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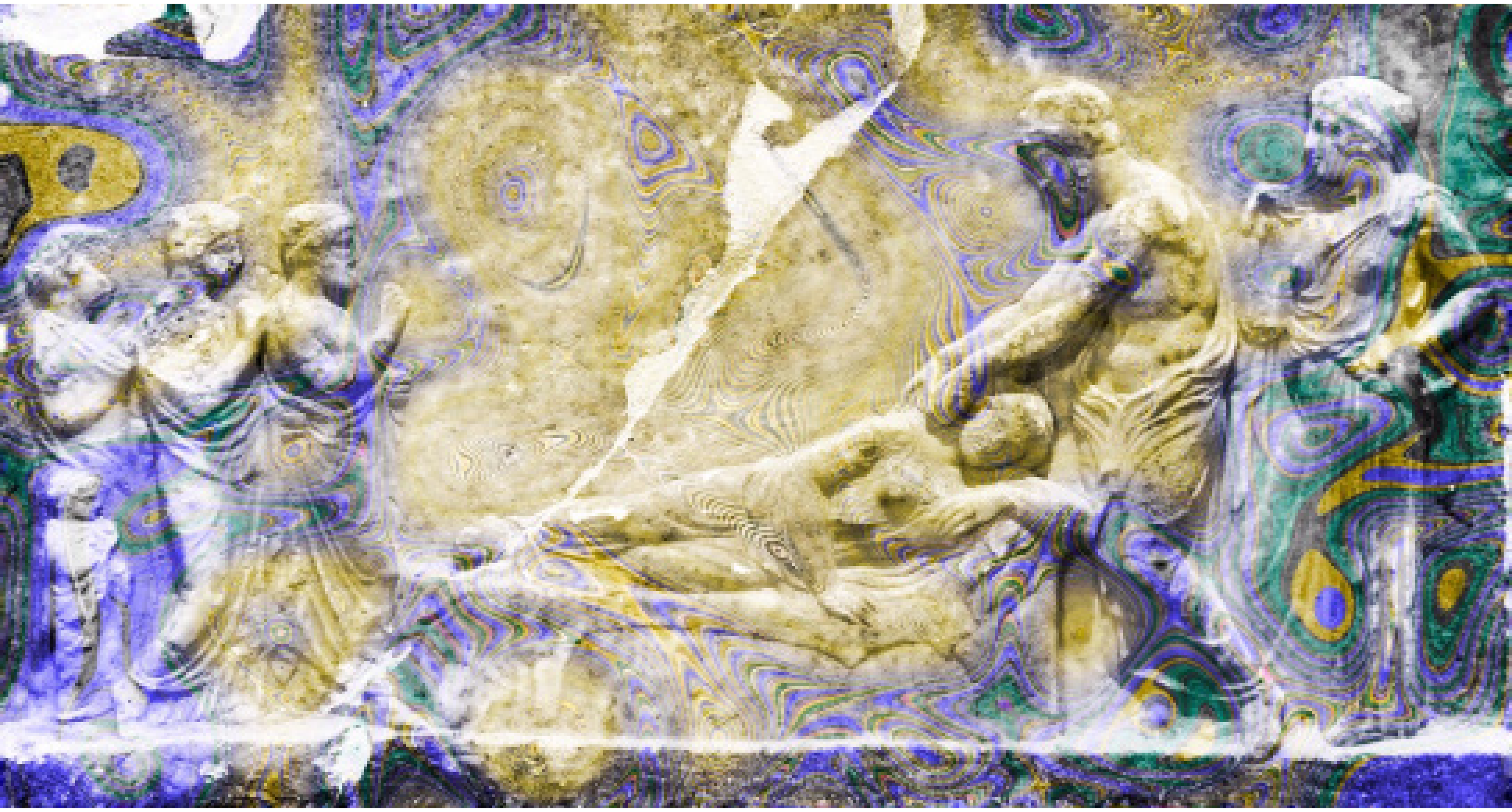

A Search for Meaning: Classical to Contemporary

psychedelic enhancement and end-of-life care

Penn Bioethics Journal

The Penn Bioethics Journal (PBJ) is the premier peer-reviewed undergraduate bioethics journal. Established in 2004, the Journal provides a venue for undergraduates to make contributions to the field of bioethics.

Embracing the interdisciplinarity of bioethics, PBJ reviews and publishes original work addressing debates in medicine, technology, philosophy, public policy, law, theology, and ethics, among other disciplines. The biannual issue also features news briefs summarizing current issues and interviews with eminent figures in the field.

Authors and the editorial staff alike have a unique opportunity to experience the peer-review process through the collaborative, rigorous review and preparation of the Journal. With an audience ranging from undergraduates to scholars in the field to the broader public seeking unbiased information, the Penn Bioethics Journal occupies a unique niche in the field of bioethics.

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Letter from the Editors

Dear Readers,

It is our pleasure to present Volume XVI, Issue i of the Penn Bioethics Journal, titled "A Search for Meaning: Classical to Contemporary."

Over the course of the COVID-19 pandemic, which is ongoing at the time of this writing, the importance of bioethics as the handmaid of health policy has become increasingly apparent. Rationing ventilators, balancing lockdown enforcement against economic repercussions and individual autonomy, protecting healthcare and essential service workers, and addressing demographic disparities in infection and death rates have become topical bioethics challenges.

We note the necessity of bioethical discourse in enabling constant vigilance and preparation in order to mitigate circumstances such as these. The World Congress of Bioethics, hosted virtually by the University of Pennsylvania from June 19–21, featured a flourishing discussion over bioethical issues relevant to the pandemic. Urged by the same attention to intellectual diversity and rigor, PBJ is proud to offer its readership the following articles.

This issue's first article, titled "Confronting Death: End-of-Life Care in Classical Antiquity," traces the concept of end-of-life care from its origins in Hippocratic medicine to contemporary allopathy, exploring the notions of palliative care and euthanasia in particular. Author Shaan Bandarkar of Yale University finds that the legacy of classical theories and practices of end-of-life care abides even in modernity.

"Ethical Implications of Psychedelic Enhancement," the second article, argues that the use of psychedelics toward moral enhancement is unethical. Author Christina Stankey, also of Yale University, defends the good of natural human limitations that psychedelic enhancement seeks to undermine, neatly deploying the object-end-circumstance framework expounded by Thomas Aquinas.

PBJ also had the pleasure of interviewing Dr. Harald Schmidt, Assistant Professor of Medical Ethics and Health Policy at the University of Pennsylvania, on the bioethical implications of the COVID-19 pandemic, including disparate impacts on particular socioeconomic and racial groups, allocation of ventilators, tests, and vaccines, and national healthcare coverage. Finally, this issue's news briefs discuss the ethics of COVID-19 vaccine trials, in the context of the current pandemic, and of psychedelic microdosing, an interesting supplement to the second full-length article.

We thank all members of the PBJ team for their flexibility in these unprecedented times. We also express our gratitude to healthcare and other essential service workers, whose remarkable dedication has supported the capacity of society at large to adapt to the fluctuating circumstances.

Thank you for reading this latest issue of the Penn Bioethics Journal. It is our hope that this issue increases the visibility of bioethics among undergraduates. Please contact us with any questions, comments, or ideas for collaboration at pbjeditorinchief@gmail.com.

Shreya Parchure and Aditya Rao
Editors-in-Chief

Ethical Concerns About Coronavirus Vaccine Trials

Hope Hawthorne

With the rush to find a coronavirus vaccine, scientists, physicians, and policymakers have posed questions about the ethics of clinical trials. The normal time it takes to create a vaccine is 15 to 20 years and researchers are attempting to make a coronavirus vaccine in a year or a year and a half. This will require changes in the typical vaccine production process (Boodman 2020). Normally, vaccines would be tested in animals before being tested in humans. The urgency of the situation has led researchers to run mice studies and human studies at the same time (Goldhill 2020).

As of August 11, there were 49 vaccines that the World Health Organization (WHO) was monitoring in human clinical trials (Kommenda 2020). One of these vaccine candidates is being made by Moderna, an American biotechnology company. On May 7, Moderna received approval from the U.S. Food and Drug Administration (FDA) to begin phase two testing, despite not yet having complete phase one results (Weise 2020).

The role of the WHO is to create guidelines for vaccine development. In the U.S., the FDA approves the vaccines that are distributed and may use WHO guidelines to make decisions (Bellamy 2020). The FDA requires vaccines to be tested in three phases to be approved for use in the US. Phase one is tested on between 20 to 100 healthy individuals and focuses mostly on safety. Phase two tests the drugs on hundreds of people to test for short-term effectiveness and continues to examine side effects and safety. Phase three is tested on thousands of volunteers for long-term efficacy in randomized control trials (CDC 2018).

There is another vaccine candidate developed by the University of Oxford and AstraZeneca that is in a combined phase two and phase three study, meant to accelerate the vaccine development timeline. This study changed some of the typical vaccine development procedures. For example, the phase one trial enrolled 1,000 participants, which is significantly larger than the sample size for a normal phase one trial. This vaccine could be ready in September with emergency authorization from the UK's National Institute for Health and Care Excellence (Goldhill 2020).

Scientists have proposed other ideas that would rapidly test the vaccine on large sample sizes. On March 31, bioethicists proposed the idea for human "challenge studies" to replace normal phase three studies in the Journal of Infectious Diseases (Eyal et al. 2020). The challenge study would involve intentionally exposing all volunteers to the coronavirus, including the control group that only receives a placebo. Even though the participants would be young and healthy there is still a risk of death (Branswell 2020). There has been increased support for conducting a challenge study because it could potentially speed up vaccine development. There are 35 members of the U.S. House of Representatives that have written to the FDA in support of a challenge study (Branswell 2020). The major benefit of a challenge study is to develop a coronavirus vaccine quicker, but the major concern is the risk of death because there is no rescue treatment.

There is a chance that a challenge study would not gain approval from the FDA because there is not a cure for participants in the control group. The FDA has never approved a challenge study for a virus without a treatment (Bellamy 2020). As a result, some medical professionals are concerned about a challenge study. For example, Myron "Mike" Levine, a physician and infectious diseases expert at the University of Maryland, is concerned about a challenge study for COVID-19 because there are not yet any effective treatments for preventing death from the coronavirus, thus posing a significant risk to study participants (Branswell 2020).

There are four major ethical principles that are applicable to vaccine trials: beneficence, autonomy, non-maleficence, and justice. A coronavirus vaccine would be beneficial because it would prevent hundreds of thousands of deaths. Autonomy would be respected in a vaccine trial by providing comprehensive information about risks and benefits so that participants can make informed decisions about participating. However, non-maleficence is the major concern in a challenge study due to the possibility that participants could die from the coronavirus. Justice refers to the equal distribution of the benefits and hardships of research, which is most significant in the distribution of vaccines (Molyneux 2017).

On May 6, The WHO released guidelines supporting challenge studies as long as eight conditions are met, but if Moderna or other American biotechnology companies want to conduct challenge studies they must receive approval from the FDA. One of the WHO's conditions is that the benefits outweigh the risks. One benefit of a challenge study would be a shorter clinical trial than a typical phase three trial, which could save more lives. There is a risk of losing lives in the challenge trial, which is why the WHO Working Group for Guidance on Human Challenge Studies in COVID-19 has outlined suggestions for minimizing risks.

These suggestions include selecting participants that have a low risk of dying from the coronavirus, but a high risk of contracting the coronavirus (WHO 2020).

When a coronavirus vaccine is approved, there will still be ethical questions to address, as policymakers decide which individuals should receive the vaccine first. Stephane Bancel, the CEO of Moderna, said that one producer will not be able to meet the demand for a coronavirus vaccine once there is one approved (Higgins-Dunn 2020). The limited supply means that there will need to be an ethical framework for vaccine allocation. Here, the principle of justice is important to ensure that vaccines are not just going to the individuals that can pay the most. This will require governments and the WHO to develop plans to fairly distribute vaccines.

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The Status of Psychedelic Microdosing: What We Know Now and What We Need to Find Out

Emma Keeler

Microdosing psychedelics is the practice of consuming very low, sub-hallucinogenic amounts of a psychedelic substance, such as lysergic acid diethylamide (i.e. LSD), psilocybin-containing mushrooms (i.e. mushrooms), N,N-dimethyltryptamine (i.e. DMT), and occasionally cannabis and ketamine (Leonard 2015). This practice has garnered increasing attention in recent years, with prominent figures such as Steve Jobs, the late CEO and co-founder of Apple, and medical professionals like Dr. James Fadiman, a licensed psychologist who has been studying psychedelics for over 50 years, endorsing microdosing and praising its cognitive benefits (Ian 2019). Furthermore, the topic of psychedelic microdosing has been publicly addressed in several books (Cruz 2017; Kumar 2016; Waldman 2017). Despite this recent spike in popularity, the scientific community has not yet reached a uniform and definitive consensus on the specifics of microdosing. This is largely due to the lack of empirical research surrounding the short and long-term effects of this practice, resulting in a reliance on highly variable and anecdotal evidence from microdosers.

The motivation behind microdosing psychedelics is multifold. Some are drawn to the promise of increased productivity and creativity. Others are attracted to the possibility that microdosing may alleviate the suffering associated with illnesses such as asthma, allergies, depression, and the common cold — all sicknesses that Fadiman claims can be treated through psychedelic microdosing (Fadiman 2011).

The amount of a psychedelic substance that

constitutes a microdose is the first area of disunity within the nascent microdosing field. The vast majority of published literature agrees that microdosing entails the consumption of approximately one-tenth to one-twentieth of the recreational dose of a psychedelic substance, however, specific doses vary greatly. For example, an article in Rolling Stone defined a microdose as approximately 0.001 grams of LSD, or 0.2–0.5 grams of dried mushrooms (Leonard 2015), while psychologists Anderson and Petranker defined it in BioMed Central as 0.005–0.02 grams of LSD or 0.1–0.3 grams of mushrooms (Anderson & Petranker 2019). Clinical and preclinical studies have characterized a microdose for mushrooms and DMT as <0.001 grams (Hasler 2004; Wackermann 2008) and 0.006 grams (Shulgin 1976), respectively. For comparison, a hallucinogenic dose of mushrooms is considered to be 3–5 grams (Rumack & Spoerke 1994). There is a 500-fold difference between the upper threshold of what a microdose was considered to be in Rolling Stone and the clinically-accepted definition of a microdose, illustrating the variable definition of a microdose.

These discrepancies continue when comparing published microdosing schedules. After reviewing different published microdosing protocols, it appears that there are three distinct regimes that are widely practiced. The first and most popular of which was outlined by Fadiman in his book The Psychedelic Explorer's Guide: Safe, Therapeutic, and Sacred Journeys (Fadiman 2011). This microdosing protocol involves two consecutive dosing days followed by two non-dosing days. Another accepted routine has been dubbed 'weekday' dosing, with microdosers consuming a given psychedelic substance only on weekdays. Finally, other individuals elect to dose every other day. These regimes range from one week to two years in duration, and they are only a few of the many ways that people microdose. A recent survey found that half of the respondents who microdose devised their own specific schedule (Hutten 2019).

The majority of the few studies that have assessed the effects of psychedelic microdosing have exhibited various methodical issues, most notably the lack of a placebo group. One of the few placebo-controlled studies found no significant physiological differences between participants who received a placebo microdose versus a psilocybin microdose. However, the psychological effects of psilocybin microdosing have been reported online by users, who have reported both improvements in energy, mood, cognition, concentration, creativity, and productivity, as well as reduced anxiety, depression, addiction, and pain. Others have described a much different experience, detailing physical discomfort, anxiety, overstimulation, cognitive interference, and emotional difficulty (Anderson 2018).

Given the increasing prevalence of microdosing

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Interview

A Conversation with Dr. Harald Schmidt

Dr. Harald Schmidt, MA, PhD is an Assistant Professor of Medical Ethics and Health Policy at the University of Pennsylvania. He is also a Research Associate at the Center for Health Incentives and Behavioral Economics, a member of the Management Committee of the International Society on Priorities in Health Care, and a member of UNESCO's Ethics Task Force.

This interview was conducted by Jordan Liu, Miles Meline, and Humphrey Shen.

Photo courtesy of Dr. Schmidt

Could you introduce yourself, talk a little bit about your professional background, and share with us your role here at Penn?

I joined as faculty at Penn in 2013. I have an MA in philosophy and a PhD in public policy. Before working in academia, I was Assistant Director of the Nuffield Council on Bioethics for 7 years, a nonpartisan bioethics think tank in the UK that functions in many ways like a national ethics committee. My main research interests are personal responsibility for health and priority setting in healthcare. The Department of Medical Ethics and Health Policy fits me very well because I'm in equal measure interested in policy as in ethics. As you know, Penn's motto is 'laws without morals are empty'—and much of my work is concerned with looking at the ethical justification of laws and policies, and, just as important, trying to make constructive proposals to improve or establish them, where needed. The interdisciplinarity we have at Penn for such work is hard to beat!

There have been a lot of critiques towards the United States preparedness and response to COVID-19 in regards to socioeconomic, income, and racial disparities. What are your thoughts on the bioethical implications of these matters?

It is striking how in one of the richest countries on earth, we were evidently not able to get basic things done, such as getting protective gear to hospital workers. That lack of preparation and utter disregard for the safety of healthcare workers—who we then expect to save our lives—is just really very hard to comprehend. Then, we have these astounding differences in hospitalizations and deaths across races. On average, more than twice as many blacks compared with whites died, in some states up to six times as many. True, we are facing a pandemic. But as my colleague Shreya Kangovi noted in a recent LDI seminar on meeting the needs of vulnerable communities, in many ways, this is more about a pandemic of poverty. In cruel clarity, COVID is showing us—many would emphasize: again—major problems with the underlying structure of how society and healthcare, in particular, is organized. Sadly, COVID can be seen as exhibit 1 in terms of illustrating what social determinants of health are all about. And that's where I think we really have to focus, not just on dealing with the problems in the here and now, but also longer-term, what we're doing once we fought the fires that need to be put out, or at least controlled, right now. It's a unique and critical opportunity, and hopefully one we will seize.

Given that the pandemic is revealing these stark disparities, what sort of transformations do you think we could see after the pandemic in terms of health care policy and the way that we structure social support?

Working on social determinants aside, moving closer towards universal health coverage looks like the most urgent and concrete priority. And maybe there's actually a silver lining in COVID here. Literally everyone in the country is worried about suddenly contracting COVID. The better-off likely will appreciate the value of health insurance. But many of the worse off have lost insurance with their work, only have patchy coverage, or none at all to start with. So when it comes to the next elections, that personal and lasting experience of fear of hospitalization and death, and the appreciation of the importance of having meaningfully comprehensive and affordable health insurance will hopefully make everyone a lot more sympathetic to the existential need for healthcare.

We've seen a lot of challenges and anxieties related to allocating ventilators and initial COVID-19 testing in the US. Do you see those same challenges and feelings reoccurring if and when a vaccine gets approved by the FDA?

A pretty topical question given that the President spoke today about vaccine strategy and stated vaccines would be made available fairly and quickly!

There are lots, and three main challenges when it comes to vaccine access. The first is, obviously, developing vaccines. That is where the current focus of attention is, and the administration thinks that it will happen before the end of the year. The second is producing vaccines at scale. There are major bottlenecks in production, as this isn't the same as making and packaging band-aids. So over extended periods, there will be rationing, as demand will outstrip supply. And that's where the third challenge comes in, as we need to decide who gets a vaccine when not all can.

The impatience that many people understandably have about lockdown measures, and the possibility of new waves of infection make this all the more urgent. While the NIH has been working on vaccines since January, and while we now have the administration stressing urgency in responding to COVID-19 in naming the initiative Operation Warp Speed, it's really concerning that we don't yet have anything towards a vaccine allocation plan. In terms of importance, clarity about who gets vaccines arguably comes right after having a vaccine in the first place. So that's a problem.

My take on who should get priority for vaccines is that we have to consider both the here and now – what is important in terms of controlling the spread — as well as the longer-term societal implications.

When it comes to the general population (as opposed to say, essential workers) what ticks both boxes is to prioritize worse off population groups, for ethical, economic, and epidemiological reasons. I live in New York City. When it started, a lot of the better off people went to their holiday homes to sit things out. But lots of poor people were not able to leave the city and simply can't afford to not work. So better off people are able to prioritize their health over income opportunities (or pursue both simultaneously), and worse off far less so. They come into more contact with people in their work, commuting and housing situations, which can also play a larger role in spreading the virus—that's the epidemiological side of things. The economic one is closely related, as the worse off are the ones who are hardest hit by job losses. The software engineers working remotely from Florida now will do just fine, sitting it out a bit longer! And ethically, we really have to pay attention to the significant role that structural racism plays in all this. Because of historical and ongoing structural disadvantage, the feeling of being passed over in healthcare encounters is a common one for, especially, African Americans. Vaccines have major health benefits, as well as symbolic value. If it turns out that we have huge discrepancies across races in accessing vaccines, the social justice damage could be hard to fathom. With something like COVID-19 that will define generations, it's critical to avoid a Tuskegee-like impact—and I'll just note again the extremely concerning disparities in hospitalizations and deaths that we've seen in recent months. So, if you care about trust and about social justice, you can't allocate vaccines by pretending everyone starts from a level playing field.

Thinking about the ethical frameworks and guidelines that we use, do you think the underlying principles are different for when we're allocating ventilators, tests, or vaccines? Should we be using the same principles to guide that allocation or do you think there's something special about vaccines that might warrant some sort of a different allocation?

I don't think the ethical principles are different at all. But the medical or health care-related facts can differ and require close consideration. So, in vaccines, you need to think a lot about epidemiology, which people or groups are essential for keeping society functioning, which ones are super spreaders, and so on. For ventilators, that's different. For example, how you think about essential workers can differ. For vaccines, because of the contacts they have with others, it's clear they should be prioritized. But for ventilators, priority is less clear. States like Michigan and Pennsylvania, as others, do prioritize front-line healthcare workers. But not all states do. For example, New York doesn't. Given COVID's impact is not such that we must fear to not have enough health workers, reciprocity or some recognition of the risk health care workers take, drives giving them priority. But that New York doesn't do this doesn't mean they don't see these risks—but just that this isn't something that makes them more deserving (plus, it's not trivial to assess the extent to which the risks that physicians take relate to those of nurses, or to those of supermarket check-out workers, or public transport workers, who might then be equally deserving).

Who should be crafting these ethical guidelines to allocate resources like vaccines? Should it be the federal government or should it be on the lower level, like state and local governments or even individual physicians?

You raised another really important point here, which is that even though the issues around basic liberties and social justice that arise in rationing ventilators or vaccines couldn't be more glaring, we don't have binding uniform national guidelines. Ventilator rationing is completely up to individual hospitals, who may, or may not draw on state or other guidance. For vaccines, we do have draft guidelines for a flu pandemic, and hopefully, something like this will be adapted. But in practice, it looks again like states will decide who gets what. Given the stakes, it's really quite a bizarre situation. Social justice, leadership, and transparency aside, it makes a lot of practical sense to me to have these rules be set at the national level. With everything else going on, you don't really want to incentivize people to cross state borders in the hope that that could increase their chances of accessing a scarce resource.

Harald, I think your experience has been pretty unique. You are German, but you've done research in the UK, and now you're in the US. How do you think this sort of background has colored your view on how different countries are approaching COVID-19? Do you see certain countries faring better than others and, if so, why?

One way where it shows is probably my take on how we celebrate heroism here. Don't get me wrong, there are, indeed, a lot of people in healthcare—and also outside of it—who are doing truly heroic things. I admire them endlessly, and I admire a lot in the American can-do spirit, all the appeals to rise to the challenge, and to get through this. But as a humble resident alien benchmarked to European safety nets (not that everything is going swimmingly in all of Europe, of course!), I am also often just taken aback by how much the conditions that make these heroic deeds necessary are just taken for granted. Yes, we should celebrate heroes, but there also has to be a place for—frankly—outrage at the conditions that Covid-19 surfaces. Not blind-rage style outrage, but focused, relentlessly constructive outrage. I get how this is hard, and that in times of crisis it's important to rally around the flag. But the end here can't be that we just slow clap the Tom Cruises of health care into stardom like in the final scenes of every other Hollywood disaster movie, and celebrate individuals' deeds against the odds. We need to pay a lot of attention to the underlying structures that make heroic efforts necessary.

A related point is the expectations that are raised with appeals to heroism. My colleague Anna Wexler wrote an excellent piece in the Boston Globe about this. Yes, nurses are heroic for going to work in a setting where the government fails to protect their basic needs through appropriate planning. But we also need to pay attention to the fact that, as Anna rightly puts it, many health workers feel more like lambs being sent to slaughter—did I mention there is a place for outrage here?

Finally, I mentioned I live in New York City. We have this clapping thing going on here at seven every night. It's loud and a bit freaky in the sense that it sounds as if there are about 20 times more people than you see. And you mostly just see silhouettes. No white people, brown people, black people, just people. Every night I try to figure out what is going on with this. Why are we doing this? What's happening here? It has so many different things going on. Yes, we are thanking the essential workers. But there's also defiance. Anger. Just being jubilant for a moment. Whatever you Rorschach in. And underneath all that, there's a very basic and really quite moving connection to others as you clap, holler, whatever it is that you're doing. Almost mechanical, in the same sense as when you pluck, say, a G on a D-string of an instrument, and then see the open G string resonate. Sometimes you also hear an Ambulance siren in the middle of it. When you asked just now whether other countries do things better, in that moment when we're all at one in clapping, but also still need to wonder if the person in the ambulance will be able to afford their care, it just comes back to universal health coverage and equitable social support systems. Whether you call it recognizing the right to health or understanding what it means to be with others as you clap at one, it's striking that so many other countries are better at appreciating our fundamental human connectedness and vulnerability.

The World Health Organization's actions have been controversial amid the pandemic. How will the pandemic shift the current state of global health governance, in your opinion?

How it will shift it, I have no idea. There are a lot of moving balls in play at the moment. And I'm not sure I can say much in terms of how it should shift, either. Except to say that what does seem clear is that COVID shows us there is an urgent need for global health governance at the supranational level. As is often said, and as we've just experienced, viruses don't respect borders. So, trying to tackle them at a national level alone is as naïve as it is to cut funding for the WHO, instead of working constructively to improve its function.

When we emerge from the COVID-19 pandemic, what are some key lessons you think the world should learn?

There seem to be two types of lessons. The first one is directly COVID-related. We had to figure out infection rates, how to develop treatments and vaccines, how to allocate PPE, implement social distancing, testing, contact tracing, and all that. While the scale is unprecedented, we also had to do many such things before, and will need to do them again with new pandemics. So, there are many process lessons, and these need to include holding leaders accountable for omitted actions they could reasonably have taken. But the far more important lessons seem to me to come from seeing COVID-19 as a heuristic.

What COVID-19 has made irrefutably clear is the intricate connection between health and wealth, and how unequally both are distributed in the US. So, number one, there's the importance of meaningful and affordable universal health insurance, with a system that, among other things, doesn't break down the way it did here for many people who lost health insurance with their jobs. Secondly, understanding the lessons that COVID is revealing about the connection of health and place is just as critical, and that requires robust and genuine engagement with the social determinants of health. And third, and also closely related, are the broader social justice implications. One of my personal heroes in public health is Rudolf Virchow, who made the point that medicine is a social science, and politics is nothing more than medicine on a grand scale. We just can't go on and on to lament that worse off people are less healthy because of higher risk factors: we need to look beyond the causes, to the causes of the causes, and pay particular attention to differences across racial groups. It's just outrageous that in one of the richest countries on the planet, we have differences in life expectancy in cities like New York or Chicago of up to 30 years, with these differences often tracking income and racial groups.

Article

Confronting Death: End-Of-Life Care in Classical Antiquity

Shaan Bhandarkar*

The advent of novel medical technology such as CRISPR-Cas9 gene therapies has emboldened the resolve of medicine to prolong life. Despite the fanatic hopes that one day we might be able to reverse the aging process, that day has not arrived and one harsh reality remains: death. Our society mostly views life and death as binary ideas, with life having to be enjoyed to the fullest before an inevitable death. However, what happens right at the precipice of the transition from life to death? Physicians and loved ones face a paramount, but often stigmatized task of deciding how to ensure the quality of life in a patient's final days. Yet, the dialogue around end-of-life care can seem (and understandably) as the antithesis to the curative purpose of medicine and has thus not reached a true level of transparency. Nevertheless, since death is a societal constant, these decision-making processes have existed for as long as the practice of medicine has. The first formal precursors of end-of-life care, as the analogs of palliative care and euthanasia, materialized in the ancient Classical world of the Greeks and Romans. A synergy of Hippocratic medicine, laws, and philosophy formed a framework for the first public considerations of a previously tabooed topic. Through further investigation, we find that these very institutions have left a legacy that still influences modern discourse on end-of-life considerations.

From the ambitious Hippocratics to the highly-specialized physicians of the modern world, confronting the implications of death has been an age-old conundrum in medicine. By its very definition, death may even present itself as the very antithesis of the purpose of medicine. While the topic may thus be a source of hesitation, civilizations have had to grapple with the eventuality of death regardless. Some cultures like the ancient Egyptians viewed death as merely a part of the journey, consoled by the potential of a serene experience in the afterlife ("Life After Death"). Others, such as societies in Medieval Europe, faced a harsher reality of indiscriminate death during outbreaks of the bubonic plague. This personified "Black Death" proved to be a social constant that would retract the gift of life from anyone; nobody, regardless of social class or morality, would be spared from its clutches ("Death through Ages"). Far transcending a mere clinical pronouncement, death is a sociocultural construct that has shaped humanity's perspective on life for centuries.

Medicine has long averted a thorough and transparent physician-patient dialogue about death, but end-of-life care has always been a prominent consideration in the field. Two approaches in modern medicine have been the most relevant to end-of-life care across cultures: palliative care and euthanasia. Palliative care entails the alleviation of pain and other symptoms until death naturally occurs, while euthanasia hastens death to curtail further pain and suffering. Modern physicians may actually practice palliative care at any time of diagnosis as it is more of a style of healthcare. The prominence of palliative care close to the end of a patient's life in places like hospices still cannot be understated. However, while palliative care promises an alleviation of pain, terminal patients could likely endure pain far more overwhelming than any non-lethal dose of morphine or other pain-relief medications can manage. Physicians throughout history have controversially resorted to euthanasia to allow patients to choose how they die. Such practitioners may use either active euthanasia (direct administration of lethal drugs) or passive euthanasia (withdrawal of life-sustaining treatment). The ideals and relevant medical knowledge necessary for palliative care and euthanasia may not have been fully developed in Classical antiquity, but the Greeks and Romans still had to embrace the limitations of their medical knowledge at the time and find a way to care for the dying. Their unique conceptualizations of death, stemming from diverse ideas rooted in philosophy and religion, greatly influenced the development of medical strategies that would be the first notable predecessors to palliative care and euthanasia.

I. Greco-Roman Cultural Conceptions of Death

Greek philosophers typically offered views in favor of assuaging public fears about death. These philosophers agreed that death itself was not a "bad" experience and extended unique consolations to explain this sentiment. Pythagoras believed in the transmigration of the soul, released from the body at death, to a set end point with some potential for preservation of personal identity (Bradley et al. 2012). Epicurus also believed that the soul left the body at death, but he more explicitly defined the state of being dead as "nothing to us," neither involving pain nor pleasure (Bradley et al. 2012). Epicureans cited the true vice of dying and of life overall as pain, which detracted from the chief good of life in their perspective: pleasure. His ideals embraced a greater sensitivity to the social benefits of life (relationships, friendships, etc.) and a greater stimulation of the senses to achieve pleasure. While Epicurus based his argument on life goals and acquisition of pleasure, Socrates analyzed life and death from his purview of societal utility. In Plato's *Apology*, Socrates hypothesized the state of death as either a cessation of consciousness (a "dreamless sleep") or as participation in an impartial afterlife with "just judges"

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(Bradley et al. 2012). With *Apology*'s setting of Socrates's own impending death upon being sentenced by a jury, Socrates accepted his death as a blessing and declared his freedom from the death anxiety that paralyzed his fellow Greeks (Harten 2011). From the persuasion of these eminent philosophers, the Greek people possessed every reason to not fear death.

However, despite our attempts to defer to reason, death is a sensitive matter that does not evoke objectivity. Only 25% of Americans have created living wills to communicate their medical preferences in cases of incapacitation (Novotney 2010). Patients with wills could also change their minds when they face impending death in an emergency. Physicians commonly question the mental competency of the patient in such cases of death anxiety. Even when wills designate a proxy for resuscitation decisions, the ambiguity around a patient's capacity to decide complicates matters. In a 2005 study published in *The Gerontologist*, fewer than 10% of surveyors asserted that they wanted their end-of-life wishes observed exactly (Novotney 2010). This elasticity further frustrates the ethical gridlock physicians must face in end-of-life care. The medical community and patients have both clamored for such "advance directives" in the good faith of promoting patient autonomy and comfort. Socrates, Epicurus, and Pythagoras all delineated a focus on living life as opposed to permitting inevitable death to dictate our actions. Regardless of their various consolations and modern institutions of advance directives, active end-of-life care decisions often transcend philosophy and objectivity due to popular fears of death, in any era.

Juxtaposed with the influence of philosophical insights, Greek religion and mythology further depicted the overall inevitability of death. In Book 11 of Homer's *Odyssey*, the overall story arc of Achilles showed how a life filled with the pursuits of materialistic pleasures and glory could still lead to a reduction of the person to an insubstantial shade of the Underworld. The Underworld rendered all of Achilles's achievements and sacrifices absolutely meaningless. While this outlook may seem pessimistic, the Greek public may well have interpreted this idea in the Epicurean view as further motivation to strive for pleasure so long as their lives continued. Clearly, Achilles and the other souls of the dead would only have this lone consolation of pleasure and self-satisfaction during life to hold on to. Furthermore, Greek mythology strictly chastised ambitions to cheat death. The gods sentenced Sisyphus to Tartarus for tying Hades to a tree, while Zeus vaporized Asclepius with a lightning bolt when he tried to resurrect the dead with his divine powers of healing. For mortal or immortal beings alike, the idea of avoiding death presented itself as a cultural taboo. It then makes sense that Greek philosophers and the public focused on how to best live life before death, a sentiment that the Romans later inherited.

The heavy stratification of Roman society offers a source for additional insight into how factors like race and socioeconomic status affected cultural perceptions of death. Lucretius, as a true Epicurean, wrote in his *De Rerum Natura* that "it is irrational to fear death as we will not be present to experience it." In Poem 11 of his *Odes* Book 1, Horace scribed his famous "carpe diem" (seize the day) line with an Epicurean view of making the most of today due to our inability to see a guaranteed tomorrow. In this idea of celebrating life by enjoying the present, other Roman authors like Petronius have mocked the inherent disparities in this celebration based on socioeconomic status. In the *Satyricon*, Petronius's pretentious character of Trimalchio mentioned the passing of his friend and that "too many doctors did away with him, or rather, his time had come, for a doctor's not good for anything except for a consolation to your mind!" At his lavish dinner, Trimalchio later revealed his entire will and aspirations for his tombstone to span hundreds of acres, luxuries that would be inaccessible to impoverished Romans. When grappling with death, the Romans clearly believed the remembrance of life could provide a consolation, at least more so than medicine could (Michels 1955). Overall, the Romans also displayed far more skepticism in the merits of medicine. This resulted in the majority of Greek Hippocratic doctors being slaves who served Roman families as physicians, which introduced a further element of racial tension. Reputed statesman and known anti-Hellene, Cato the Elder, would instruct his son that Greek physicians took an oath to never properly treat their dying enemies and compiled his own list of remedies for his family members.

Religious, racial, and socioeconomic disparities still do persist in modern end-of-life care. While Greek religion proved to be unanimous in its day-to-day implications for citizens, religion bears a complicated relationship with medicine today. The 1910 Flexner report, a formative document in the development of modern medicine, dictated that religion should have no place in medicine (Puchalski 2010). In fact, Flexner argued that philosophical and theological considerations could compromise objectivity in medicine. However, religious beliefs still have a strong influence on end-of-life care decisions (Chakraborty et al. 2017), a reality the medical community is considering to this day. In other cases, end-of-life care commonly draws from ancient Greek philosophical ideas of attending to the comfort and emotional needs of the patient. Hospice care now commonly incorporates spiritual counseling for dying patients. To match the diverse cultural beliefs of patients, current advocates are trying to make hospice care more accessible to patients of all racial and socioeconomic backgrounds. Unfortunately, researchers have cited significant discrepancies in access to opioid-based medicines and quality of care in minority neighborhoods (Johnson 2013). Mistrust in the American healthcare system for past injustices like Tuskegee exacerbates this situation, especially given that hospice care could be conflated with a discriminatory foregoing of curative care. Facing similar parameters with conceptions of death and disparities in care as their modern counterparts, Greek and Roman healers nevertheless forged ahead with advances in medicine that would prove to be advantageous for future end-of-life care strategies.

II. Palliative Care: Pain is the Real Enemy

Greek spiritual healing methods exemplified the holistic aspects of palliative care that are practiced to this day. Striving for a more comfortable patient experience, proponents of palliative care at modern hospices encourage outlets for spiritual support, psychosocial support, physical therapy, among other methods. Similarly, the healing temples of Asclepius throughout ancient Greece advertised the healing process as a life-changing experience. A visual spectacle of anatomical votives spread out over the walls and other offerings clustered at the foot of the Temple of Asclepius would greet visitors, serving as a testament to the divinely-ordained success of the experience ("Faith Healing in Ancient Greece"). Yet, according to the account of a tablet belonging to a patient known as Marcus Julius Apellas at Epidaurus, the patient would not be fully admitted to the temple at first. The patient would first have to be cleansed and ceremoniously bathed in a sacred well. Then, the Asclepian priests would proceed with a ritual at the *abaton* while the fumes of incense enticed the patients to sleep in the crowded temple and eagerly await Asclepius's arrival into their dreams ("Faith Healing in Ancient Greece"). The additional use of snakes by the physician-priests during this event bolstered the theatricality and apparent divinity of these methods.

While Apellas noted his vision of Asclepius to be the crux of the healing experience (when the god suggested a regimen for him to regain his health), his overall experience at Epidaurus did not finish there. A gymnasium nearby allowed patients to follow whatever physical regimen Asclepius may have prescribed. Alterations of the temperature and pressure of water for bathing patients suggest some early form of hydrotherapy, methods which would be further developed in the Roman public *thermae* ("Faith Healing in Ancient Greece"). In Epidaurus, a theater stood only a quarter of a mile away from the *abaton*. Two statues resembling Asclepius and Hygeia were excavated near the *skene* of the theater complex, further implicating the therapeutic relevance of the theater. It is further known that the peak of medical tourism at Epidaurus coincided with the rise of dramatists like Sophocles, Euripides, and Menander, all three of whom included mentions of Ascelpius and his ability to heal any ailment in their scripts (Robinson 1978). While this indicates an attempt to further implant the idea of Ascelpius's legitimacy into the minds of the visitors, some historians have even pointed to a belief at the time in the cathartic potential of watching tragedies.

Modern hospices have also adopted these approaches of physical therapy, hydrotherapy, and music/art therapy to set up a similarly positive ambience of healing. Just as the healing experience was transcendental for Asclepian patients, hospices aim to help patients achieve self-actualization and find meaning in life (Richardson 2014). Hospice research into pain modulation suggests that art and music can be used to divert the patient's attention to their pain. In more profound ways, art and music with life themes enable patients to invest in their own pain relief and to be at peace with impending death (Trauger-Querry and Higachi 1997). Hydrotherapy claims an even richer history of use in modern medicine. President Franklin Delano Roosevelt became a staunch believer in hydrotherapy after his polio diagnosis and created a hydrotherapy pain relief center for young polio patients in Well Springs, Georgia. Hospice care has adopted hydrotherapy for its benefits in assisting patients through relief of pain, aching muscles, and stiff limbs ("Hydrotherapy"). Ancient emphasis on physical therapy has also translated into a major aspect of current healthcare, both for preventative and palliative purposes.

In addition to the spiritual precedents for palliative care, the Hippocratics also contributed relevant medical insights to be used in union with Asclepian healing methods. The *Decorum* treatise of the Hippocratic corpus prioritizes the comfort and cooperation of the patient at whatever cost. Unfortunately, to this end, the author suggested that the physician "console [the patient] with solicitude and attention, revealing nothing of his future or present condition," mirroring the emotional turmoil physicians face in disclosing terminal diagnoses. Despite this hesitation, the Hippocratics emphasized creating a natural harmony between the patient and their surrounding environment to ensure comfort. In the *Airs, Waters, and Places* treatise, Hippocrates pointed to seasonal and climate changes as catalysts for discomfort and sickness (Hippocrates et al. 1983). The *Dreams* treatise further legitimized mental well-being to an extent by claiming that mental processes retain some influence on physiological conditions. As believers in the "healthy mind, healthy body" mantra, Hippocratic doctors thus became vigilant of the mental or emotional output of their patients to develop better diagnoses or treatment regimens. The Hippocratics' proposition of physical and dietary regimens for physical benefits, especially for physical athletes, also points to an analog between Hippocratic regimens and modern physical therapy. Modern end-of-life care still attempts to sync the body and mind to attune the patient to impending death. Alluding to an ancient analog to clinical pain relief, Galen also mentioned an opioid-based transdermal treatment in his commentaries, the "Fuscum Olympionico inscriptum," that the Hippocratics used to relieve pain for athletes (Bartels et al. 2006). While transdermal administration is not ideal for quick pain relief in terminal patients, palliative care physicians still use strong subcutaneous opioid-based treatments like morphine (Harman et al. 2020). In physician aid-in-dying (PAD), physicians opt to offer terminal sedation with opioids so that patients may pass away painlessly in their sleep. In doing so, physicians have repurposed the medical insights of the Greeks to the delicate psychosocial event of active dying.

While both the Hippocratics and Asclepian priest healers forwarded treatment strategies relevant to palliative care, the frequency of such strategies being used in end-of-life care at the time is dubious. The Hippocratic authors of the treatises *Decorum* and *The Science of Medicine* valued the idea of a prognosis, as an accurate prognosis provided credibility to the physician. However, Hippocratic physicians also used prognoses as prophylactics against treating patients that would probably die under their care, to prevent damaging their reputation. The *Decorum* treatise even advised physicians to not trust their healthy patients in non-terminal cases, in case they did not cooperate with the physician's instructions and the blame was misattributed to the physician. As for the vaunted physician-priests, the temples of Asclepius at Epidaurus and Cos forbade anyone from dying in the vicinity of the temple, again reinforcing a cultural taboo around acknowledging the inevitable presence of death explicitly in the environment of healing. In Ancient Greece, families of the patients thus reserved great autonomy in presiding over the final days of their dying relatives. According to Socrates, Greeks about to die would have to "settle their affairs," which included entrusting their children to a family member, heartfelt farewells to loved ones, and prayers to Hades for safe passage in the Underworld (Smith 1870). Greek families would then individually arrange for the disposal of bodies, once the soul (*psyche*) was thought to have left the body through the mouth.

Healing temple practices and other precursors to palliative care did not feature as prominently in Roman medicine. Roman medicine found its application far more frequently on the battlefield, and the government allocated far more resources to aiding the injured as opposed to terminally-ill citizens. The public baths (*thermae*), however, did serve as a staple for public health care and also as a shared social experience for Romans. Hippocratics believed in "restorative bathing" and many of their works proposed hot water springs as key to balancing the natural fluids of the body (in accordance with humoral theory) and sulfurous springs as beneficial for skin diseases, all ideas that were adapted for Roman baths. Yet, Roman hydrotherapy more likely corresponded to a cultural emphasis on hygiene and regimens than on palliative functions. The overall atmosphere of societal distrust towards medicine also probably contributed to Roman families only being able to trust themselves to undertake end-of-life preparations. Similar to the Greeks, Roman families would share tender moments and gather around their dying loved ones in their final days. The Romans also believed the soul (*anima*) left the body at death and some Romans would elect relatives to kiss their dying loved one to "catch their soul" (Smith 1870). This same relative would close the eyes of the deceased and then lead the preparation of the body for the Underworld. For both the Greeks and Romans, the public divorced the objectivity of medicine from final rites probably due to distrust for the field's ability to help in a sensitive manner at the time. Greek and Roman culture unravelled the human aspect that was missing in ancient medicine, expressing the unique needs of a patient and their family in end-of-life care. In the modern era, hospices prioritize patient autonomy and commonly facilitate accomodations for funeral services. Hospice care also treats families as units and offers bereavement services far beyond a patient's death. Current end-of-life care pushes the boundaries of Flexner's vision of medicine as a field of objectivity by offering the connection and support that Greek and Roman families needed from the fallout of a loved one's passing.

III. Euthanasia: Right to the "Good Death"

The ancient Greeks did not dictate any specific laws about euthanasia, but various literary and philosophical allusions point to a tolerance of the practice. Generally, Greeks condemned suicide in most circumstances as a betrayal of the gods and disturbance in the natural order. However, most authors and philosophers did empathize with cases of insurmountable pain. Aeschylus's character in *Prometheus Bound* claimed that "it was better to die once and for all than to drag out my lingering days in anguish." But, Sophocles, a known religious conservative at the time, portrayed Hyllus's consideration of helping his father Heracles die to free him from pain as equivalent to murder (Papadimitriou et al. 2007). The more active role of an accomplice to active euthanasia (similar to modern physician aid-in-dying) seems to incite hesitation in these dramatists. Philosophical insights further reflect such disparities in separating euthanasia from murder or suicide. Plato, levying the Socratic view of utility, believed that citizens were allowed (and even obligated) to undertake euthanasia if they became of less use to themselves and to the state. Using a justice-based argument in *Laws IV*, Plato argued that a just society should allow an individual citizen to be perpetually happy and free from pain. At the same time, in other parts of *Laws*, Plato did not condone physicians directly administering poisons to patients wishing to die (Papadimitriou et al. 2007). In *Phaedo*, Plato even advised in such cases that the presiding physicians be put to death and the euthanized citizens be buried in unmarked graves. Even while the Hippocratic oath forbade provision of a deadly drug to anybody who requested it, *The Art* suggested that physicians were not obligated to continue treatment for an incurable disease and could have thus engaged in passive euthanasia (Papadimitriou et al. 2007).

While most Greek writers never explicitly discussed actual acceptable methods of carrying out euthanasia, the Greek public knew about hemlock poison and its use in the justice system. The Athenian jury prescribed hemlock as the agent of Socrates's execution for "corrupting" the Athenian youth. The jury named Socrates as his own executioner as a pitiful consolation for him to escape the shame of his allegations with dignity. The Greeks accepted death by hemlock poisoning in such cases of intolerable existence, whether derived from shameful allegations or overwhelming pain. According to Livy in *Ab Urbe Condita Libri*, the Romans explicitly accepted passive euthanasia by hemlock poisoning as long as the ailing citizen (unless they were a slave, soldier, or a perpetrator of a capital crime) applied to the Senate and received approval (Hayes 2008). In the case of soldiers, the Roman military scoffed at euthanasia in most cases as betrayal of the commonwealth. However, the Romans and the Greek city-states both encouraged soldiers to consume hemlock poison if ever surrounded by an enemy on the battlefield. The Homeric trope of heroic self-sacrifice would grant honor and glory to a soldier in this situation, while also pressuring the soldier to commit suicide or else face the shame of his supervisors and his people. Greco-Roman societies placed a lot of emphasis on justifying euthanasia based on societal acceptability rather than individual volition, with rare private exceptions. Despite the publicly expressed hesitations, Plato's and Hippocrates's subtle suggestions of honoring patients' wishes to die implies that hemlock poisoning could have been an unwritten and privately accepted way to choose to die. Modern physicians often also shy away from asserting bold opinions about physician aid-in-dying, a prescription of a lethal drug to terminal patients, due to fears of professional repercussions. However, physicians also respect patient autonomy and rejections of medical intervention like with "do not resuscitate" orders. PAD is legal in nine US states and the District of Columbia, and surveys show that the public and healthcare officials support the use of PAD in certain cases of "unrelenting suffering" (Steinbock 2019).

IV. Modern Echoes and Final Thoughts

Palliative care and euthanasia persist in current medicine as the two most prominent features of end-of-life care, but with varying controversy. Right-to-die movements in the early 21st century especially illuminated the urgency of the issue of euthanasia. Dr. Kevorkian's activism and chilling conviction that euthanasia constituted the duty of all physicians struck the ethical core of what it meant to be a doctor. Kevorkian launched the initial "right-to-die" movement, claiming that patients should retain as much control of their death as their life. Kevorkian used a Platonian-like argument to claim that rejecting euthanasia could preclude a patient from acheiving happiness and autonomy in their end-of-life care. The case of Teri Schiavo and the legal dispute between her husband and her parents, regarding withdrawal of her feeding tube due to her persistent vegetative state, expanded the scope of cases where euthanasia could apply. Schiavo's case highlighted the ambiguity in which family members would be the surrogate in decision-making, as well as overall questions of accountability. Especially relevant to the case, the medical community could not agree on whether Schiavo's questionable state of consciousness actually qualified as living or as clinical, whole brain death. The definition of death as a cessation of brain activity or circulation could be evolving due to developments in neuroscience, which could call such judgements into question in the future. However, the day-to-day decisions that physicians must make in end-of-life care today are more urgent than philosophical; real lives are at stake and these questions must be answered given the extent of our current knowledge.

In other words, physicians have become more cognizant of the limitations of their knowledge in the overall field, just as the Hippocratic physicians had to come to terms with. Even in an era that has witnessed the advent of breakthrough gene therapies, medicine will continue to bear limitations. Medicine can inflict more pain than good in certain circumstances. With the idea of inevitable death, palliative care represents taking an active stance in alleviating pain, but with the physician being an arbiter for the timeline between life and death. Euthanasia transfers this same accountability to the free will of the patient or their family. In both cases, the medical community has not achieved transparent and sensitive communication of death with specialization in end-of-life care. Hospices and other such centers have inherited this mission with an Epicurean spirit of claiming that "it's not about how you die, but how you live." While the Greeks and Romans did not trust medicine enough to truly intervene in cases of impending death, we can learn from both their misconceptions and novel insights into palliative care and euthanasia. The holistic methods of Greek healing are widely used in hospices these days, and many countries like the Netherlands are using Platonian arguments of volition and justice to regulate legal euthanasia. Current medicine treats terminal patients as a list of symptoms with less regard for the patient's social narrative, essentially defined by their pathologies and confined by an expiration date given to their bodies. Modern Flexnerian medicine seems to favor depersonalized practitioners that become less empathetic and more tolerant in their education to daily display of morbidity (Igde and Sahin 2017). Medicine needs to adapt to tackle the unique psychosocial challenges of death for patients and their families. We can hopefully put the "care" back into healthcare by adopting the humanistic and personal attributes of Classical healing into our future considerations of end-of-life care.

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Article

Ethical Implications of Psychedelic Enhancement

Christina Stankey*

Psychedelic moral enhancement refers to the use of guided psychedelic experience to improve an individual's moral disposition. Proponents of moral enhancement argue that it is possible based on recent scientific evidence and necessary given the cooperation necessary to address grave issues in society. However, arguments for psychedelic moral enhancement do not account for the ways in which psychedelic experience circumvents central features of human life, such as physicality and relationality. As these features provide the backdrop of and purpose for moral development, to exclude them undermines the conditions that foster human flourishing and make moral choice meaningful. Therefore, psychedelic moral enhancement is not fully compatible with a genuinely human anthropology.

Ethical Implications of Psychedelic Enhancement

There exists a compound that offers those under its influence creativity, transcendence, peace, and a deep sense of interconnectedness to others and to the world. Its name is lysergic acid diethylamide (LSD), and it is a psychedelic. Members of the scientific community have heralded psychedelics as a key to unlocking the secrets of consciousness. Members of the counterculture – and, to a growing extent, the mainstream culture – have proclaimed these drugs a key to unlocking the secrets of life. Psychedelic drugs profoundly alter neural functioning, inducing formation of new patterns of activity and connectivity that persist long after the psychedelic trip has ended. Harnessing these effects, psychedelic-assisted psychotherapy has proven a highly effective intervention for addiction and anxiety, among other psychiatric disorders (Nichols 2016). Benefits extend beyond the therapeutic realm; in studies of healthy volunteers under carefully controlled conditions, psychedelics appear to induce neurogenesis, occasion mystical experiences, and lead to beneficial alterations in personality and character traits (Griffiths 2006). With these effects, some scholars have suggested the use of psychedelics for cognitive, spiritual, and moral enhancement. However, enthusiastic endorsements of psychedelic enhancement often fail to consider the psychological risks and philosophical implications of this practice. In this paper, I will argue that psychedelics ought not to be used for enhancement insofar as their use undercuts both the process and the aim of human striving.

Arguments for Psychedelic Moral Enhancement

The idea of moral bioenhancement as a means of promoting social harmony has gained traction in recent years. After Thomas Douglas coined the term in 2008, a number of bioethicists have argued for moral enhancement by pointing to the grave dangers which issues such as violence, poverty, and climate change pose to the modern world, and by noting the need for global cooperation to remedy these evils (Douglas 2008). One scholar, Brian Earp, observes that much of the current literature describes techniques of bioenhancement that are unrealistic insofar as they propose to alter one aspect of behavior while failing to consider the complexity of the brain and the world that humans navigate (Earp 2018). He instead provides three conditions for a bioenhancer worthy of the name: (1) that the intervention is biological in nature and has biological effects; (2) that the intervention does not treat one capacity in isolation from interconnected ones; and (3) that the intervention acts in a "robust, sustained, flexible-across-contexts sort of way, without simply collapsing into Ritalin-style cognitive enhancement" (Earp 2018). These conditions make room for spiritually induced chemical experiences, including those which psychedelics occasion, because these experiences can transform the ways in which individuals evaluate the world and their roles within it. Earp supplies two additional conditions for use of psychedelics in bioenhancement: (1) that psychedelics are administered only to autonomous, consenting individuals in properly controlled settings, and (2) that psychedelics should be treated only as adjuncts to efforts at moral improvement, facilitating experiences that bring deeper insight into human life and are integrated into the fabric of an individual's character (Earp 2018). Earp thus paints a powerful picture of the promise of psychedelics to bolster human goodness in a way that works with an individual's will rather than superseding it. Other scientists, philosophers, and popular writers have similarly cited psychedelic experience as an efficacious and morally defensible means to personal improvement.

The question naturally arises as to whether psychedelics can deliver the promised benefits. If anything, based on current scientific evidence, scholars may regard the enhancing power of psychedelics as too little. A resurgence of interest in psychedelics has taken hold of researchers in the fields of neuroscience and psychiatry in the past two decades, leading to a spate of

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striking findings. In 2006, Roland Griffiths published a landmark piece showing that psilocybin could reliably induce "mystical-type" experiences in healthy volunteers, many of whom described an extreme sense of awe at feeling themselves at one with the world and in union with the transcendent (Griffiths 2006). Six months later, more than two thirds of participants ranked the single psilocybin session as one of their five most significant lifetime spiritual experiences, and both self-reports and behavioral evaluations suggested that the experience increased measures such as compassion and inner peace (Griffiths 2006). Further studies indicated that psilocybin experiences can enhance social empathy and facilitate lasting increases in the personality trait of openness, that ayahuasca can augment the divergent thinking style vital to creative problem solving while decreasing patterns of conventional convergent thinking responsible for functional fixedness, and that LSD can accelerate learning (MacLean 2011; Pokorney 2017; Kuypers 2016; Romano 2010). These findings confirm that psychedelics act as valid bioenhancers; by nature biochemical, the drugs augment a broad range of human capacities. More than that, psychedelics appear to support patterns of thought consistent with growth of moral character by disposing their users to identify with individuals or principles outside of themselves and to evaluate information necessary for prudent judgment. With this promise – to become kinder, more intellectually free, and more attuned to what is sacred – who could refuse psychedelic enhancement?

At its heart, this raises questions of object, end, and circumstance. These terms refer to the immediate act being chosen, the intention of this choice, and the conditions under which it is chosen, and together comprise a framework to evaluate the ethics of an action (CCC 1749). Those in favor of psychedelics would argue that to elect for psychedelic enhancement is to foster a mindset conducive to behaving ethically, that this decision is desirable insofar as it promotes the cooperation necessary to build more meaningful interpersonal relationships and to address pressing societal or global issues, and that use of psychedelics for this purpose is moral so long as it occurs in consenting individuals in environments constructed to help users gain insight that may be integrated into their daily lives to foster moral improvement. I will argue instead that both the object (psychedelic experience) and the end (enhancement) of this intervention prove suspect insofar as they represent a desire to overcome human limitations without considering the good that these limitations may hold. I will also briefly address the circumstances of psychedelic enhancement, proposing that the conditions of distribution undermine social cohesion.

The Object: Psychedelic Experience

The object of psychedelic moral enhancement is, most simply, psychedelic experience, for a user chooses psychedelic experience to reach the end of moral enhancement. Neurobiology is relevant here in understanding the full import of psychedelic use. These drugs exert their effects by altering activity of the default mode network, a web of nodes that interconnects many neural systems (Nichols 2016). The default mode network helps the brain fit stimuli into paradigms established through previous experiences, such that each new experience is perceived only indirectly, filtered through the sieve of the past (Pollan 2018). With its role in directing mental traffic, the default mode network helps construct a person's self-image and allows her to understand "fundamental dualities of consciousness (i.e., self vs. other, subject vs. object and internal vs. external)" (Carhart-Harris 2014). Psychedelic drugs reduce default mode network activity by binding the serotonin 5-hydroxytryptamine 2A receptor in the cerebral cortex, disrupting the deeply ingrained patterns of thought that underpin a person's understanding of the world and her place in it (Carhart-Harris 2014). With this organizing principle removed, a torrent of neural activity is unleashed and "resets" circuits of connectivity both pathological and normal, which may treat the root cause of some psychiatric disorders and grant the mind an unfiltered glimpse of the world (Pollan 2018). In functional magnetic resonance imaging studies, the changes induced by psychedelics appear indistinguishable from those prompted by intense prayer or meditation and seem to place the brain in a state resembling that of a child's brain, in which the default mode network is incompletely developed (Pollan 2018). Thus, current theory holds that psychedelic drugs induce their effects by removing the filter imposed by the default mode network, facilitating openness to a broader horizon of reality.

Just as psychedelic drugs generate neurological states that mimic those observed in mystics, so too may individuals on psychedelic trips in certain settings gain mystical insight. Some emphasize encountering a presence during their trips that is at once transcendent and personal: "My awareness was flooded with love, beauty, and peace beyond anything I ever had known or imagined to be possible," wrote Bill Richards, now a preeminent psychedelic researcher, of his first psilocybin trip (Pollan 2018). Others describe glimpsing the vastness and mystery of the world while also intuiting its profound interconnectedness and providential nature. The author Aldous Huxley writes in The Doors of Perception,

> The man who comes back through the Door in the Wall will never be quite the same as the man who went out. He will be wiser but less cocksure, happier but less self-satisfied, humbled in acknowledging his ignorance yet better equipped to understand the relationship of words to things, of systematic reasoning to the unfathomable Mystery which it tries, forever vainly, to comprehend. (Huxley 1954)

These accounts convey the humility and centeredness that psychedelic experiences can engender when the "I" that defines personal reality temporarily disintegrates, a phenomenon termed "ego death" (Nichols 2016). Those who consume these drugs often describe ego death as profoundly unnerving or deeply painful, but after working through the experience can find it to be remarkably meaningful (Griffiths 2006). Overall, then, psychedelics promise to foster a charmed life of mental harmony that is neither an analgesic nor a cheap thrill. Rather, these drugs rewire the brain to a state that is seemingly happier, more functional, and more able to experience transcendence. And yet, these promises – prayer in a pill, insight on demand, and encounters with the divine mediated by chemicals – are lacking in the very feature that would make them meaningful: humanity. That psychedelic enhancement is incommensurable with genuinely human growth becomes apparent upon considering the risks of psychedelic use and upon examining the presuppositions made in arguments for this form of moral enhancement.

First among the risks of psychedelics is that of negative psychological alterations that harm individuals and their relationships. This concern has long been present in the public mind; legislators in the United States declared psychedelics illegal under the 1970 Controlled Substances Act in reaction to well-publicized bad trips and the self-proclaimed connection between psychedelic use and the counterculture, classifying them with other drugs considered to have high abuse potential and no medical use (Pollan 2018). This rationale is scientifically incorrect: the drugs have a remarkably low toxicity, are not addictive, and have multiple therapeutic applications (Nichols 2016). Yet while the drugs are not physically destructive, the question remains as to whether they should be used for enhancement purposes. One response may be that the significant, though rare, hazard that psychedelics will induce long-term psychosis makes their use unjustifiable for enhancement purposes, since the drugs would introduce risk for a benefit that goes beyond that of maintaining health (Nichols 2016). However, this reasoning is flawed insofar as the chance of this outcome is quite small when psychedelic drugs are used in controlled environments, and individuals often legitimately assume risk for ends of pleasure, enjoyment, or cosmetic purposes; even a wholesome family road trip carries with it the danger of a devastating car crash. A more common and perhaps more pernicious outcome is that individuals often return from psychedelic trips with massively inflated egos, smug in the knowledge that they have gained insight into the secrets of life (Pollan 2018). This risk appears appreciable since it is widely reported, although rarely quantified in research findings. Cruel in its irony, this outcome flies directly in the face of psychedelic moral enhancement's goal, which is to create individuals better able to engage in interpersonal interactions for altruistic purposes because they have glimpsed the unique value of each part of the interconnected whole of the universe. The devastating personal effects that this ego expansion has been observed to cause – destroying an individual's present relationships and placing obstacles in the way of future ones as a result of irrational assertions or stubborn rejection of help – appear incommensurate with the hoped-for benefits. In a world already pervaded by loneliness, the risk of isolation that arises from psychedelic use ought to give pause to those who argue for enhancement of social cohesiveness with these drugs.

A second risk-founded argument against psychedelics arises from the manner in which these drugs upset the balance among brain systems that has been wired into the human psyche. The default mode network was evolutionarily favored because it provided an adaptive advantage, allowing individuals to develop paradigms and engage in "reality testing," thus promoting a coherent understanding of themselves and their place in the world (Carhart-Harris 2014). When psychedelics exert their effects by disrupting the function of this system, they foster "magical thinking" in its place, in which individuals drunkenly rummage through the contents of their consciousness, piecing together stories or ideas without assessing them against the backdrop of reality (Carhart-Harris 2014). Psychedelic researchers and enthusiasts laud the way in which this process rewires the brain to resemble patterns of connectivity typical of the brains of resilient individuals and engenders creative solutions in the face of functional fixedness (Pollan 2018). They also point to the fact that since humans did not evolve to live in the metropolitan environments typical of industrialized societies and that these environments may be conducive to maladaptive patterns of thought, psychedelic use is desirable because it may be able to correct these patterns. However, it is untrue that every maladaptation should be remedied biochemically. While many maladaptive practices can become pathological and thereby merit therapeutic intervention, to seek to overcome every maladaptation through biochemical means would diminish meaningful human experiences. For instance, humans are evolutionarily conditioned to favor foods high in fat, sugar, and salt because these nutrients are vital to health. In the present environment, this trait is maladaptive because cravings for large amounts of these nutrients continue even when they are readily available, potentially resulting in obesity. While the grotesque outcome can be imagined of dependence on biomedical interventions in the healthy or relatively healthy to dampen their desires, most individuals would prefer a world in which delicious food is savored and moderation is encouraged, such that both enjoyment of food and the good of health are preserved. The latter solution is more fully human insofar as it acknowledges that individuals experience natural desires that must be guided and checked by formation of behavior patterns through interpersonal relationships and communal values, rather than suggesting that these desires ought to be suppressed through biochemical manipulation. Similarly, the idea that neurological enhancement is necessary to foster happiness of individuals in modern society simply because they live in modern society ignores the fact that unhappiness arises not just from improper neurological circuits but from their correlates in the external world, a lack of authentic human connection or purpose in life. An adequate response instead requires real solutions for real problems, supporting institutions that promote dignified human lives and relationships rather than seeking chemicals that mimic the brain states occasioned by these goods.

Use of psychedelics to achieve the end of moral enhancement also wrongly grounds moral judgment on mystical experience. Many advocates of psychedelics praise the way in which these drugs make mystical experience accessible to all. Michael Pollan goes so far as to compare Alfred Hofmann, the chemist who discovered LSD, as the founder of a new religion. And yet, Pollan notes,

> If this is a religion, it's one with a significant difference. Typically, only the founder of a religion and perhaps a few early acolytes can lay claim to the kind of authority that flows from a direct experience of the sacred. For everyone coming after, there is the comparatively thin gruel of the stories, the symbolism of the sacrament, and faith. History attenuates the original power of it all, which now must be mediated by the priests. But the extraordinary promise on offer in the Church of Psychedelics is that anyone at any time may gain access to the primary religious experience by means of the sacrament, which happens to be a psychoactive molecule. Faith is rendered superfluous. (Pollan 2018)

This proposal proves appealing insofar as it provides equality in religious experience: no longer are individuals limited in their access to encounters with the divine based on historical, geographical, or cultural circumstances. However, this argument ignores the fundamental reality that humans are shaped by the historical, geographic, and cultural context in which they came into being and now live. Moreover, it seeks to deny the role of faith in spiritual experience and by extension in human life, suggesting that belief can and should be made irrelevant. This denial is inconsistent with a fully human anthropology, given that humans are by nature finite and dependent on others for knowledge, instruction, and fulfillment. Saint John Paul II articulates a position that is more accurate insofar as it acknowledges the necessary and meaningful place of belief, writing,

> In believing, we entrust ourselves to the knowledge acquired by other people. This suggests an important tension. On the one hand, the knowledge acquired through belief can seem an imperfect form of knowledge, to be perfected gradually through personal accumulation of evidence; on the other hand, belief is often humanly richer than mere evidence, because it involves an interpersonal relationship and brings into play not only a person's capacity to know but also the deeper capacity to entrust oneself to others, to enter into a relationship with them which is intimate and enduring. (John Paul II 1998)

Mystery is without a doubt central to human life and relationships; suffering and death generate profound questions of meaning that cannot fully be answered, just as love and friendship spark joy at the beauty and complexity of another. These experiences at their fullest prompt a sharing of life and a deep rootedness in the fabric of interpersonal relationships that Saint John Paul II describes. In contrast, to insist – as many psychedelic enthusiasts do – that mysticism is a fundamental feature of human existence and a foundation for moral reasoning presupposes that an individual's most meaningful experiences occur in isolation from society. Psychedelic trips happen within the confines of an individual's mind and are often described as having a noetic quality, felt at the level of incommunicable intuition rather than as intelligible truth (Pollan 2018). There is guidance but no fixed goal on these lonely journeys; typically, guides advise those under the influence of psychedelics to "trust, let go, and be open" (Pollan 2018). This vision of moral formation paints the individual as a lone journeyer responsible for discovering truth apart from society. In contrast, the conventional image of moral education – a gradual process of a person forming her character and learning to articulate her beliefs through immersion in traditions that express answers to questions of purpose in life given by the wisest minds of the past – places the individual squarely within community, acknowledging that relationality and physicality are intrinsic to human life. Psychedelic enhancement seeks to build up morality atop the hollow ground of gnostic insight. The starting point of this scheme does not stand up to scrutiny. Neither does its end.

The End: Enhancement

The end of psychedelic moral enhancement naturally is enhancement, the use of novel methods to overcome traditional human limitations. Some bioethicists describe family life and academic education as forms of enhancement and note that these institutions have failed to form individuals who adequately respond to modern challenges. However, this argument does not provide a legitimate moral justification for psychedelic enhancement insofar as it does not acknowledge the difference in kind between structural and pharmaceutical interventions. Education certainly improves children and the community by equipping a new generation of individuals to contribute to societal maintenance and betterment. However, in education and similar structural interventions, the "enhancement" occurs through the natural unfolding of individuals' lives within society as older generations fulfill their duty to the next one, giving shape to children morally as well as physically. In contrast, psychedelic enhancement proposes that consenting individuals rely on a biochemical means to reshape themselves as more moral and less immune to the propensity towards selfishness or cruelty that is evident in human life. This promise of a more peaceful, just, and loving world built on the backs of pharmacologically enhanced individuals smacks of dystopia.

Among the most evident dangers of enhancement is the challenge to human freedom. Given that the proposed goal of remedying social ills requires a critical mass of morally enhanced individuals, pressure for psychedelic use may become coercive. However, whether this would result in genuine moral improvement is unclear. The bioethicist and humanist Leon Kass notes that "what is permitted and widely used may become mandatory" in a way that leads to "still greater homogenization of human society – perhaps raising the floor but greatly lowering the ceiling of human possibility, and reducing the likelihood of genuine freedom, individuality, and greatness" (Kass 2003). That enhancement would lead to mediocrity or a diminishment of human life is counterintuitive even while it is empirically observable; social media platforms meant to enhance relationships through ease of communication have in many ways narrowed and flattened dialogue. Similarly, it is unclear that altering neurological processes to lessen the probability of moral depravity will increase the possibility for moral greatness. While fostering moral adequacy in society may allow individuals to turn their attention outwards to combat the dramatic crises of the day, it may also lead to a sense of complacency as moral drama disappears from daily life and character is treated as a matter of technological manipulation rather than as a result of choice. To this end Kass states,

> Biomedical interventions act directly on the human body and mind to bring about their effects on a subject who is not merely passive but who plays no role at all. He can at best feel their effects without understanding their meaning in human terms…the point is less the exertions of good character against hardship, but the manifestations of an alert and self-experiencing agent making his deeds flow intentionally from his willing, knowing, embodied soul. (Kass 2003)

Traditionally, excellence of character is built decision by difficult decision as a person, guided by the example and counsel of others, comes to recognize and love what is good, and thus to choose it habitually. Psychedelic enhancement clearly does not obviate the need for choice, but it does purport to dispose individuals towards goodness by fostering formation of neurological patterns that would otherwise be fashioned through small, repeated moral decisions. This proposed path to moral behavior ignores that fact that morality manifests itself in the routine moments of daily life. The acts of giving wholehearted attention to a friend, tending to a child's needs, or devoting oneself to necessary but thankless work are performed not merely because socially they foster harmony or rationally must be completed, but because they are good in and of themselves and shape the physical and moral lives of those involved. To insist that these actions should be circumvented or improved through neurological enhancement fails to capture their meaning as stepping stones on the path to a good life. Therefore, psychedelic enhancement misses the mark by minimizing minor moral matters; though transforming choice into instinct may ensure more reliable decisions, so too may it empty these decisions of meaning. Severing the heart from the head destroys human life.

The Circumstances: Human Life

While psychedelic enhancement may be rejected on the grounds of its object and end, so too do its circumstance raise cause for concern. Most striking is the problem of distribution. Even if risk to individuals could be lowered to an acceptable level, risk to society would remain because the benefits of enhancement would be distributed among those able to afford the expensive drugs. Given the propensity of individuals to favor those like them in political views, level of education, and the like, current socioeconomic divides could deepen into unbridgeable chasms: as the enhanced come to live more and more different lives materially, cognitively, and culturally from the structurally disadvantaged, the shared features of life that allow one group to identify with another will dwindle. If distribution were equalized, the aforementioned issues would remain of founding moral growth upon mystical insight and pharmaceutical, rather than personal and interpersonal, means. Still more, fostering an ethos of enhancement favors destruction of what the scholar Michael Sandel refers to as the "ethic of giftedness" (Sandel 2004). Sandel suggests that rather than easing the burden on individuals, pursuing enhancement without a sense of humanity engenders a lack of humility, culminating in crushing responsibility and removing the possibility of solace through solidarity. When enhancement is touted as the solution to society's problems, mistakes become shortcomings. Thus, both limited and widespread distribution of psychedelics for the purpose of moral enhancement carry with them risk to society. Further examination of the circumstances of psychedelic use may prove a fruitful source of future discussion insofar as these circumstances provide a common starting point to examine the consequences of moral enhancement through the lenses of several other common ethical frameworks, including utilitarianism, deontology, and virtue ethics.

Conclusion

By proposing to rewire the brains of individuals for the purpose of moral enhancement, supporters of psychedelic enhancement propose an implicit restructuring of society. The reorganization takes a form that is fundamentally isolating: suggesting mystical experience as a foundation for moral judgment and neurological patterns as bedrock for character fails to acknowledge the rootedness of human life in the physical world and in relationships. Every form of enhancement carries with it the sacrifice of some natural experience, and every form of enhancement results in more changes than are strictly sought after. It would be wise not to barter away the fabric of human life for snippets of human goods.

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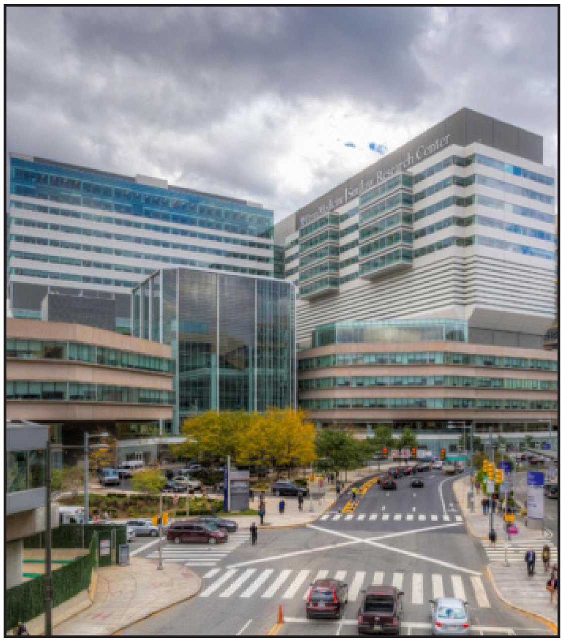

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