiences

**Therapist 1: Marriage and Family Therapist.** Therapist 1 is a licensed Marriage and Family Therapist and Director of Psychedelic Studies at an outpatient mental health clinic. She was also a study therapist for a psilocybin-assisted psychotherapy for Major Depressive Disorder at Yale University. She is a member of the MAPS Advisory Board and member of the Racial Equity and Access committee for the Chacruna Institute for Psychedelic Plant Medicines. She also served as a Sub-Investigator and Study Coordinator for MAPS’ Phase 2 MDMA PTSD at UConn. She received her undergraduate degree in Philosophy with a bioethics concentration from the University of Louisville in Kentucky, and her M.S. in Marriage and Family Therapy from Valdosta State University in Georgia. Below she describes her MDMA experience.

“I feel like I’m dying but it’s okay,” I say with a smile on my face. As I lie on the couch with two therapists by my side, I observe a battle between my mind and body. My body ready to speak, each cell becoming more energized and attuned to the drug, ready for a deeper knowing of what it means to be human; and my mind, stuck, repetitive, looping on narratives of the past making sure that I “keep it together” on my journey. Soon enough, the drug sneaks past my mind’s defenses, past my reflexive tendency towards control and precision, and catapults me to a place of dissolution. Defenses down, I am raw and open, experiencing the world in its Divine essence, and for the first time in my life I felt free. Me—a young, Black woman, free. I had transcended the political realities of my race and gender and ascended to something greater—I got to be human.

No longer bound by the constraints of my political realities, I set sail on a journey that allowed me to reconnect to a place cradled by Love. I’m talking about connecting to the totality of all Life kinda place; where there is no beginning or end, where there is no separation from Love. A place I always knew existed but felt so distant from; I call that place Home. And my grandmother was the first to greet me. Imparting her wisdom not only for me, but for my mother, tears of joy filled my face. This was the first time I had felt her presence



since her passing. “Thank you, grandma; thank you for bringing me here.” I felt at peace.

After I experienced this sense of freedom and fluidity, I began to feel a heaviness in my body pulling me down into a very different story. My breath moved more slowly, a fire of emotions welling up; my body was slowing me down. Trying to put my therapist perspective on in this experience, I think there must be a technique we can do to help my body not feel so heavy. So I ask my therapists, “What can I do to speed up my body? My body is slowing me down.” Little did I know coming back into this Black body, sitting with the painful internalized stories of not being enough, was the bulk of my work.

I was not happy. I was not happy at all.

Racial wounds from my past resurfaced and I had to learn how to sit with these stories in an unfiltered way. Those defenses that became a necessary part of my social development and helped me survive no longer worked. I felt lost, confused, and tired, not having the skill set to process such complexities. My personal reality, and mind, told me that I was beyond my race, gender, and traumas from the past, but my political reality, or this body, demonstrated something different. So, there I was, with my two therapists, the drug, and my wounds, trying to make sense of a new reality; a culture my body knew in a language my mind did not.

“Some moments of feedback are making me more confused, angry, and frustrated,” I said to my therapists. “You all don’t understand what I’m really trying to say.”

“Maybe there is a part of you that doesn’t want to be understood,” one of the therapists says.

Silence. My mind trying to process what was said. There is nothing more than I want in life than to be understood, especially as a Black woman. Malcolm X once said, “The most disrespected, unprotected, and neglected person in America is the Black woman.” I’d like to add misunderstood to that phrase too. The battle between my mind and body returns. Moments of connection were replaced by rage. I hated the parts of myself that said I wasn’t enough, the society and people that reinforced this message too. I know they mean well when they say “you gotta be twice as good to get ahead,” but somehow that narrative made me believe that I wasn’t enough. I started to fall apart. I tried to be strong; most of the mental tricks I knew to help me distract were not working. I wanted to get back to that space of freedom but I just couldn’t.

I normally cope with the stressors of life in isolation; not confiding in anyone to support me because I don’t want to “burden” others, or I believe I am “strong enough” to handle it. Talking about my issues made me vulnerable, and I only knew how to be vulnerable with myself. There is a part of me that sometimes feels like I am betraying myself if I open up to others. This MDMA experience was one space where I couldn’t isolate. My therapists and Spirit wouldn’t let me. I had to take off my Super Woman cape and allow others to care for me – a new skill I had to learn. Love returns and this tumultuous, relentless, steadfast force did everything to protect me. And for that, I am forever grateful.

My intention going into my dosing session was that whatever happened would be for The Highest good. I believe I am

still discovering what that highest good is. This MDMA therapy experience showed me – in a very embodied way – the “two-ness” W.E.B. Dubois, Toni Morrison, and other writers often talk about in the Black experience. The days, weeks, and years of processing helped me realize two important truths: more Black folk deserve to feel human, free from the oppression and traumas we’ve endured, and that no thing can separate me from Divine Love.

**Therapist 2: Clinical Psychologist.** Therapist 2 is a board-certified licensed clinical psychologist and academic researcher. She is also clinical director of an outpatient mental health facility, where she provides supervision and training to clinicians for empirically-supported cognitive-behavioral treatments. She completed her undergraduate degree from MIT, post-baccalaureate work in psychology at UCLA, and her doctorate at the University of Virginia. Her research focuses on African American mental health, culture, and psychopathology, and she is well-published on these topics. She feels passionate about improving cultural competence in the delivery of mental health care services to reduce barriers to care. She also gives diversity trainings nationally for clinical psychology programs, scientific conferences, and community organizations. Below she shares some of the insights she gained during her MT-1 experience.

As the medicine kicked in, my body felt very heavy. My two therapists suggested I lie down, and I felt myself become an immovable brick on the couch. I heard myself say it out loud and slowly, “Everything is about work. Everything I do.” The words just kept coming, slowly but with purpose. “I have a schedule of stuff I do, and it’s all about ‘check the box.’ Even my family. Even myself. It’s like my life is a big to-do list and everything is check-the-box, done. Take the kids to school, check. Finish up a paper, check. Self-care, check. I like to think I am doing that for myself, but it’s not, it’s all work. So I can say ‘yeah, I did my self-care, check.’ Gym, check. Friends, check”

My family often posts pictures of me and my sisters to social media, and I always hated it. If someone had asked why, I would have said it was because my bangs were frizzy or my teeth were crooked. I figured it was just because I was a perfectionist and held myself to a higher standard. In fact, it never occurred to me that anyone might find their own child pictures positive in any way. I avoided those pictures, kept safely tucked away in an ancient photo album, and I don’t show them to anyone. My childhood and my family was a mess, and these pictures reminded me of that. End of story. I thought. Until that MDMA session, where we started talking about that kid that was me. I didn’t want to look at her.

I felt wisdom and compassion radiating from my therapist, as she asked if I could find love in my heart for that little girl. I said, “No, I hate her.” “Can you try hating a little bit less?” she asked gently. “No!” I insisted. So why, then did I hate her so, so much? It wasn’t because of anything she had done, but because of what she couldn’t do. This was the key. “Because,” I said with tears streaming down my face, “because she is so vulnerable.” I don’t know where that came from, but it all made sense. I knew deep inside that I never wanted to be that helpless again. The childlike fragility, neediness, and



vulnerability were intolerable. I wanted to be strong all the time. As Black people, we feel we have to be strong all the time, and Black women are just *strong*. You can't be off your game for a minute or disaster can happen. But no one can be strong all the time, and no should have to be.

Then I saw an image of the sun. This was the heart of my experience – though it was bright yellow in the blue sky the colors stayed completely separate. I said, “The sun is yellow and the sky is blue, but there's no green.” The colors should be mixing but they never do. It doesn't make sense, but it's true. I am sure my therapists thought I had completely lost my mind. For me this represented the paradox of knowing that people need people and yet feeling inside that I don't need anyone. The idea that I might need others for anything triggered intolerable feelings of brokenness that I desperately wanted to hide. And often pretending was good enough as long as I could get by, since I never thought I could ever be truly repaired. I didn't feel this as profoundly as I did in the past, but I still didn't see myself as completely whole. I felt ashamed of my shortcomings, especially my interpersonal failures, realizing that I expect to be rejected, and so I'd tell myself I don't need that person. I can't tolerate the thought of being needy.

I recognized that one of the ways I had dealt with feeling disempowered and vulnerable was to gain as many competencies as I could. I had built this big wall of competencies, of lots of things I could do really, really well to protect myself. Each glass brick in the wall was another skill or degree or ability I had mastered – knowledge of the mind, mental illness, computers, business, math, writing, sex and reproduction, etc. It also separated me from other people, and that was ok. I was the expert. Therapeutic relationships were like, “I understand everything about you while I sit safely behind my wall of competencies.” Relationships were like, “I will figure out what you expect of me and I will exceed it – you will find no cracks in my wall.” If there were going to be any problems, I would make sure that they were not caused by anything I did or didn't do. I was safe behind my transparent wall but at the same time, this wall had cut me off from other people. It had been a slow process to experiment with being vulnerable.

That child version of myself was so far from everything I had built. I pictured her in my mind, in a red school dress, long socks, with black pig-tails and puffy bangs. But as I looked at the image in my mind, I realized the hate was just gone. She didn't look ugly to me anymore. In fact, she reminded me of my two little brothers, who I did care about. “Can you at least have compassion for her?” the therapist asked me. Yes, I could have compassion – not love yet, but I was softening. From hate to compassion – that was a big step.

**Therapist 3: Psychiatric researcher.** A native of Detroit, MI, Therapist 3 obtained her Bachelor's degree from the University of Michigan and her Master of Divinity degree from Yale University at the Yale Institute of Sacred Music. She received intensive training in the Clinical Neuroscience Research Unit in the Yale Department of Psychiatry, and she is currently a doctoral student in clinical psychology. Her research interests include obsessive-compulsive disorder (OCD), namely contamination and religious OCD symptoms, along with common co-occurring disorders, such as PTSD and depression, and the neurological underpinnings

of these disorders. She served as a study therapist for MAPS' Phase 2 MDMA Clinical Study of treatment-resistant PTSD among people of color at UConn and is passionate about making such treatments available to underserved populations. Below Therapist 3 recounts some of the highlights of her MT-1 experience:

When I first learned that I would have the opportunity to try MDMA as part of the MT-1 study protocol, I was so scared. As a Black woman who grew up watching my communities torn apart at the hands of gang violence, the street drug market, mass incarceration, murder, etc., drugs were not a friend of mine. Not to mention the legacy and lasting impact of the War on Drugs in the Black community, along with the over-policing and history of unethical medical practice on Black bodies, I was *petrified*. I thought to myself, “You mean to tell me, they want to bring *me*, a Black female, into a clinical setting to receive a psychedelic substance?” It felt like a set-up. Were the police hiding out somewhere? Would they bother me (while doing absolutely nothing wrong, like so many others), find MDMA still in my system, and take me to jail? I didn't know. I just knew that because of the society in which we live, I did not (and still do not) feel safe. The concept was inconceivable.

On the day of my preparation session, the therapists asked, “What are your concerns or apprehensions?” I told them the truth – that I was terrified on multiple levels. We worked through that fear, but I struggled to buy into the journey. There was an immense resistance on the part of my body and my brain to trust the co-therapists or the medicine. For obvious reasons, it is easier to help others through their pain than to give adequate attention to your own.

My MT-1 experience reminded me of the ways in which I had been socialized into my own ethnic and racial identity via the appearance of familiar cultural themes. For example, I saw a particular lapa (fabric worn like a skirt in West African countries) which I recognized from my childhood African dance training. It reappeared a few different times throughout my experience and served as the most important element of one of my most impactful visions. At times, I could see myself draped in it, walking about, other times I wore it as part of a drum and dance circle, as is customary.

After what seemed like a long stretch of pain-ridden episodes, I inhaled deeply, closed my eyes, and there was nothing but darkness for a while. At that moment I felt a simultaneous terror come over me and my body. I had to lean into the unknown, which I do not like to do! But once I did, all of a sudden, I felt peace and it felt easier to breathe and like I was doing less work to escape the turmoil beneath me. When I opened my eyes, I watched myself ascend into the clear blue skies, flying above all the pain and sorrow on the ground. I didn't die or ascend into a proverbial heaven, I just started to navigate through life on a higher plane.

I was parallel to the clouds. I was so far above the ground, but I could see everything below so clearly; it was as if I had a heightened sense of vision. Beneath me was one of the lapa from my childhood, carrying me across the sky. It was a beautifully colorful and thick material. It carried me through several scenes of my ancestral history, beginning with a Southern plantation. I saw women who looked like myself and



my mother. I hadn't known them personally, but I felt inextricably connected to them. I was somehow able to reach down and pull a few of them up with me onto the lapa. The emotions were so overwhelming that no words needed to be shared. We sat together in silence as we entered the next "scene"

My MDMA experience was full of powerful themes from my culture, dancing, music, and celebration, but also painful aspects of my past, some of which I knew far too well, others I hadn't known personally but experienced through an ancestral view. Having attended an African-centered elementary school, we were taught many African proverbs and philosophies, one of which is, "Ubuntu" meaning, "I am because we are, we are, therefore I am." I was shown that I exist because my ancestors existed first. I am also here as a result of my community, my village. The collective experience is very important in Black culture and for my experience as well. Though I was alone on this trip, I felt very much supported by my family and ancestors, particularly my Black female ancestors who exhibited strength, community, and perseverance. As such, the theme of the "strong Black woman" was prevalent, but I believe it intended to show me that I am not in this alone and that my strength comes from being in community.

During integration, I was able to process some of my experiences with the co-therapists in the room with me, but much of my understanding and processing happened in the weeks, months, and even years after my dosing session. This was partly due to needing time to process, but also because I was nervous to mention some aspects of my culture which showed up, fearing that I may be misunderstood.

Overall, I have learned so much about myself and the troubled aspects of my past which I have tucked away so neatly that no one has known to inquire. I am grateful for the work of MDMA, my team, and of course, my inner-healer, but troubled by the fact that I still do not feel safe to explore psychedelics in a healing capacity. If this treatment modality is meant to be effective for Black people, the work is different: all therapists must become preoccupied with the safety of Black bodies in these trials, less they permeate even more damage, perpetuating a vicious cycle of racialized medical trauma.

## RESULTS

### Major themes

All three of the MDMA-assisted experiences included cultural themes relevant to the experience of Black women in America. A main theme from Therapist 1 focused on healing deep, racialized intergenerational wounds. On one hand, she was able to experience a blissful reality beyond her race and gender; however, she also had to learn how to sit with these political realities in an unfiltered way. She notes, "As a Black woman, I had to learn the language of this White American world, the mannerisms, and the performance. I've straightened the coils from my hair and denied parts of myself just to feel like I belonged. Those defenses that became a necessary part of my social development and helped me survive in the only world I knew no longer worked."

The themes from Therapist 2 focused on the paradoxical need for human connection and dependence, in contrast to

perceived need to be strong, efficient, and self-sufficient to "survive and thrive in a perilous and often hostile racist society controlled by White men and women." She found the idea of being vulnerable too threatening to tolerate, which cut her off from the vulnerable parts of her personality and interfered with important relationships.

The themes from Therapist 3 included transcendence, moving above the oppression and pain of everyday life to a higher plane, from which she could reach down and help others to also transcend. She was able to situate herself simultaneously within her ancestral community and her current African American experience, and thereby draw strength from her family, past and present. Nonetheless, she continued to feel a need to be vigilant and a lack of safety. She notes, "It has become apparent to me that we must be preoccupied with helping clients of color, Black clients in particular, to feel an immense sense of safety."

The primary themes emerging across the varied experiences include strength, safety, connection, and managing oppression/racialization. Challenges with vulnerability also cut across the narratives. Growth from the experience centered on understanding that having needs and experiencing feelings does not equate to weakness (prominent in narratives 1 and 2), and a renewed sense of duty to provide help and healing to one's community (prominent in narrative 3).

### Experience as a training exercise

All three therapist participants found the process of having a session of MDMA-assisted therapy, in the same manner that a client would experience it, to be helpful for better understanding the research protocol and the client experience. Navigating cultural and racial material during the MDMA sessions was also an important reminder that all participants are a product of their culture to various extents, which becomes reflected in the psychedelic experience, including past and present experiences of oppression.

The lived racial experiences and training of the facilitating therapists was salient to participant experiences, as it influenced their ability to respond to material as it was unfolding. Of the four therapists who facilitated sessions, two made statements that were culturally insensitive or microaggressive during the MDMA session, and this directly impacted two of the three Black therapist participants (Williams & Halstead, 2019). This underscored the need for multicultural training and extreme sensitivity on the part of therapists to refrain from contributing to a participant's cultural trauma by reenacting social patterns of oppression that occur in everyday interactions outside of the treatment space (Williams et al., 2020).

## DISCUSSION

### Psychedelic-assisted therapy for Black women

The material that emerged from the MDMA-assisted psychotherapy sessions was filled with themes that are particularly salient for Black women in America, including cultural



trauma, spiritual connection to ancestors, care for community, and the Strong Black Woman archetype – an intersectional conceptualization of Black womanhood. This archetype derives from slavery, when Black women had to be strong in order to survive and protect their children in a brutal environment of forced physical, emotional, and sexual servitude. The Strong Black Woman has become “a cultural ideal that portrays Black women as strong, self-reliant, nurturing, resilient, and invulnerable to psychological or physical challenges” (Baker, Buchanan, Mingo, Roker, & Brown, 2015, p. 53). Black women may struggle with how much to identify with this ideal due to its conflicting positive and negative characteristics. Although a focus on inner strength can be empowering, adopting this archetype perpetuates problems such as being overworked, undertreated for mental health needs, neglectful of self-care, and cut-off from nurturing from others. It can also interfere with the emotional vulnerability needed to forge deep, mutually reciprocal relationships.

One important avenue for understanding some of the other themes may lie in cultural differences in approaches to understanding the self. The North American concept of the person centers on individualism, where each person is considered autonomous and uniquely deserving the free pursuit of their own private goals; this “egocentric” notion of the person leads individuals to think about their identity primarily in terms of personal history and achievements (Kirmayer, 2007). However African cultures typically have more of a “cosmocentric” sense of self, and may therefore narrate their identity in relation to ancestors, spirits, or larger cosmic forces. Of course, the different ways of construing the self are not mutually exclusive, as egocentric and cosmocentric views may exist simultaneously (Kirmayer, 2007).

Nonetheless, as noted by Kpanake (2018), African cultures generally have a more spiritual and relational-oriented perspective of the self, in which an individual manifests “personhood through connections to three distinct forms of agency: (a) spiritual agency, including God, ancestors, and spirits that influence the person; (b) social agency, including the family, the clan, and the community, with extension to humanity; and (c) self-agency, which is responsible for the person's inner experience” (p. 198). These three forms of agency were all apparent in one or more of the narratives provided by participants, reflecting their meaningful and important connection to African culture.

Understanding the self from the perspective of a Black woman requires consideration of intersectionality as well. Black women often experience oppression by being both Black and a woman. They may not be able to separate these two facets of their identity into distinct pieces, but rather conceptualize themselves holistically. Without this framework, one can misunderstand or misinterpret important aspects that are salient to her experience.

### Dangers of culturally uninformed therapy

When therapists are unable to make use of cultural material it can represent a lost opportunity for healing, but it is much worse when therapists actively cause harm. It has been

recognized for some time that racially charged materials can provoke violence from clinicians in the form of micro-aggressions or other harmful actions or inactions, as therapists struggle to manage their own psychic woundedness around issues of race (Comaz-Diaz & Jacobsen, 1991; Kanter et al., 2020). Race relations in the US, Canada, and many other Western nations operate within a system whereby people of color are expected to maintain White comfort by remaining silent about past and present experiences of racial oppression (DiAngelo, 2011; Kanter et al., 2019). This expectation often extends into the mental health care frame, and it is thought to represent a major barrier to treatment for people of color, as good therapy requires an open trusting dialog. Further, in a typical outpatient mental health setting, if an African American client is harmed by a therapist, the client can use their generally well-developed defenses against racism and choose to engage at a superficial level or not at all, or even walk out. In contrast, when under the influence of a psychedelic, the client may not leave the session for several hours and may not be able to access their typical defenses to protect against emotional harm. Further, the heart-opening properties of MDMA specifically may make clients who are seeking healing from racial traumas particularly vulnerable to further emotional injury. This represents at least two distinct kinds of abuse, abuse of authority and abuse aided by an intoxicating substance (Dawson, 2019). This could be compared to the devastating experience of a client seeking healing from the trauma of rape only to be subjected to sexual advances from a therapist while in a physically vulnerable or even helpless state.

### Training for therapists and guides

Because of the extreme vulnerability of patients during psychedelic-assisted psychotherapy, all therapy providers and supervisors should have basic competencies in working ethically and skillfully with people of color. As noted by Williams et al. (2020), essential skills include, the ability to (1) identify normal cultural variations in the expression of psychopathology and personality, (2) recognize trauma related to the experiences of racism and other forms of oppression, (3) develop good rapport with people of color by appropriately expressing caring, empathy, and respect, (4) comfortably engage in discussions about racial topics, and (5) identify and examine personal biases as they relate to ethnic and racial differences, with an ongoing action plan to address any areas of difficulty. All therapy providers conducting psychedelic therapies should be competent in these areas prior to working with people from different ethnic groups. Skill in cross-racial work is critical given the very limited number of psychedelic therapists of color.

Functional Analytic Psychotherapy (FAP) is a therapeutic approach rooted in the contextual behavioral tradition (Hayes, Barnes-Holmes, & Wilson, 2012) that focuses on the therapeutic relationship as the agent of change to improve relationships (Tsai et al., 2009). FAP promotes intrapersonal awareness as well as interpersonal awareness between the client and therapist equally for a strong and authentic connection. This approach prompts FAP therapists to take interpersonal



risks by experiencing, processing, and disclosing reactions to the client as they occur in-session in the service of client growth, and it prompts therapists to encourage their clients to do the same. When the client engages in courageous self-expression in FAP sessions, the therapist in turn responds with genuine feedback to increase the intimacy of the exchange. This vulnerability and immediacy serves as a model to help the client improve connections with others, which is an important transdiagnostic outcome (Wetterneck & Hart, 2012).

In this context, inadvertent insensitivities and micro-aggressions committed by therapists present a barrier to fundamental and necessary intimate, trusting, and safe transactions. Within FAP this could become an opportunity for therapist growth around racial anxieties and client growth in successful assertion of needs, which would ideally lead to a celebration of a client's expression of their full self as an ethnic and cultural being. FAP is particularly well-suited for culturally-sensitive practice because of its focus on the relationship as a primary change mechanism, and FAP is flexible enough to be used for understanding behaviors across cultures and ethnicities (Vanderburghe, 2008). Therapists are allowed to admit that they do not have all the answers and may not fully understand the experience of racial oppression, which paradoxically bolsters trust and genuine connection with the client. And, as therapists are able to confront their own assumptions and biases, they become more culturally sensitive and attuned to feedback from their diverse clients (Miller, Williams, Wetterneck, Kanter, & Tsai, 2015). Thus, FAP may be well-suited for MDMA-assisted psychotherapy with people of color, given the focus on establishing a quality emotional connection (Luoma, Sabucedo, Eriksson, Gates, & Pilecki, 2019; Williams et al., 2020).

Since the accounts described in this paper occurred, MAPS has made efforts to further the cultural competence of its therapists, including a series of trainings for independent raters, that was recorded and subsequently made available to study therapists (Reed, 2019; Williams et al., 2020). Further, in August 2019, two of the authors organized and co-led a community conference and special training for therapists of color, which was grant-funded by the Open Society Foundation and other donors and implemented by MAPS (Williams & Labate, 2020). These are essential early steps in improving treatment for people of color, however important gaps remain. For example, at MAPS there are almost no approved supervisors able to provide culturally-informed oversight to new therapists who might require guidance in this area. Apart from MAPS, we are aware of no other sponsors or research teams attending to this aspect of the work (Williams et al., 2020), however one of the only certified training programs for psychedelic therapies, the California Institute of Integral Studies, had put some successful measures in place to increase admissions for trainees of color.

### Addressing misgivings

Some may be concerned that exposing people to psychedelics may be simply introducing a new approach for

escaping from problems as opposed to working through them in a clinical setting. People may fear this process encourages potential drug misuse among patients and clinicians by trying psychedelics in a clinical setting. Indeed, the therapist participants featured here each had private reservations about participating in MT-1 for a variety of reasons. It is important to understand that all medications have the potential for healing or abuse, depending on how they are used, and psychedelics are no exception. That being said, the data indicate that compared to other substances, psychedelics are generally safe, with low addiction potential, and even recreational use is correlated to few negative outcomes (Johansen & Krebs, 2015).

Further, psychedelic-assisted therapy is hard work and should not be considered an escape or shortcut to healing. All three therapists spent considerable time and effort processing their experiences alone and with others to integrate what was learned into their lives for personal growth and individual healing from racial stress and trauma.

### Reclaiming our cultural birthright

As described previously, there is a rich tradition of plant medicines and spirituality in Africa, and African spiritual themes were prominent in two of the three narratives. As such, people from the African diaspora may especially benefit from psychedelics within a culturally-appropriate framework. Two of the participants have started providing culturally-informed psychedelic-assisted psychotherapy as a means of treating racial trauma in an outpatient mental health clinic. In our experience, many African Americans are fearful of psychedelic medicines and the vulnerability that comes with being in an altered state. Certainly, these treatments can be unsafe without skilled providers or caring therapists to guide clients on their journeys. But these medicines are part of our cultural birthright, and African Americans deserve the same access to the healing potential of psychedelics that our ancestors have benefitted from and continue to benefit from in Africa today.

### Limitations and future directions

Because this study chose to focus on the voices of African American women, the experiences described cannot be assumed to generalize to African American males or even Black people worldwide. More research is needed to amplify the voices of people from other racial and ethnic groups and those with other marginalized identities to better understand psychedelic experiences cross-culturally. As more narratives become available, it would be interesting and important to compare them across populations to better understand how culture influences the psychedelic experience.

## CONCLUSION

There is a great potential for psychedelic therapy to address the mental health needs of people of color, who experience the same mental health needs as White people, in addition



to the reality of intergenerational cultural trauma for many ethnic groups and intersectional trauma for women of color. Barriers to safe and effective psychedelic care include a lack of clinicians who are able to navigate challenging racial material in a non-violent manner, and a lack of awareness surrounding how to optimally utilize cultural, spiritual, and historical material as it arises. These problems point to a need for more therapists of color who understand nuanced cultural issues as they pertain to specific ethnic groups, as well as better multicultural training for all therapists, which should include education about microaggressions and the therapeutic use of FAP (e.g., Kanter et al., 2020; Williams, Reed, & Aggarwal, 2020). Some important efforts in this area have begun, but much more is needed and on a larger scale.

There is an urgent need to address many unanswered questions relevant to people of color. Future studies might examine the outcomes of psychedelic therapy with and without the added therapeutic connection provided by FAP, to explore how it may reduce the prevalence and impact of covert racism during treatment (e.g., Miller et al., 2015). Work is needed to better understand and address the role of culture in set and setting for best outcomes (e.g., Neitzke-Spruill, 2020). Although this paper has focused on the psychotherapeutic experience, future research also needs to examine how different psychedelic compounds may differentially affect ethnic groups to help inform dosing and management of side-effects (e.g., Papaseit, Torrens, Pérez-Mañá, Muga, & Farré, 2018). Additionally, more work needs to be done to educate and inform people of color about psychedelic options for healing, and advocate for inclusion.

The use of psychedelics has not always been safe for Black Americans, but as psychedelics move into the mainstream there may be an opportunity for the African diaspora to come together as a people, create safe spaces, and become empowered to reclaim psychedelic healing for Black communities (Williams, 2020). Creation of new rituals and a spiritual path surrounding psychedelic healing where it is yet undefined and could be an important means of reconnecting to beneficial ancestral practices in a modern context, thus paving the way for greater access to mental health for Black people everywhere as psychedelics become legal medicines.

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## **Essay 4: Smart-Fraction Theory**

The social-equity model proposes that socioeconomic disparities between different demographic groups are due to racism by Caucasians against other races. Additionally, the social-equity model asserts that socioeconomic disparities between nations are due to European colonialism and capitalist exploitation.

Smart-fraction theory proposes that the intelligence structure of a population is the most important factor in determining the socioeconomic attainment of a nation or an ethnicity within a nation. According to smart-fraction theory, 57% of the variation in socioeconomic performance of nations is due to differences in the national average IQ, whereas 66% of the socioeconomic variation between nations is due to the intelligence level of the cognitive elite (meaning the top 5% of a country's population).

Read the Abstract and the Discussion section in the following article about smart-fraction theory [pp. 677, 692-694]. Without getting bogged down in the statistical technicalities, briefly explain in basic terms the smart-fraction theory and its implications for society. Do you think that the authors are correct? Do you believe this theory should be taught in educational institutions and used as the basis for public policy? Your essay can be as lengthy and detailed as you wish. You may go online to gather additional evidence to bolster your arguments. Please cite your sources of outside information either in your text, in footnotes, or as bracketed references in your text.

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# Smart Fraction Theory

*A Comprehensive Re-evaluation*

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## Abstract

Previous studies have found that the ability of a country's cognitive elite is generally more predictive than the average ability. However, these studies have relied on sub-optimal methods. Here, the authors tested smart fraction theory, as it is known, using a pre-residualization approach, which obviates the problem of collinearity. For outcome variables, they utilised the 51 indicators of the Social Progress Index, as well as 6 economic variables. Like in previous research, the authors operationalized the ability of the intellectual class as the 95th percentile score. Consistent with smart fraction theory, they found evidence that the ability of the intellectual class does influence outcomes over and above that of the average ability. For the 93 countries with available data, average ability explained 57% of the variation in country performance. Adding the 95th percentile score increased this to 66%. The authors discuss their findings in light of the existing literature.

## Keywords

cognitive ability – intelligence – smart fraction theory – intellectual class – general socioeconomic factor – national IQ

## Supplementary Materials

Our data, code and online appendix can be accessed at: [www.osf.io/95wtc](http://www.osf.io/95wtc)

### 1 Introduction

Countries differ substantially in their average income, just as they differ in health, educational level, scientific output, creative achievements and so on. These various indicators are mostly positively correlated, consistent with Thorndike's dictum (Thorndike, 1920) and one can speak of a country's overall performance. Indeed, factor-analyzing country rankings on diverse indicators yields a very strong general factor, which has been labeled the general socio-economic factor, or S (Kirkegaard, 2014). Cross-country differences have been apparent for hundreds of years (Smith, 1776), giving rise to a large amount research, primarily in economics (Acemoglu & Robinson, 2012; Hanushek & Woessmann, 2015; Meisenberg, 2020; Rindermann, 2018).

Of particular interest is research that focuses on broadly cognitive causes of these differences, whether they are labeled human capital, cognitive skills, learning ability, or any other term for what is roughly general intelligence.<sup>1</sup> While economists have talked about the importance of human capital for more than a century, they did not measure it well before the 1990s, when they began using scores from cross-sectional skill tests such as the International Association for the Evaluation of Educational Achievement (IEA) (Hanushek & Kim, 1995; Lee & Lee, 1995). Though it should be noted that Lerner (1983) made a significant, early contribution in an article titled *Test Scores as Measures of Human Capital and Forecasting Tools*:

If we knew what abilities people needed – to develop a modern economy or to maintain one – and could measure those abilities with enough precision to allow for meaningful comparisons between populations, over time and across space, we would have a powerful measure of human capital, and an economic forecasting tool of considerable promise. This essay is an attempt to explore the possibility that we are already in that

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<sup>1</sup> Many people have trouble talking honestly about intelligence (Gottfredson, 2004). Reeve & Basalik (2014) present detailed studies of how, in the field of epidemiology, researchers developed the concept of 'health literacy', which is essentially the same as general intelligence. Intelligence is seemingly that which must not be named.

fortunate position but have not yet seen or exploited our luck because the questions are in one field, and the answers are in another.

Contemporary research suggests a causal role for intelligence in explaining cross-national differences in economic growth. The typical approach is to estimate economic growth across some timespan, such as 1990–2010, and then utilise characteristics of the countries that are either very stable across time, or were measured before the start of the growth window. These variables are then entered into regression models in a ‘horse race’. When this is done using variables such as legal origin, landlockedness, other geographical factors, religion, history of colonization and so on, intelligence almost always comes out on top (Christainsen, 2013, 2020; Hanushek & Woessmann, 2015; Jones, 2011; Jones & Schneider, 2006; Weede & Kampf, 2002).

The entire literature described above concerns countries’ average levels of intelligence. But there is of course more to the distribution than just the mean; there is also the dispersion, the skew and other properties. The distribution of intelligence in a given country is not entirely normal, and in any case some countries have much smaller or larger variances than others. This has serious implications if the tails of the distribution matter. Jensen (1980, p. 114) proposed just such a model:

The social implications of exceptionally high ability and its interaction with the other factors that make for unusual achievements are considerably greater than the personal implications. The quality of a society’s culture is highly determined by the very small fraction of its population that is most exceptionally endowed. The growth of civilization, the development of written language and of mathematics, the great religious and philosophic insights, scientific discoveries, practical inventions, industrial developments, advancements in legal and political systems, and the world’s masterpieces of literature, architecture, music and painting, it seems safe to say, are attributable to a rare small proportion of the human population throughout history who undoubtedly possessed, in addition to other important qualities of talent, energy, and imagination, a high level of the essential mental ability measured by tests of intelligence.

In fact, Jensen was probably influenced in this regard by Terman (1916):

The number of children with very superior ability is approximately as great as the number of feeble-minded. The future welfare of the country hinges, in no small degree, upon the right education of these superior

children. Whether civilization moves on and up depends most on the advances made by creative thinkers and leaders in science, politics, art, morality, and religion. Moderate ability can follow, or imitate, but genius must show the way.

He may have also been influenced by Weyl (1970):

Thus, very small changes in the average psychometric intelligence of a society can cause it either to become richly endowed with creative and gifted people or to suffer from a dearth of talent. This is the most probable explanation of the fact that, throughout most of history, genius and creativity have tended to be concentrated in the hands of a few nations and peoples.

Jensen proposed that the high end (right tail) of a society's intelligence distribution is important for its scientific and technological progress because of the skewed distribution of creative achievements, which roughly follows a power law (C. A. Murray, 2003; Redner, 2004). Neither Jensen, Terman nor Weyl sought to test this idea, as far as the authors are aware, but it was later taken up by the pseudonymous blogger La Griffe du Lion, who published a 2002 article titled *The Smart Fraction Theory of IQ and the Wealth of Nations* (La Griffe du Lion, 2002). While his particular model (a sigmoid function for GDP per capita) has not received much support, the general approach has been quite influential. The idea was arguably due for revival, and in recent years has been pursued under the names of cognitive elite and intellectual class models (Rindermann, 2012; Rindermann et al., 2009).

However, previous studies on smart fraction theory have not used the most appropriate statistical methods. They almost always involve fitting some regression model or structural equation model that includes either the average ability level or the 95th ability level, and then comparing their standardized betas. This approach has presumably been taken because it is not feasible to include both variables in the same model, as they are correlated at more than .9. And insofar as we are dealing with nation states, the sample size is rarely above 120, and thus differences of, say, .05 between two correlations are never statistically significant. The only feasible approach here would be to pool such correlations across many specifications, and compare the means of these distributions. To our knowledge, this has not been done either.

Instead, various authors have tested their preferred hypotheses in a largely unsystematic fashion (Azam, 2017; Burhan, Che Razak, Rosli, et al., 2017; Burhan, Che Razak, Salleh, et al., 2017a, 2017b; Burhan, Razak, Ibrahim, et al.,

2018; Burhan, Razak, Rahman, et al., 2018; Coyle et al., 2016; Rindermann, 2012, 2018; Rindermann et al., 2009, 2009, 2011, 2015; Rindermann & Carl, 2018, 2020; Rindermann & Thompson, 2011). The only study that, to our knowledge, directly pitted the mean ability against the 95th ability was Rindermann & Thompson (2011). Their model results highlight the weakness of this method: their estimate for the mean ability was  $- .39$  (a highly implausible negative effect).

Thus, the purpose of our study was two-fold: first, to examine a comprehensive set of outcome measures in a single analysis with consistent methodology; and second, to test smart fraction theory using more appropriate statistical methods.

## 2 Data

*Cognitive ability.* We used data from Heiner Rindermann's book *Cognitive Capitalism*, which was based on a large compilation of achievement tests from studies by IEA, TIMSS, PISA, PIRLS etc., and which includes estimates for the 5th, 50th/mean, and 95th percentiles. We used the corrected estimates, which are adjusted for differences in age and the representativeness of samples. This dataset includes results for 99 countries. We also included Lynn and Vanhanen's 2012 dataset for some additional analyses. Although it has received a large amount of criticism (Wicherts et al., 2010a,b), the dataset has been validated through an independent recalculation by David Becker (Kirkegaard, 2019b; Lynn & Becker, 2019). The new (continuously updated) dataset is available at [www.viewoniq.org](http://www.viewoniq.org). However, since the recalculated version is not yet as comprehensive as the 2012 version, we used the latter.

To avoid the problem of extreme collinearity between average ability and intellectual class ability, we used a pre-residualization approach.<sup>2</sup> That is, we regressed the 95th percentile score on the average score, and then utilised the standardized residuals as our predictor. This variable captures the degree to which the 95th percentile score is higher or lower than one would expect, based on the average score. Since it is (by definition) uncorrelated with the average score, both can be entered into the same regression model. It should be noted that the sampling error of percentiles depends on the distance to the

<sup>2</sup> Our approach is thus very similar to what is sometimes called hierarchical/sequential regression or cascade modelling (Figueiredo et al., 2013), where predictors are entered into the model in stages, and the predictors at a later stage are only able to explain the residual variance from the prior stage. In this framework, ours is a 2 step model, where we first enter the mean ability, and then the 95th ability level.

mean. We carried out numerical simulations, and found that at a sample size of  $n = 500$ , the sampling error for the 5/95th percentile is approximately 70% greater than the 50th. Figures 1a–b show the global distribution of the average and intellectual class ability levels.

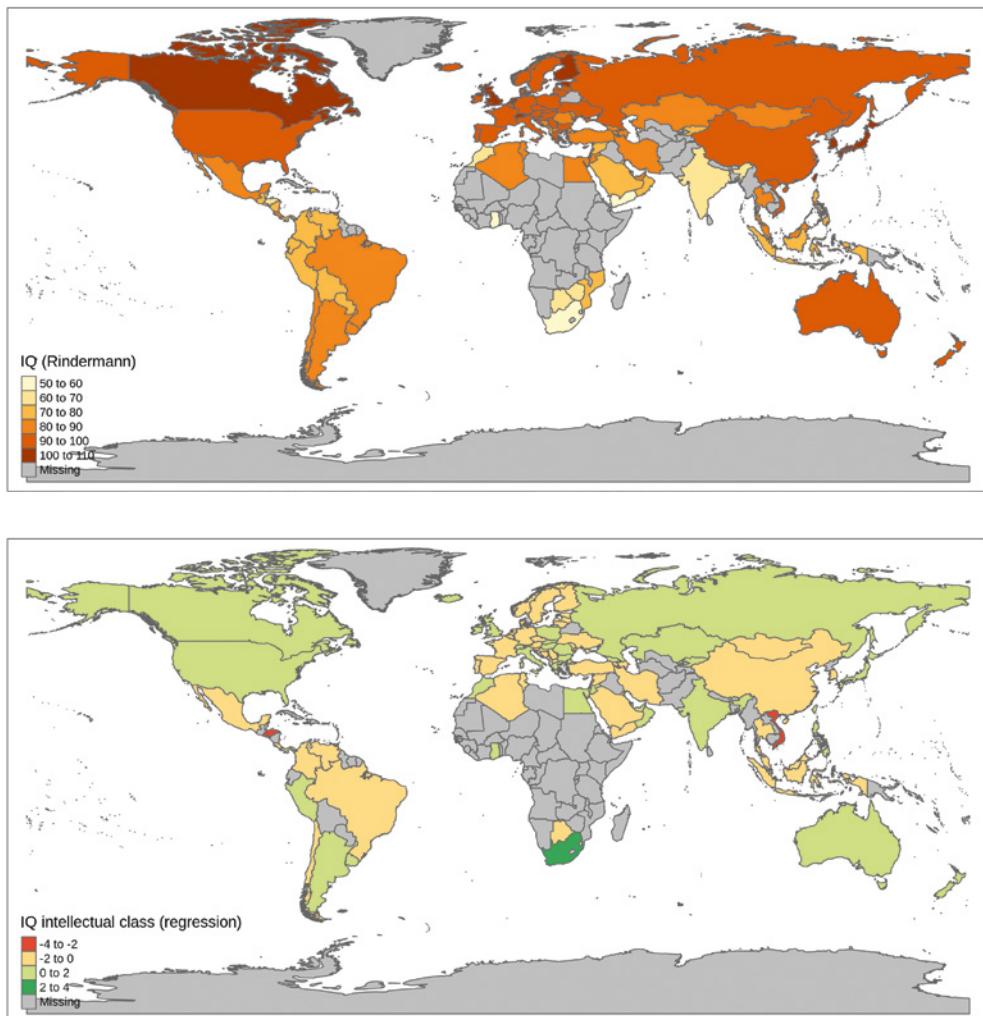


FIGURE 1A–B World maps of average and residualized intellectual class ability. Data from Heiner Rindermann's *Cognitive Capitalism*. For a small number of countries, average scores were available but not 95th percentile scores (due to the fact that some of the sources used by Rindermann only included estimates for the average score). This is why some countries are colored in the first map and not the second.

We would expect positive values for countries that are known to have an 'elite' subgroup, such as South Africa (which in fact the largest positive value at 3.67). We would expect negative values for countries with a lot of 'brain drain', which depletes elite numbers, and positive values for the receiving countries ('brain gain'). Examples include brain drain from Europe to the United States, and brain drain from Vietnam (Cromwell, 2016). Generally speaking, one would expect highly intelligent people to migrate to countries that have high returns to skill (Broecke, 2016). That being said, not all the values seem to make sense. For example, Bulgaria has a quite high score (1.34), despite facing some brain drain to richer EU countries.

Note: there is also the direct residualization approach, which consists of simply subtracting the average from the percentile score. This approach is inferior to residualizing via regression analysis, since it is not guaranteed to produce uncorrelated predictors, and will in fact only do so when the shape of the distribution does not vary across average levels of ability. Figure 2 shows the relationship between the direct residualisation metric and the average ability.

As the chart indicates, countries with lower average ability have much stronger IQ advantages for the 95th percentile over the mean. This strong

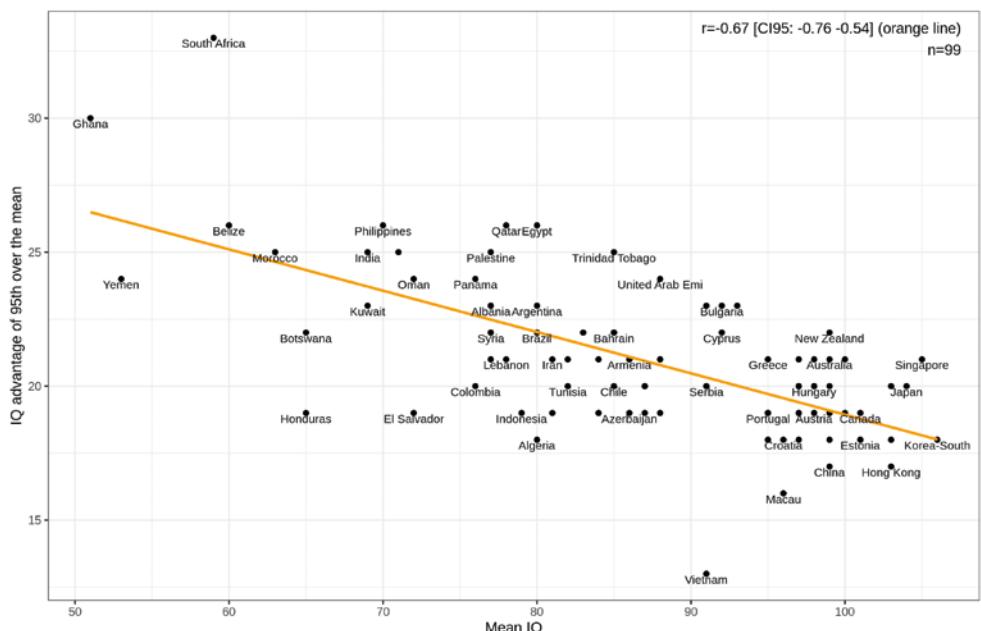


FIGURE 2 Relationship between intellectual class ability and average ability, using the direct residualization method for intellectual class ability.

correlation presents a problem, because of the uncertainty of its origin, and the ensuing statistical problems. In principle, the pattern could result from a ceiling effect such that high performers in countries with high average ability were unable to demonstrate their true ability level. However, the datasets used by Rindermann don't show ceiling effects (only a small percentage of students attain the maximum score), so this is unlikely. We chose to proceed using the residualized measure of intellectual class ability obtained from regression analysis. We also saved a residualized measure of 'lower class' ability, corresponding to the 5th percentile score. However, we carried out some robustness tests using the direct approach as well.

Additional tables and figures are provided in the online appendix. Table S1 lists countries by the the average ability, 95th percentile score, 5th percentile score, and the two residualised variables. Figure S1 shows the relationship between 'lower class' ability and average ability, using the direct residualization method for 'lower class' ability. Figure S2 shows a scatterplot and correlation matrix for the main variables in our study.

*National Performance.* We used the latest dataset for the Social Progress Index (SPI, [www.socialprogress.org](http://www.socialprogress.org)). This is a comprehensive alternative to the Human Development Index (HDI), developed by the United Nations (<http://hdr.undp.org/en/content/human-development-index-hdi>). The HDI is based on 3 domains (Life expectancy at birth, expected years of schooling/mean years of schooling, and gross national income (GNI) per capita). By contrast, the SPI is based on 51 indicators covering most aspects of society (e.g. political freedom, media freedom, civil rights, corruption, health, scientific output). The SPI dataset covers almost all countries, although some only sparsely. The SPI was expressly developed as a dataset without economic indicators. To rectify this omission, we supplemented the dataset with GNI per capita and GDP per capita, as well as growth in these indicators for the period (1990–2019). Data were taken from the World Bank (<https://data.worldbank.org/indicator/NY.GNP.PCAP.PP.CD>, <https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD>). We also added median personal and household income from Gallup surveys (Phelps & Crabtree, 2013). All the economic variables were log (base 10) transformed due to extreme skew, as is the norm.

We imputed missing data for countries that were missing up to 10 indicators ( $n = 173$ ), and excluded those remaining from our analyses.<sup>3</sup> We utilised the 2018 release of human development index from the United Nations (<http://hdr.undp.org/en/composite/HDI>) for some comparisons.

<sup>3</sup> Imputation was done using the IRMI algorithm as available in the VIM package (Templ et al., 2015).

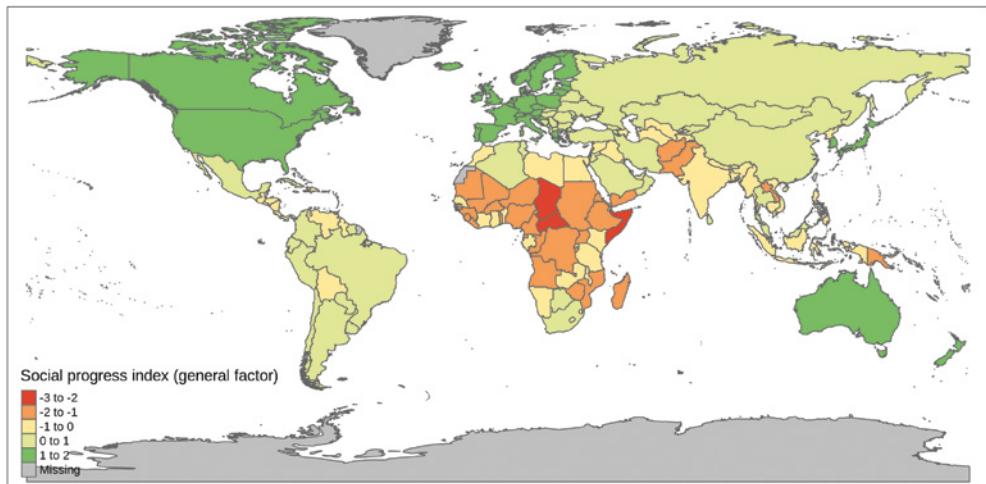


FIGURE 3 World map of Social Progress Index general factor scores.

As in Kirkegaard (2014), we factor analyzed the SPI indicators to obtain a single composite score for each country taking all the indicators into account. This factor accounted for 49% of the variance. Figure 3 shows a map of these scores. We interpret this not as a latent causal factor, but as a convenient summary score of a complex causal network. To see if the SPI creators' decision to exclude economic variables made any difference, we also factor analyzed the joint set of the SPI and economic variables. However, the factor scores from the two analyses correlated at .997, indicating unity. Thus, whether one excludes economic variables on theoretical or political grounds, it makes no difference (indifference of the indicator).

*Spatial Data.* We used spatial data covering all nations of the world from [www.thematicmapping.org/downloads/world\\_borders.php](http://www.thematicmapping.org/downloads/world_borders.php). For countries' geographic positions, we utilised the latitude and longitude of their capitals on the assumption that this was the largest population centre and hub for economic activity. We also computed country centroids, but these produced near-identical results, so we do not report them here (they are given in supplementary materials).

In line with prior research, we used the square root of population sizes as weights (Fuerst & Kirkegaard, 2016). This gives more weight to larger countries, without making smaller countries entirely irrelevant. We also ran unweighted models, and found that the results were very similar. These are included in the supplementary materials.

The analyses were done in R 4.2.0 (2022-04-02). All code and data files can be found at [www.osf.io/95wtc](https://www.osf.io/95wtc). The statistical output is also available at [www.rpubs.com/EmilOWK/cognitive\\_elite\\_2019](https://www.rpubs.com/EmilOWK/cognitive_elite_2019) for ease of use.

### 3 Results

#### 3.1 Correlation Distributions

As discussed in the introduction, the typical way of testing smart fraction theory is to run separate models for the average ability and the intellectual class ability, and then to compare their effect sizes. Usually, these are slightly larger for intellectual class ability. We repeated this approach here, for the sake of comparison. Thus, we began by correlating each of our three intelligence measures (5th, average and 95th percentile scores) with the 51 indicators of the SPI. We then took the mean value as an overall measure of predictive validity. This was done for both weighted and unweighted correlations, since some have argued that weights should be used, whereas others prefer not to use them. Results are shown in Table 1.

Consistent with prior research, we found marginally stronger correlations for the 95th percentile score, as compared to the mean. Paired t-tests indicate these differences are unlikely to be due to chance ( $p < .0001$ ). Hence, this approach supports the smart fraction model, though the effect size is very small (correlations were .023 higher on average). When we repeated the analysis without weights, the correlations were slightly weaker.

#### 3.2 General Factor of the Social Progress Index

For our main analyses, we ran four models of the general factor of the Social Progress Index: the first including only the average score; the second including the average and the 95th percentile residual; the third including the average and the 5th percentile residual; and the fourth including all three. We did this for the residualized variables obtained from regression analysis, as well as those obtained via direct residualisation. Table 2 shows the results.

TABLE 1 Summary statistics of correlations across 51 indicators of the Social Progress Index, weighted by the square root of population size. MAD = mean absolute Deviation.

	Mean	Median	SD	MAD	Min	Max
Mean IQ	0.48	0.51	0.22	0.23	0.01	0.86
95th percentile	0.51	0.53	0.20	0.19	0.02	0.87
95th percentile resid.	0.10	0.11	0.16	0.18	-0.35	0.40
5th percentile	0.46	0.50	0.22	0.22	0.00	0.85
5th percentile resid.	-0.06	-0.08	0.11	0.12	-0.25	0.24

TABLE 2 Estimates from models of the general factor of the Social Progress Index. Weighted by square root of population size. Standardized betas, with standard errors in parentheses.

	SPI model 1	SPI model 2	SPI model 3	SPI model 4
<i>Regression residualization</i>				
Mean IQ	0.77 (0.069***)	0.80 (0.062***)	0.78 (0.067***)	0.80 (0.062***)
95th percentile resid.		0.29 (0.060***)		0.35 (0.084***)
5th percentile resid.			-0.20 (0.081)	0.10 (0.106)
R <sup>2</sup> adj.	0.571	0.656	0.595	0.656
N	93	93	93	93
<i>Direct residualization</i>				
Mean IQ	0.77 (0.069***)	1.06 (0.087***)	0.74 (0.068***)	1.13 (0.113***)
95th percentile resid.		0.39 (0.080***)		0.46 (0.113***)
5th percentile resid.			-0.21 (0.083)	0.10 (0.108)
R <sup>2</sup> adj.	0.571	0.656	0.595	0.656
N	93	93	93	93

\* =  $p < .01$ , \*\* =  $p < .005$ , \*\*\* =  $p < .001$

The two sets of models yielded very similar results. In fact, the R<sup>2</sup> adjusted values for corresponding models are identical. The patterns of  $\beta$ 's are also very similar: the average score has the largest effect,<sup>4</sup> while the effect size of the 95th percentile score is 60–70% smaller; and the 5th percentile score never reaches  $p < .01$ . Note, however, that the effect sizes for the average score and the 95th percentile score are not directly comparable, owing to the residualisation of the latter. To test for incremental validity, we therefore compare R<sup>2</sup> adjusted values with and without the residualised variable in the model.

Overall, these results support smart fraction theory: intellectual class ability has incremental predictive validity over and above the mean, and it is of appreciable magnitude. Formal likelihood ratio model comparisons support this conclusion, namely that the 95th percentile residual adds validity ( $p < 0.001$ ),

<sup>4</sup> Note: by 'effect', we mean 'statistical effect', rather than 'causal effect'.

while the 5th percentile residual adds little (models 1 vs. 3 have borderline  $p$  values around .02, while those for models 2 vs. 4 have  $p$  values > .30).

Incidentally, we also ran models *without* residualising lower class ability and intellectual class ability. These are reported in Table S2 in the online appendix. When both the average score and the 95th percentile score were included in the same model, the coefficient on the average score was negative. This illustrates the collinearity problem that we discussed in the introduction.

### 3.3 Indicators of the Social Progress Index

For our secondary analyses, we took a multi-outcome approach. We again ran four regression models for each SPI indicator, as in the previous section. We saved the adjusted R<sup>2</sup> values for these models, and carried out likelihood ratio tests for model comparisons. As a summary measure, we computed the mean adjusted R<sup>2</sup> of models across outcomes, as well as the proportion of model comparison tests that reached  $p < .01$ . Results are shown in Table 3.

We found that the average adjusted R<sup>2</sup> value was higher when the 95th percentile residual and 5th percentile residual were included (both  $p < 0.001$ ), but that the effect of adding the 95th percentile residual was larger. The formal NHST tests gave the same result. In particular, adding the 95th percentile residual had  $p < .01$  in 39% of model comparisons, compared to only 8% for the 5th percentile residual, and just 6% when the 5th percentile residual was added to the 95th percentile model. Thus, we find consistent evidence that the 95th percentile residual has incremental predictive validity. These results were generally robust to the omission of individual countries (see Figure S3 in the online appendix).

TABLE 3 Regression model comparisons. Weighted by square root of population size.  
Model 1 = mean IQ; model 2 = mean + 95th percentile residual; model 3 = mean + 5th percentile residual; model 4 = mean + 5th + 95th percentile residual.

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>
Mean adjusted R <sup>2</sup>	0.272	0.313	0.285	0.316
Model comparison		% $p < .01$ vs. model 1	% $p < .01$ vs. model 1	% $p < .01$ vs. model 2
Percentage		39.2%	7.8%	5.9%

TABLE 4 Regression model comparison results for economic outcomes. Model 1 = mean IQ; model 2 = mean + 95th percentile residual; model 3 = mean + 5th percentile residual; model 4 = mean + 5th + 95th percentile residual.

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>
Mean adjusted R <sup>2</sup>	0.370	0.440	0.394	0.434
Model comparison		% p < .01 vs. model 1	% p < .01 vs. model 1	% p < .01 vs. model 2
Percentage		83.3%	16.7%	0.0%

### 3.4 *Economic Outcomes*

In addition to testing the 95th percentile score's incremental validity across the SPI indicators, we also examined its incremental validity for the 6 economic indicators. This was done to see if the same patterns held for strictly economic variables. Table 4 shows the results. The overall pattern is the same as for the SPI indicators, suggesting that the results will generalize to essentially any country ranking indicator.

### 3.5 *Other Outcomes*

We also decided to investigate specific claims from the literature. Kirkegaard (2019a) suggested that intellectual class ability could help to explain certain outliers in the relationship between national IQ and performance in international mental sports. Rindermann (2011) made a similar argument concerning winners of the International Mathematical Olympiad (IMO). Finally, Rindermann (2018) presented results for a number of safety indicators, and reasoned that safety is mainly maintained by engineers in the right-tail of the intelligence distribution. (Even though many car accidents are caused by inattentive drivers, it is possible to avoid some of these deaths by enforcing strong safety features in cars, having roads with very clear signs, etc.)

We fit two models for each outcome, one with the mean, and one with the mean and the 95th percentile residual. Table 5 shows the results. Of the six tests, four were  $p < 0.01$  and one was  $p < 0.05$ . Thus, Rindermann's hypothesis concerning safety indicators was supported, but the other two claims remain tentative. It is somewhat surprising that the 95th percentile score did not reach significance at the 1% level in the first two models. This may be due to lack of power.

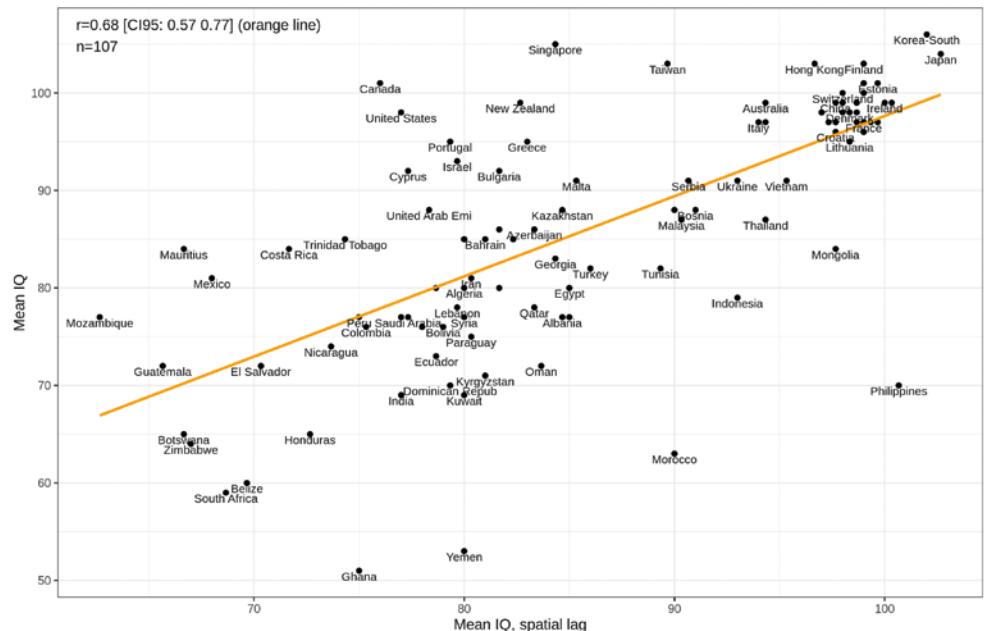
TABLE 5 Regression results for tests of models in the literature. Weighted by square root of population size. Standardized betas, with standard errors in parentheses.

	Mental sports ability	Math Olympiad	Air safety	Road safety	Occupation safety	Technology safety
<i>Model 1</i>						
Mean IQ	0.81 (0.071***)	0.48 (0.106***)	0.57 (0.148***)	0.47 (0.089***)	0.58 (0.080***)	0.61 (0.077***)
Adjusted R <sub>2</sub>	0.574	0.190	0.285	0.227	0.359	0.393
<i>Model 2</i>						
Mean IQ	0.83 (0.070***)	0.49 (0.106***)	0.68 (0.139***)	0.51 (0.085***)	0.63 (0.069***)	0.65 (0.066***)
95th percentile	0.15 (0.068)	0.10 (0.098)	0.44 (0.150*)	0.28 (0.083***)	0.38 (0.067***)	0.39 (0.063***)
resid.						
Adjusted R <sub>2</sub>	0.590	0.191	0.422	0.307	0.521	0.563
Model comparison p	0.0294	0.288	0.00349	<0.001	<0.001	<0.001

\* =  $p < .01$ , \*\* =  $p < .005$ , \*\*\* =  $p < .001$

### 3.6 Spatial Analyses

It has been pointed out several times that national IQ data have a spatial component and are thus to some extent autocorrelated (units close to one another are more similar than chance; Chakraborty, 2011; Eff, 2004; Gelade, 2008; Hassall & Sherratt, 2011). Indeed, previous studies have found that national and subnational region units show moderate to strong spatial autocorrelation. We examined spatial autocorrelation using what might be called k nearest spatial neighbor regression: for each variable, we averaged the value for the three closest neighboring countries. To quantify each country's location, we tried both the capital's co-ordinates, and the country's centroid. However, these two methods produced almost identical results. Spatial autocorrelation was generally strong and averaged  $r = .61$  across the variables in this study. Figure 4 shows an example scatterplot for average ability.



**FIGURE 4** Spatial prediction (lag) of mean intelligence. Predictions were made by averaging the IQs of the 3 nearest neighbouring countries.

In light of these results, we re-ran the regression models above but added a spatial lag for the outcome variable. The pattern of results was generally unchanged. In the case of the SPI indicator regressions, we see that the models with the 95th percentile and 5th percentile residuals had higher adjusted R<sub>2</sub>s than the model that only included the average score. Formal model comparison tests support this observation. We find that 39% of the comparisons find nominal evidence ( $p < .01$ ) of incremental validity for the 95th percentile residual, but only 8% for the 5th percentile residual, and below-chance levels of 2% when the 5th percentile residual was added to the 95th percentile model. We also ran models of the SPI general factor, as shown in Table 6.

The adjusted R<sup>2</sup>s are generally stronger when the spatial lag is included (cf. Table 2), and the  $\beta$ 's for average IQ are reduced by about 25%, suggesting some confounding in the original results owing to unobserved spatial autocorrelation. However, we still found that adding the 95th percentile residual improved the model fits considerably, as confirmed by the formal test ( $p < .001$ ).

TABLE 6 Estimates from models of the general factor of the Social Progress Index. Spatial lag included. Weighted by square root of population size. Standardized betas, with standard errors in parentheses.

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>
Spatial lag	0.33 (0.076***)	0.31 (0.067***)	0.31 (0.075***)	0.32 (0.067***)
Mean IQ	0.57 (0.078***)	0.62 (0.069***)	0.60 (0.077***)	0.61 (0.069***)
95th percentile resid.		0.28 (0.054***)		0.37 (0.075***)
5th percentile resid.			-0.17 (0.076)	0.16 (0.096)
R <sup>2</sup> adj.	0.641	0.719	0.655	0.725
N	93	93	93	93

\* = p < .01, \*\* = p < .005, \*\*\* = p < .001

#### 4 Discussion

A sizable empirical literature suggests that intelligence (cognitive/scholastic ability, 'skills', 'school ability', and other euphemisms) has a causal role in cross-national differences in wealth and other important outcomes (Hanushek & Woessmann, 2015; Jones & Schneider, 2006; Rindermann, 2018), which is consistent with findings at the individual level (Belsky et al., 2018; Domingue et al., 2015; Hegelund et al., 2019; C. Murray, 2002). An influential hypothesis derived from this cognitive meritocratic model says that it's not only average ability that matters, but also ability in the left and right-hand tails.

According to smart fraction theory, the thickness of the right tail is particularly important (La Griffe du Lion, 2002; Rindermann et al., 2009). This theory is based on the observation that human accomplishments generally follow a power law-like distribution, where a small minority of highly intelligent people contributes most of the inventions, scientific research, and wealth creation. In this study, we undertook a comprehensive reevaluation of this theory, covering more than 60 different outcome variables, as well as multiple specifications. Regardless of how we analyzed the data, there was evidence that the intellectual class ability had incremental validity over and above the average ability. This was the case for both new outcome variables and ones that had been previously studied.

Unfortunately, the relative importance of average ability vs. intellectual class ability is hard to gauge as the two variables were correlated at .98 in our sample. This degree of collinearity means that one would need a very large sample size to disentangle their effects using a typical regression approach. Instead, we used a pre-residualization approach that gave explanatory primacy to average ability, i.e., we utilised the residuals from a regression of intellectual class ability on average ability. These values quantify how high a country's 95th percentile score is compared to its average score. A high value indicates that a country has relatively more smart people than would be expected from its mean ability.

This can happen when the population of a given country comprises two subpopulations with different average intelligence levels, such as in various African countries where European or Asian minorities dominate the business sector (Lynn, 2008). An alternative approach is to simply subtract the average score from the 5th and 95th percentile scores (which yields a negative residual for 5th percentile). We found that this approach yielded similar results to our preferred method (cf. Table 2), though the standardized betas were slightly larger. Insofar as residualisation (whether direct or based on regression analysis) is informative as to the relative importance of the average and intellectual class ability, our results suggest that the latter is about 30–40% as important as the former.

Our finding that intellectual class ability has incremental validity over and above average ability suggests that funding *elite* education may be the most effective way to boost national performance. However, elite schools are increasingly unpopular in the West, as their student bodies often show large ethnic or racial disparities (Warne, 2022). For example, in the United States, Asians are typically overrepresented, while blacks are underrepresented. This makes them common targets for either defunding or affirmative action, the latter undermining the purpose of elite education.

*Limitations.* First, we used regression models to test whether the effect of intellectual class ability had incremental validity when controlling for average ability. This approach assumes lack of measurement error in our measures (Westfall & Yarkoni, 2016), which is of course false. However, given that our estimates of average ability were based on a large number of samples from many years, they should be fairly reliable. And since our estimates of the 5th and 95th percentile scores are less precise (i.e., have larger standard errors) than our estimates of the average score, the latter will have absorbed more predictive validity, making it more difficult to find evidence for smart fraction theory. The fact that we do find consistent evidence for this theory suggests the issue of measurement error is not too serious.

Second, the test-score datasets from Rindermann's *Cognitive Capitalism* only cover approximately 100 countries. This is because the remaining countries of the world have not taken part in the various scholastic achievement surveys (PISA etc.). Most of the non-participating countries are less economically developed. This leads to range restriction in our data, which may have decreased the size of our estimates. One way to crudely estimate the size of this problem is to compare the standard deviation in our sample to that for the entire world. To do this, we used Lynn's 2012 dataset, which provides average ability scores for 195 country-like units, including 97 of the 99 countries in Rindermann's dataset.

We computed the weighted SD for the entire world sample, as well as the subset of countries used in our study. These values were 10.9 IQ and 8.05, respectively, giving a ratio of 0.74. The ratio was even larger for the dependent variable (SPI), where the SDs were 1 and 0.625. Thus, we expect that our reported standardized coefficients are underestimates. However, we cannot rule out that the pattern of results would have been different if more countries had been included. One concern in this regard is shown in Figure 2, where there is a negative relationship between average ability and the IQ advantage of the intellectual class. Since most of the countries missing from our dataset have low average ability, we are not seeing the full variation in 95th percentile scores.

Third, while our finding that the 95th percentile score had incremental validity was robust to controlling for a spatial lag, it might disappear or be greatly diminished if we added other control variables. Note, however: the use of a spatial lag partially controls for a wide range of possible confounders. This is because essentially all variables show substantial autocorrelation at the national level, part of which is captured by a spatial lag.

Fourth, the test-score datasets taken from Rindermann (2018) are based on tests of achievement, rather than of cognitive ability per se. Therefore, the pattern shown in Figure 1A–B may partly reflect differences in *other* characteristics that influence student achievement, such as work ethic. It is important to keep this in mind when interpreting the results.

We sought to establish the basic statistical result of consistent incremental validity before tackling the more difficult question of estimating the correct multivariate model. Future research should replicate the study by Jones & Schneider (2006), who used Bayesian model averaging to evaluate the relative predictive validity and stability of a large set of variables. Their model could be extended by analysing multiple outcome variables, which would make it a meta-meta-analysis approach to regression modelling.

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Online appendix for

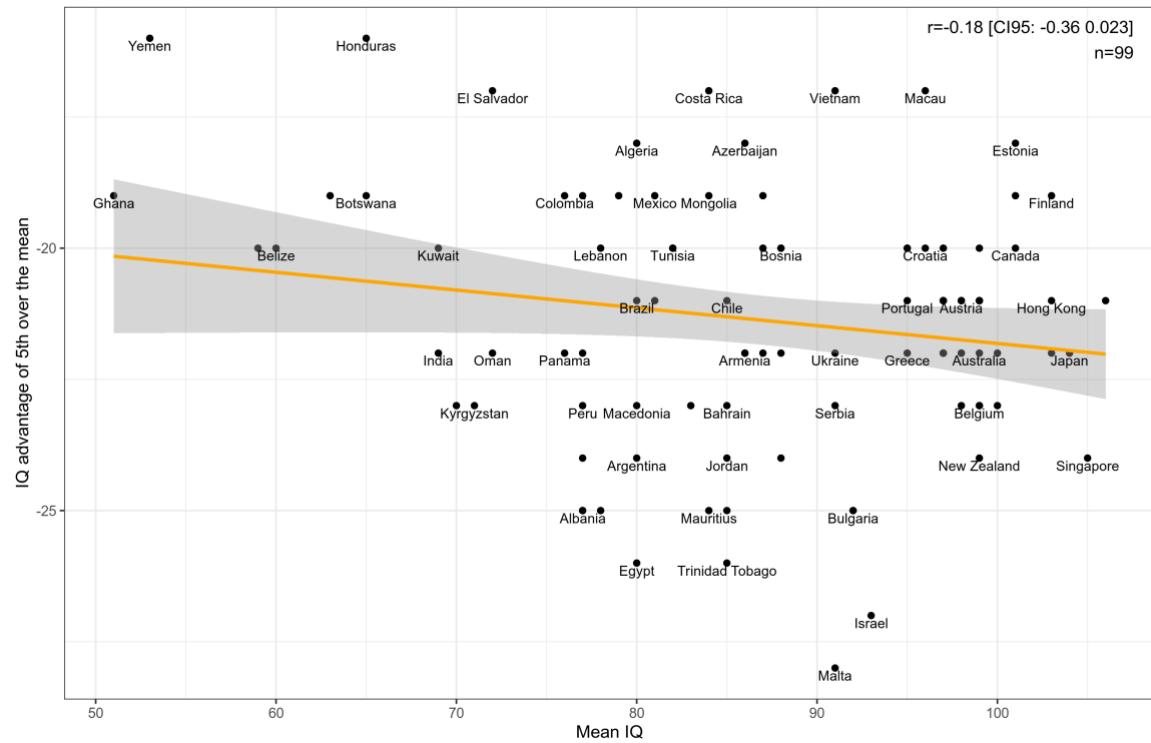
# Smart fraction theory: A comprehensive re-evaluation

**Table S1.** Countries by average ability, 5th percentile ability, 95th percentile ability, and residualised variables.

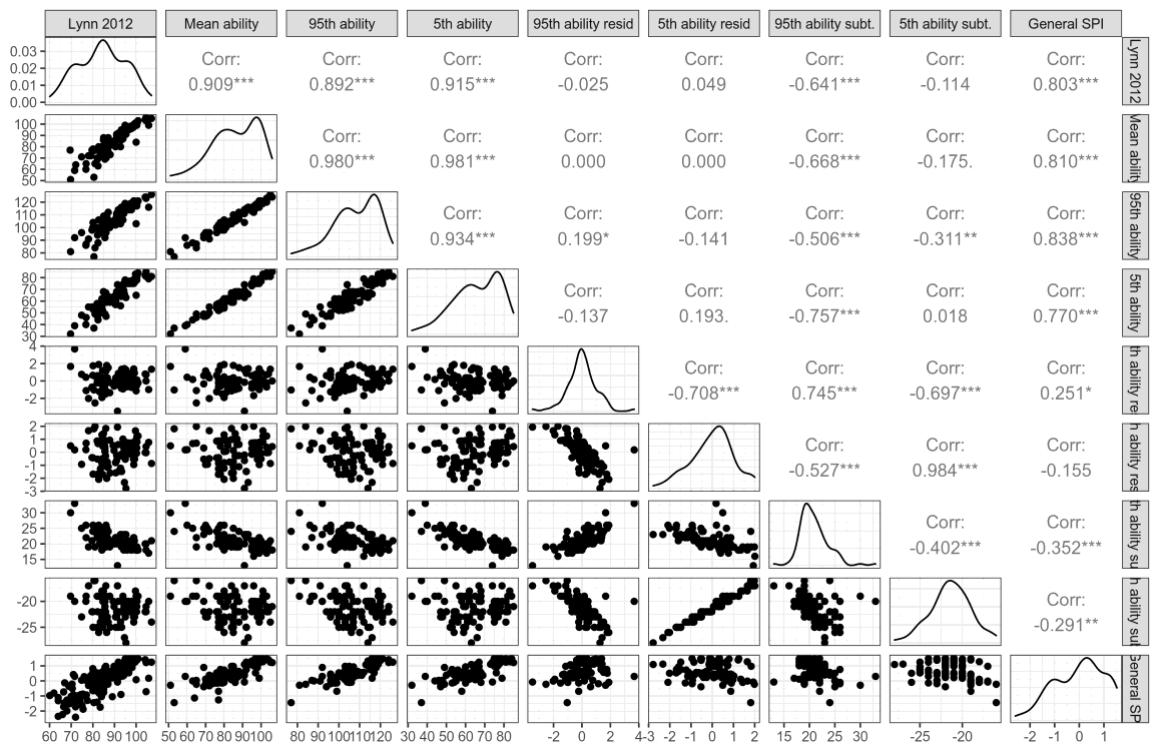
ISO code	Country name	Average ability	95 <sup>th</sup> percentile score	5 <sup>th</sup> percentile score	Residualised 95 <sup>th</sup> percentile score	Residualised 5 <sup>th</sup> percentile score
ALB	Albania	77	100	52	0.25	-1.70
DZA	Algeria	80	98	62	-1.91	1.35
ARG	Argentina	80	103	56	0.46	-1.23
ARM	Armenia	86	107	64	-0.05	-0.28
AUS	Australia	99	120	77	0.91	-0.09
AUT	Austria	98	117	77	-0.12	0.32
AZE	Azerbaijan	86	105	68	-0.99	1.43
BHR	Bahrain	85	107	62	0.36	-0.73
BEL	Belgium	99	118	76	-0.04	-0.52
BLZ	Belize	60	86	40	0.42	0.20
BIH	Bosnia	88	107	68	-0.85	0.60
BWA	Botswana	65	87	46	-1.11	0.70
BRA	Brazil	80	102	59	-0.01	0.06
BGR	Bulgaria	92	115	67	1.34	-1.48
CAN	Canada	101	120	81	0.10	0.79
CHL	Chile	85	105	64	-0.59	0.13
CHN	China	99	116	79	-0.99	0.76
COL	Colombia	76	96	57	-1.25	0.86
CRI	Costa Rica	84	103	67	-1.14	1.83
HRV	Croatia	96	114	76	-0.74	0.72
CYP	Cyprus	92	114	67	0.87	-1.48
CZE	Czech Republic	99	118	78	-0.04	0.34
DNK	Denmark	98	117	77	-0.12	0.32
EGY	Egypt	80	106	54	1.89	-2.09
SLV	El Salvador	72	91	55	-2.02	1.66
EST	Estonia	101	119	83	-0.37	1.65
FIN	Finland	103	121	84	-0.22	1.25
FRA	France	97	116	76	-0.19	0.31
GEO	Georgia	83	105	60	0.21	-0.76
DEU	Germany	99	118	76	-0.04	-0.52
GHA	Ghana	51	81	32	1.66	0.50
GRC	Greece	95	116	73	0.61	-0.15
HND	Honduras	65	84	49	-2.53	1.99
HKG	Hong Kong	103	120	82	-0.70	0.39
HUN	Hungary	98	118	76	0.36	-0.11
ISL	Iceland	97	117	76	0.29	0.31
IND	India	69	94	47	0.61	-0.53
IDN	Indonesia	79	98	60	-1.51	0.90
IRN	Iran	81	102	60	-0.41	0.07
IRL	Ireland	99	119	78	0.43	0.34
ISR	Israel	93	116	66	1.42	-2.33
ITA	Italy	97	118	75	0.76	-0.12
JPN	Japan	104	124	82	0.80	-0.02
JOR	Jordan	85	107	61	0.36	-1.16
KAZ	Kazakhstan	88	109	68	0.10	0.60
KOR	Korea-South	106	124	85	-0.01	0.44
KWT	Kuwait	69	92	49	-0.34	0.33
KGZ	Kyrgyzstan	71	96	48	0.76	-0.93
LVA	Latvia	97	115	77	-0.66	0.74
LBN	Lebanon	78	99	58	-0.63	0.46
LIE	Liechtenstein	99	117	78	-0.52	0.34
LTU	Lithuania	95	113	75	-0.81	0.71
LUX	Luxembourg	98	118	75	0.36	-0.54
MAC	Macau	96	112	79	-1.69	2.01
MKD	Macedonia	80	102	57	-0.01	-0.80
MYS	Malaysia	87	107	67	-0.45	0.59
MLT	Malta	91	114	63	1.27	-2.78
MUS	Mauritius	84	105	59	-0.19	-1.60
MEX	Mexico	81	100	62	-1.36	0.93
MDA	Moldova	87	107	65	-0.45	-0.27
MNG	Mongolia	84	103	65	-1.14	0.98
MNE	Montenegro	86	107	64	-0.05	-0.28
MAR	Morocco	63	88	44	0.17	0.67
NLD	Netherlands	101	119	82	-0.37	1.22
NZL	New Zealand	99	121	75	1.38	-0.95
NOR	Norway	97	116	75	-0.19	-0.12
OMN	Oman	72	96	50	0.35	-0.49
PSE	Palestine	77	102	52	1.19	-1.70
PAN	Panama	76	100	54	0.65	-0.43
PER	Peru	77	100	54	0.25	-0.84
PHL	Philippines	70	96	47	1.16	-0.94
POL	Poland	97	117	76	0.29	0.31
PRT	Portugal	95	114	74	-0.34	0.28
QAT	Qatar	78	104	53	1.74	-1.69

ROU	Romania	88	109	66	0.10	-0.25
RUS	Russia	97	117	76	0.29	0.31
SAU	Saudi Arabia	77	98	55	-0.70	-0.41
SRB	Serbia	91	111	68	-0.15	-0.64
SGP	Singapore	105	126	81	1.35	-0.86
SVK	Slovakia	97	117	75	0.29	-0.12
SVN	Slovenia	98	117	77	-0.12	0.32
ZAF	South Africa	59	92	39	3.67	0.18
ESP	Spain	95	114	75	-0.34	0.71
SWE	Sweden	99	118	78	-0.04	0.34
CHE	Switzerland	100	119	78	0.03	-0.08
SYR	Syria	77	99	58	-0.23	0.87
TWN	Taiwan	103	123	81	0.72	-0.04
THA	Thailand	87	106	68	-0.92	1.02
TTO	Trinidad Tobago	85	110	59	1.78	-2.01
TUN	Tunisia	82	102	62	-0.81	0.52
TUR	Turkey	82	103	62	-0.34	0.52
UKR	Ukraine	91	111	69	-0.15	-0.21
ARE	UAE	88	112	64	1.52	-1.11
GBR	United Kingdom	100	121	77	0.98	-0.51
USA	United States	98	119	76	0.83	-0.11
URY	Uruguay	85	107	60	0.36	-1.58
VEN	Venezuela	77	99	53	-0.23	-1.27
VNM	Vietnam	91	104	74	-3.48	1.93
YEM	Yemen	53	77	37	-1.04	1.81

**Figure S1.** Scatterplot showing the relationship between 5th percentile ability and average ability, using the direct residualization method for 5th percentile ability.



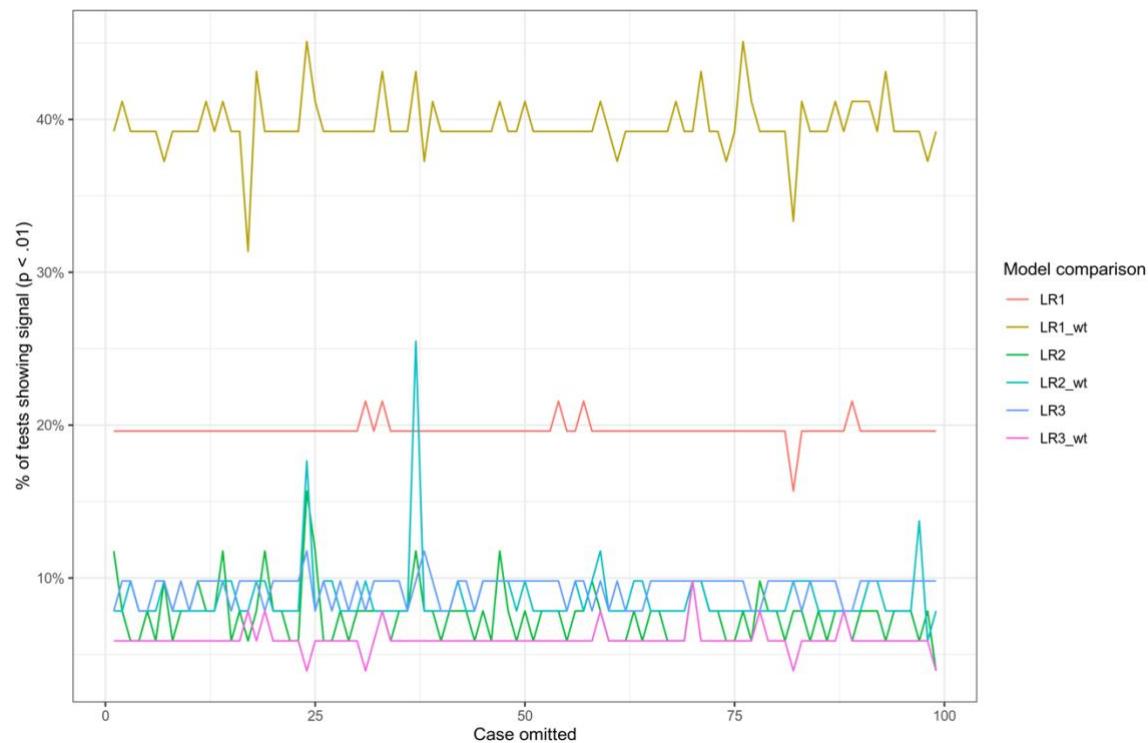
**Figure S2.** Correlation and scatterplot matrix for the main variables in the study.



**Table S2.** Models of the general factor of the Social Progress Index not using residualisation. Standardized betas, with standard errors in parentheses. \* = p < .01, \*\* = p < .005, \*\*\* = p < .001.

	SPI model 1	SPI model 2	SPI model 3	SPI model 4
Unweighted models				
Intercept	0.01 (0.061)	0.01 (0.057)	0.01 (0.060)	0.01 (0.057)
Mean IQ	0.83 (0.063***)	-0.25 (0.289)	1.47 (0.312***)	-0.66 (0.739)
95th percentile		1.09 (0.287***)		1.26 (0.400**)
5 <sup>th</sup> percentile			-0.66 (0.314)	0.25 (0.416)
R2 adj.	0.654	0.699	0.667	0.697
N	93	93	93	93
Weighted models				
Intercept	-0.24 (0.072**)	-0.22 (0.065**)	-0.21 (0.071**)	-0.23 (0.065***)
Mean IQ	0.77 (0.069***)	-0.61 (0.292)	1.82 (0.424***)	-1.42 (0.879)
95th percentile		1.45 (0.299***)		1.74 (0.422***)
5 <sup>th</sup> percentile			-1.06 (0.422)	0.53 (0.549)
R2 adj.	0.571	0.656	0.595	0.656
N	93	93	93	93

**Figure S3.** Chart showing proportion of likelihood ratio tests (across 50 SPI indicators) with  $p < 0.01$  when omitting one case at a time, for different model comparisons. LR1 = Mean ability vs mean ability + 95<sup>th</sup>. LR2 = Mean ability vs mean ability + 5<sup>th</sup>. LR3 = Mean ability + 95<sup>th</sup> vs mean ability + 95<sup>th</sup> + 5<sup>th</sup>. wt = weighted by square root of population size.



## **Essay 5: Marriage**

Please read the following chapter about marriage from a book by Roderick Kaine. This chapter contains opinions that some people would regard as old-fashioned. Nevertheless, ruminating about unusual viewpoints is a fun mental exercise. Try to find flaws in the author's arguments. If you are unable to debunk his opinions, then are you willing to accept his ideas as valid?

RODERICK KAINÉ

# SMART and SEXY

The Evolutionary Origins and Biological Underpinnings  
of Cognitive Differences between the Sexes



ARKTOS  
LONDON 2016

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various majority based political ideologies would be. In conclusion, it is clear that more evidence was accumulated and there were no clear answers as to what the influences of X-linked genes to male offspring had on their development. This study may have been unable to determine if there was a difference between Y-linked and X-linked genes in terms of their influence on the development of males.

## Disclaimer

Some of the views and opinions in this book are highly controversial. In no way is the intention of this book meant to insinuate that any of the scientists cited agree with any stated opinions. They may or may not; I do not know. The amount of direct communication had with any of the people cited has been minimal and for the large majority there was no direct communication whatsoever. When there was direct communication, the full scope or thesis of the book was not explained. Anyone who reads this book and becomes upset at its content should not presume to blame the academics whose research was discussed. They had no part in its writing and this work does not claim to represent their opinions in any way.

## Of Madonnas and Whores

The old standards of marriage were to a large extent designed to mitigate the hypergamous tendencies of women since they often extend past the point of pragmatism into irrationality and immorality; these abstractions being defined in reference to a preference for and promotion of civilization. Specifically, what may look good in the short term, or may be good for some individual women can be very damaging to the continuation of a culture and thus women generally in the long term. Even to the women who commit frivolous divorce it can sometimes be damaging since older women are (rightly) less desirable to men and their chance of getting remarried is much reduced.

As is readily apparent by the divorce rates and laws that exist today in the West, it is quite clear that women can't be depended on to act loyally towards their husbands, all of which are "second raters" compared to flights of fancy, or for them to willingly accept the weight of responsibilities that should be concomitant with their vows of marriage. 50 % of marriages currently end in divorce, though this may reduce in the future as all but the most certain men refuse to marry. 70 % of divorces are formally initiated by women,<sup>303</sup> though some estimates push it up to 90 % if you include husbands coerced into filing. My own brother was a victim of this scenario; his ex-wife cheated and generally made his life hell until he was left with no other choice but to file defensively despite sincere and exhaustive efforts to salvage the marriage. Acting in accordance with the herd animals women are,<sup>304</sup> if a woman's friend gets a divorce the idea spreads like herpes and increases her probability to divorce by 75 %, and 33 % if a friend of a friend gets a divorce.<sup>305</sup>

After divorce, women are often entitled by the state to receive large amounts of cash and prizes paid for by the usually unsuspecting husband. Women are awarded custody 82 % of the time, and are about 20 % more likely to get child support than the few men awarded custody. Compared to the small number of men who actually get child support, women usually get more money in terms of absolute numbers of

dollars. Women are the beneficiaries of 90 % of all the dollars awarded for child support.<sup>306</sup>

One particularly egregious example of female greed and self-centeredness is embodied by democratic politician and feminist Wendy Davis who, after convincing her older husband to cash his retirement with severe penalties to pay for her expensive Harvard education, promptly divorced him. Even more despicably, she abandoned her children to him to pursue her career in "victim" politics even though he wasn't even their biological father. Can behavior from and financial entitlements like this for large numbers of women be described as anything but parasitical? Yet to the average democratic voter and media she was lauded as a fine example of the modern have-it-all woman. Is it any wonder that more and more men are refusing to marry, have children or that the freedom of women with regards to divorce was so heavily curtailed in the past?

So how do the moral failings of women play out in terms of the whole society and evolutionary mating strategies? There is much discussion in the movement popularly referred to as the "manosphere" or the "red pill" about the Alpha/beta dichotomy. The concept is taken directly from theories in evolutionary psychology and is a description of instinctive female mating strategies.<sup>307</sup> All physiologically normal women want to have children by and investment from the top tier, highest quality men as a result of their innate hypergamy.<sup>f</sup> All women having children by top tier men is more or less feasible, but all women

<sup>f</sup> High quality is determined by instincts and evolution, not conscious reasoning or preference for civilization. Resources can indicate high quality and is most important in times of resource scarcity, but so can great charisma be indicative of good genes, as well as physical attractiveness. The instincts of women seem to consider all such traits holistically and prioritize them relative to the needs of the current environment. The only thing that is important from an evolutionary standpoint is the potential for the children of these men to inherit the traits that enable them to reliably reproduce themselves. Different male mating strategies, i.e. cadding vs. dadding, can both increase fitness depending on the environment.

gaining investment and commitment from the same is mathematically impossible.

Women who, for whatever reason, aren't able to secure the commitment of a top tier man must employ a compromise strategy if they want both commitment and good genes for their brood. They will get impregnated by the top tier man, but secure investment from a second rate man. This can involve the outright deception of persuading the provider male to believe another man's child is actually his (i.e., paternity fraud). Alternatively, if a woman is unable to hide this from the provider male because the children are already born, she may also have some children by him to sweeten the deal. However, his resources will be more or less equally spread over all her children including the ones that aren't his, which is a bad deal for him. Ideally, a man would only spend his resources on his own children. In short, alpha equals good genes combined with low commitment and beta equals bad genes combined with high commitment from the unconscious perspective of the medium to low quality women who employ the strategy to get the best of both types.

Men have a mirror dichotomous mating strategy. The mating strategy is called the Madonna/whore dichotomy. Understanding the concept of a whore should be fairly obvious. A man can never be sure a child of a whore is his since she sleeps with so many different men, so he has a high probability of wasting his resources by investing in her children. A man will bed whores because it doesn't cost him much to give her his seed so long as he can make himself scarce afterward. Men shouldn't marry or commit to a whore, ever, because those that do usually lose the evolutionary game. This is so important that men have naturally evolved the instincts to objectify and even feel disgust towards such women as a mechanism to prevent commitment. Lust might push a man to sleep with a whore, and stop him from engaging in suppression of her sexuality, but after all is said and done men often can't wait for the whore to get as far away from them as possible and

never return. This isn't an accident. Men are protected from wasting their resources on children that aren't their own by these feelings of anti-commitment. Contrary to popular opinion, disgust toward the idea of commitment to whores is the correct attitude for men to have and it should be encouraged.

The Madonna on the other hand is quite rare, at least in the wake of the sexual and feminist revolutions. A Madonna is a chaste and loyal woman who a man can be reasonably sure will bear his own biological children. Men instinctively know that their children stand a better chance if they stick around and provide resources, but they can only risk staying around for a woman of high moral character. A Madonna gives him the opportunity to invest in his children with low risk of paternity fraud. This is a good opportunity for him because the chance of successful reproduction of his children in turn is much higher if he directly invests in them. If a man meets a woman who he perceives to be a Madonna, he will correspondingly develop feelings for her and try to commit since among all the possible mating strategies that gives his genes the greatest chance for further reproduction in the next generation. A possible exception to this rule might be the small numbers of cads who are able to successfully mate with many women and thus win out through sheer, overwhelming quantity over quality, but for most men this is beyond their talents. In short, Madonna equals high paternal confidence combined with high commitment whereas whore equals low paternal confidence combined with low commitment.

Humanity benefits greatly when most men engage in the Madonna mating strategy. A man's investment in his children is not affected by the law of diminishing returns. The more he can invest, the more evolutionarily fit his children are. Therefore, he has a very strong incentive to be much more productive than he otherwise would be and to look for any method or technology that might increase that productivity further. Married men tend to earn 20–50 % more than their unmarried

counterparts even after controlling for IQ, education, experience and racial group.<sup>308,309</sup> This boost in income is generally called the *marriage premium* by economists, and that may be true from the perspective of tax collectors, but to the individual men who are actually doing the extra work it is more accurately considered a cost of successfully implementing the Madonna mating strategy. Working all those extra hours isn't desirable in and of itself. The increased productive labor and technological development of the entire population of men pursuing the Madonna mating strategy combines synergistically to create a whole that is greater than the sum of its parts. And it is only possible for men to do this due to the particular profile of their intellect and the nature of their production. Everyone benefits from a productive and prosperous civilization that can only result from the combined cooperative efforts of all men.

Tension arises between the contrasting Alpha/beta mating strategy and the Madonna/whore strategy because whores gain tremendously if they are incorrectly perceived as Madonnas. Deception in mating thus offers a very large reward to individual women and results in a population sized prisoner's dilemma. Everyone benefits significantly if women as a population are faithful to whatever man they can actually get to commit. However, individual women can gain tremendously on top of the benefits of civilization if they can have children by a high quality man while convincing another to invest in them. The problem is should a large enough percentage of women cheat (figuratively and literally), men eventually figure it out culturally and/or biologically evolve to be more reluctant to commit. Without commitment, the number of men working past their individual needs dwindles and civilization falters. J.D. Unwin surveys a number of past civilizations in his 1934 book *Sex and Culture* and found that past civilizations displayed a remarkably similar pattern of sexual restraint reformed to sexual liberation. He concludes:

The same changes were made successively by the Sumerians, Babylonians, Athenians, Romans, Anglo-Saxons, and Protestant English. These societies lived in different geographical environments, they belonged to different racial stocks, but the history of their marriage customs is the same. In the beginning each society had the same ideas in regard to sexual regulations. Then the same struggles took place, the same sentiments were expressed, the same changes were made, the same results ensued. Each society reduced its sexual opportunity to a minimum and, displaying great social energy, flourished greatly. Then it extended its sexual opportunities; its energy decreased and faded away. The one outstanding feature of the whole story is its unrelieved monotony. I have summarized these changes in matrimonial law so that the whole matter may be discussed from an impressionistic point of view. From a superficial study of the available data it might be thought that the questions of female subjection and parental power are indissolubly allied to that of female continence; but actually their alliance in the past has been due to the chance factor that sexual opportunity has never been reduced to a minimum except by depriving women and children of their legal status.

It is historically true to say that in the past social energy has been purchased at the price of individual freedom, for it has never been displayed unless the female of the species has sacrificed her rights as an individual and unless children have been treated as mere appendages to the estate of the male parent, but it would be rash to conclude that sexual opportunity cannot be reduced to a minimum under any other conditions. The evidence is that the subjection of women and children is intolerable and therefore temporary, but we should go beyond the evidence if we were to conclude from this fact that compulsory continence also is intolerable and therefore temporary. Such a statement, indeed, is contradicted by the tenor of the whole story...

...It is in this manner that the behavior of these societies was controlled by their methods of regulating the relation between the sexes. In no case was sexual opportunity reduced to a minimum unless married women, and usually unmarried women also, were compelled to suffer legal and social disadvantages. The manner in which the marital and parental authorities were modified was the same in each society. In every case the same situations arose, the same sentiments were expressed, the same changes were made, and the same results ensued. The history of

these societies consists of a series of monotonous repetitions, and it is difficult to decide which aspect of the story is the more significant: the lamentable lack of original thought which in each case the reformers displayed, or the amazing alacrity with which, after a period of intense compulsory continence, the human organism seizes the earliest opportunity to satisfy its innate desires in a direct or perverted manner. Sometimes a man has been heard to declare that he wishes both to enjoy the advantages of high culture and to abolish compulsory continence. The inherent nature of the human organism, however, seems to be such that these desires are incompatible, even contradictory. The reformer may be likened to the foolish boy who desires both to keep his cake and to consume it. Any human society is free to choose either to display great energy or to enjoy sexual freedom, the evidence is that it cannot do both for more than one generation.<sup>310</sup>

In essence, this is a free rider problem in which women want the benefits of civilization, but do not cooperate with the needs of the group to make civilization possible. Addressing the problem of female free riders, and the cads they sleep with, has thus been universal to all human cultures that have developed civilization. Usually the prescriptions for chastity and commitment have come associated with religious or spiritual belief. Religious and moral systems are the cultural solution to an intractable biological problem (though these systems may also be utterly reliant on underlying biological mechanisms). Since the reward for cheating is and always will be high for individual women in a civilized culture, there is no scenario in which evolution could naturally eliminate the trait entirely, therefore cultural methods for suppressing free riders must be omnipresent and strict. Ironically, the evolution of the female sexual trade union instinct probably made such institutions more likely, and implies that it is mainly the responsibility of women, rather than men, to enforce traditional values on other members of their own sex. It is through self-restraint, then, that women make their main contribution to the development and sustainability of civilization. Anything less than harsh suppression of female sexuality causes civilization to

become unstable. It is interesting to wonder if Eve's part in tempting Adam in the book of genesis is an allegory for the sequence of events that culminate with the destruction of civilization. First women fail to cooperate, then men refuse to participate, and finally we are all thrown out of Eden...

What we experienced in the 20th century was the triumph of the free riders over civilization because people legitimately believed we could have our cake and eat it too. The culture that was indispensable for suppressing the free riders was hijacked and turned on its head. Not only does culture now fail in its primary pro-civilizational mission, it actively discourages women from cooperation and makes it as easy as possible for them to cheat their responsibilities. "No fault divorce" combined with asset division, defining fatherhood as something other than biological, and banning paternity testing (as they do in France) all allow free rider women to commit paternity fraud with minimal amounts of deception, as well as gain undeserved resource extraction from men. Redistribution policies to mothers, especially single mothers, allow free rider women to do away with any pretense of cooperation entirely. Such policies coerce all productive men into being de facto cuckolds. The near universal desire by modern women to advance the feminine imperative without regard to the consequences is nothing less than the collective failure of women to resist the greedy temptation to eat of the forbidden fruit. The cost of this failure is civilization itself and there can be no greater price to pay than Eden.

If there is any hope of restoring the cultural potential for an expansive and prosperous civilization, society must be optimized such that a maximum number of men willingly engage in the Madonna mating strategy. For men to be willing to do this, marriage must be made appealing to men. To be appealing, men have to be unambiguously made the authority of the household and must be legally immune to financial ruin resulting from the incorrigibly capricious nature of women. In addition, humanity must culturally frustrate the evolutionary potential

of free rider mating strategies. Social exclusion and refusal of the state to subsidize women, and single mothers especially, should provide sufficient punishment and disincentive.<sup>g</sup> The divorce laws need to be biased to favor men by default. If there isn't clear evidence of extreme wrongdoing on his part, then the wife must be given a raw deal for breaking her vows. Is this unfair to women? It doesn't matter. The only morality is civilization, and civilization is only possible when men are willing to marry because it works in their favor.

Widows whose husbands died untimely early deaths could be excepted.

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<sup>g</sup> Widows whose husbands died untimely early deaths could be excepted.

## **Essay 6: Compare Two Policies**

Horizons (<https://www.horizonspbc.com>) hosts annual psychedelic conferences in New York City and Portland, Oregon. Please look below at these two policies:

- A) The Horizons *Code of Conduct & Safer Space Policy*.
- B) *Academic-Freedom Policy at the Alfred M. Hubbard Institute (AMHI)*

Write an essay about these three points:

- 1) Comment on any similarities or differences in the content of these two policies.
- 2) Speculate on how Horizons might treat each of the authors of the articles used in Essay 3 (microaggressions), Essay 4 (smart-fraction theory), and Essay 5 (marriage).
- 3) Presuming that any of these authors wanted to get training to become a psychedelic facilitator, which of them do you think would be happy studying at the AMHI program? Which do you think would be better suited to attending a program at some other school that has a different orientation? Explain why you think this.

## ***Code of Conduct & Safer Space Policy***

Horizons strives to maintain a professional atmosphere at its events, and invites the community to help us uphold professional standards of conduct.

We encourage everyone – board members, speakers, staff, and attendees – to be proactive in creating an atmosphere of safety and non-discrimination.

By attending Horizons as an attendee, board member, staff, speaker, contractor, vendor, or volunteer, you are agreeing to abide by this code of conduct; you are recognizing that behavior that violates this code of conduct will render you subject to expulsion, termination of contract, or other consequences pertaining to your involvement with the conference; you are acknowledging that your involvement with Horizons is subject to the discretion of the organizers; and you are waiving all civil actions pertaining to such consequences.

We do not tolerate behavior that is unsafe, abusive, or discriminatory, including but not limited to:

Making disrespectful or prejudiced remarks, particularly with regard to gender, gender identity and expression, sexual orientation, race, age, religion, ethnicity or national origin, physical appearance, physical ability, or mental competence. We understand disrespect and prejudice to be functions of the impact experienced by the person at whom the remarks are directed, rather than of the intent of the speaker.

Unwanted sexual or romantic attention

Unwanted physical, verbal, or digital contact, including intimidation, coercion, threats, stalking, or following

Photography, videography, or recording focused on an individual without their consent and clear expectations as to how such captured media will be used

Deliberate disruption of conference proceedings and related activities

Display of sexual or discriminatory imagery

Leveraging positions of power for sexual or discriminatory purposes, which includes the behavior of board members, staff, speakers, volunteers, and leaders of affiliate organizations

For licensed professionals, any behavior that is a violation the ethical obligations of their profession, including all attorneys, mediators, medical doctors, clinicians, therapists, and counselors

Advocating for, encouraging, or condoning any of the above behavior

We will take action to maintain a professional and safe environment at Horizons events.

This may include working to reduce the impact of unacceptable behavior that occurs outside of our events, particularly at similar or affiliated community events.

## ***Reporting***

We encourage all community members to report unacceptable behavior, and take these reports seriously. We collect, store, and evaluate reports in collaboration with a professional neutral mediator who is also a NYS-licensed attorney.

If anyone has unacceptable behavior on the part of any Horizons board member, staff, speaker, or attendee to report, they may do so via our neutral mediator and community ethics advocate, Andy Izenson, of Diana Adams Law & Mediation, PLLC.

Mr. Izenson can be reached at [andy@dianaadamslaw.net](mailto:andy@dianaadamslaw.net), or anonymously at NYC Psychedelics Community Information Gathering.

Reports may remain confidential in part or whole, and Mr. Izenson will not share details with the Horizons organization unless requested by the reporting person.

We encourage any reporting party who wishes to seek support around concerns that may involve civil or criminal liability for Horizons, any person affiliated with Horizons, or the subject of the complaint, to assist our team in providing the best support possible, while also protecting our conference and community, by providing contact information through the channels available. The agency, safety and confidentiality of reporting parties is a top priority for our team.

We will announce additional procedures for reporting unacceptable behavior at the conference itself well prior to the event dates.

## ***Responses & Enforcement***

We evaluate and respond to reports and make decisions about how best to maintain a safe and inclusive environment in consultation with Mr. Izenson, a professional, neutral mediator and community ethics advocate who is also a NYS-licensed attorney.

We may take a variety of actions in service of our goals of safety and non-discrimination. These might include written or verbal warnings, declining entry,

expulsion from the conference (without refund), or immediate termination of status as a board member, staff, speaker, contractor, vendor, or volunteer.

Where the person reporting a concern provides specific details or contact information, or expresses desire to participate in Horizons' response, whether by providing input, through a mediated or restorative process, or in any other way, our response will be guided by their safety, needs, and input to the extent possible, practicable, and requested. Where a report is made anonymously and/or without expressed desire to participate further, we will utilize our best judgment and discretion, with the input of our community ethics advocate.

When appropriate, we will try to resolve conflicts in the community via mediation and to discourage cycles of escalation and public feuding.

We will announce additional information about responding to reports and enforcement actions at the conference itself well prior to the event dates.

<https://www.horizonspbc.com/code-of-conduct-nw> accessed 9-August-2024  
This policy has been in effect since at least 2022.

## **Academic-Freedom Policy at the Alfred M. Hubbard Institute (AMHI)**

AMHI is committed to honoring academic freedom both for students and for teachers, just as students and teachers must honor the academic freedom of others. Academic freedom includes:

1. Freedom to pursue ideas wherever they may lead.
2. Freedom to express thoughts, even unconventional ones, without being punished, shunned, humiliated, or retaliated against.
3. Respect for alternative viewpoints and the encouragement of dialogue.
4. Respect for our school's role as an institution dedicated to the search for rational knowledge and the unvarnished truth.
5. Respect for the articulation of unpopular concepts, particularly on controversial or emotionally charged topics, since valid insights may accrue from unexpected perspectives.
6. Respect for the liberty to commit an honest error, for only by feeling free to impartially explore what might turn out to be an intellectual dead end can we more accurately apprehend reality.
7. Following through on the duty to admit one's error (or admit the need for a more nuanced understanding) when new evidence necessitates a revision of opinions, interpretations, or the previously accepted consensus about the facts.

By paying tuition so that you can enroll in the psychedelic-facilitator training program, you signify that you solemnly vow to adhere to AMHI's academic-freedom policy while attending the Alfred M. Hubbard Institute.

## **Step 2: Brief Video Statement**

Send us a video no longer than three minutes. In the video, the applicant should discuss something about psychedelic facilitation. You can either email a video attachment or send us a link to a YouTube video that you uploaded.

## **Step 3: Online Interview**

After reviewing the applicants' essays and video statements, AMHI staff will conduct brief online interviews with those applicants who seem like they might be a good fit for our school. The interview will be an informal, friendly conversation geared toward assessing whether the applicant should be accepted to the AMHI program. Is the applicant able to handle the coursework? Why does the applicant want to work as a facilitator? Is the applicant's general life situation conducive to undergoing AMHI training at the present time? Does the applicant's worldview and personal values align with those being advanced by the AMHI program?

The interview will also explore the applicant's previous personal experience with mind-expanding substances. Everybody working with psychedelics now recognizes that some personal experience is necessary for a facilitator to understand what clients are dealing with. However, an individual with only a few personal experiences may have delved more deeply into the process than another person who has had hundreds of shallow experiences. If an otherwise qualified applicant has never used a psychedelic substance, then AMHI will encourage the applicant seek professional facilitation for a supervised session unless there are contraindications. We can discuss how to get you up to speed as far as personal experiences.

## **Step 4: Paperwork**

Successful applicants will receive a letter of acceptance whose terms are contingent upon paying tuition and agreeing to follow the stipulations in the *AMHI Student Handbook*.

Applicants who are accepted to the AMHI program will be emailed a dated letter signed by an AMHI instructor or school representative. This letter will state that the applicant is accepted to the program for a cohort that begins on such-and-such date. The applicant will have to pay the non-refundable \$1,000 tuition deposit and agree to follow AMHI's rules such as our academic-freedom policy.