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ORIGINAL RESEARCH

The Ethics of Time: Towards Temporal Bioethics

D. Shaw

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Abstract In this paper I discuss the important yet overlooked role played by time in public health ethics, clinical ethics, and personal ethics, and present an exploratory analysis of temporal inequalities and temporal autonomy.

Keywords Ethics · Clinical ethics · Personal ethics · Public health ethics · Time · Temporal

Introduction

We can't live without time, and we can't live outwith it. It governs and delimits our lives, both enabling and constraining our autonomy; our time is limited, and we must do our best with the time that we have. As might be expected, there is a substantial body of philosophical and scientific literature on time. Yet curiously, time has only very rarely been discussed as an important ethical topic (Brink 2011). This may be in large part because time by its very nature is an inescapable part of life, and thus seems unremarkable and unworthy of attention. But time is not only ubiquitous; its very ubiquity raises a variety of fascinating and important ethical issues.

D. Shaw (✉)
Institute for Biomedical Ethics, University of Basel, Bernoullistrasse 28, 4056 Basel, Switzerland
e-mail: David.shaw@unibas.ch

D. Shaw
Care and Public Health Research Institute, Maastricht University, Maastricht, The Netherlands

Time is essential to ethics. Time enables attachment and loss, and decision-making, and regret. With time, you can change your mind. We must each decide what to do with our time, and our decisions affect benefit and harm others, as well as consuming their time to greater or lesser extent. Our available options reduce over time, constraining our autonomy; ultimately time forecloses all options with our deaths. And even when we're alive we can't be in two places at the same time. Deciding what to do and who to do it with or to are important parts of ethics, but equally important is when to perform an action, and for how long, and how long to spend with each person that we care about (or don't care to spend time with). Time also raises issues of justice, as opportunities to use time as we wish—and indeed time alive itself—are not equally distributed.

In this paper I describe and analyse some of these issues, and in particular, how time affects our autonomy, and how exercising our autonomy with regard to time can affect others. Following a brief introduction to time, I proceed from the public to the personal, moving from temporal issues in public health ethics and clinical ethics, to the social level of temporal interaction between citizens.

Public Health Ethics and Temporal Inequalities

Life expectancy is perhaps the most obvious temporal bioethical issue. Everyone knows that we won't all have the same time alive. Sometimes this is due

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to choices, but often time is often distributed unfairly. Differences in life expectancy are often due to health inequalities, which are in turn due to differing socioeconomic determinants of health. Internationally, the difference in life expectancy between nations can be substantial; in Japan, the life expectancy for women is eighty-eight years, while in Chad it is fifty-six years (Worldometers 2022). This means that the average life in the higher income country is close to 60 per cent longer than in the lower income country; or to put it differently, a woman in Chad can expect to get less than two thirds as much time alive as a woman in Japan. Furthermore, the quality as well as the quantity of time is also important; people in higher income countries are generally more likely to enjoy higher amounts of leisure time, and to be more satisfied with the time they spend working (Freeman et al. 2020). Thus there is potentially a double inequality; people in developed countries get more time, and the time they get may be of a higher quality.

These temporal inequalities exist not only between nations but also within countries and even within cities and across neighbourhoods. In England, there is a gap of almost a decade in life expectancy between those living in the lowest and highest socioeconomic groups (ONS 2021). In Glasgow, the male life expectancy in the poorest parts of the city is almost thirty years less than in one of the richest parts, just a mile away. While this disparity in time alive is similar to that between Japan and Chad, it is perhaps worse in the sense that those who have so much more and so much less time live within about a mile of each other, so the inequalities between them are more obvious than between people living on opposite sides of the planet. (Curiously, residents of the richest parts of Glasgow are 30 per cent more likely to die prematurely than well-off people in similar British cities, another so-called "Glasgow Effect" [Shaw 2015]; this phenomenon remains unexplained.)

A related point concerns the extent to which people in lower socioeconomic groups have to adapt their daily schedule to fit poorer employment conditions (Davey 2018). Working nightshift can be very disruptive to both sleep patterns and families and prevent people spending time with their children, yet some people have no choice but to adapt such a work pattern if they wish to remain employed. People in better-paid jobs are more likely to have flexible working arrangements that allow them autonomy in deciding how and where to spend their time. People who are paid more can also choose to work fewer hours, while those on minimum wage might need to work more hours to make ends meet. And of course, the more time they spend at work, the less time there is at home to spend time with children, relax, or do other important tasks. Even within the same socioeconomic groups as their male counterparts women often frequently have less leisure time due to the combination of work and childcare responsibilities, which remain disproportionately borne by females.

While life expectancy is often a matter of the location of one's birth, the (optimal) time of your life is also important; not in the sense of the best time you have, but the time at which your life begins. Life expectancy is much higher in all countries than it was several hundred years ago; in the Middle Ages, the estimated life expectancy was as low as ten to twelve years as many people did not survive childhood (Stephenson 2012). Furthermore, sociopolitical conditions have also altered over time. Until around four hundred years ago, most people lived in poverty or near-poverty, with very little disposable income or leisure time. Women, people of colour, and LGBT people also have many more rights now than they did long ago, meaning that the quality of their time alive is likely to be higher because (in most countries) they no longer face the same level of systematic persecution and oppression.

Another related issue is how much additional life is lost when someone dies because of an unanticipated event. In recent years, the public health emergency of the COVID-19 pandemic focused our attention on the ethics of space, with people confined to their homes and told to keep away from others. Proximity to others risked giving them a virus, which could potentially kill them, so this focus was understandable. Yet time was also vital to the propagation of the virus, and the devastating effects of the pandemic are also quantifiable in terms of time. In contact tracing, people were normally defined as close contacts if they spent at least fifteen minutes within two metres of an infected person; if infected, a person had to quarantine for a set period. These became simple everyday facts, along with the daily infection and death tallies in different countries. But what went largely unremarked was the vast cost of COVID-19 in terms of lost time. A study in the first wave of the pandemic suggested that, despite the misconception that

COVID-19 mainly killed people who were already near the end of life, the average person who died from COVID-19 lost around a decade of time alive (Hanlon et al. 2021). Just a few months into the pandemic, 50,000 people had already died in the United Kingdom, meaning that potentially half a million years of life had been lost; globally this was likely to be three million years at that point. Today, at least six million people have died of COVID-19, meaning that over fifty million years of life may have been lost. And of course, that lost time means that the families and friends of those who died have each lost a decade with the person they loved (Shaw 2020).

Finally, temporal inequalities concern not only those who are alive now but also those who will be born in the future. On a personal level, we know from epigenetics that our lifestyle choices now could help determine our children's level of health and even length of life; in other words, how we spend our time now will have an effect on their time once they are born. But we must also consider wider issues of intergenerational global health over the coming years, decades, and centuries; "the importance of the billions of people in need today pales into relative insignificance when compared with the hundreds of billions of people who will live on this planet in the future" (Shaw and Rich 2015, 2). The lives of future people can be a difficult thing to conceive of; "moral distance" is the phrase sometimes used to label the difficulty some people have in imagining and empathizing with the lives of people who are remote from them. Often, this means people are spatially far away, but moral distance can also operate temporally. The United Nation's 2030 Sustainable Development goals replaced the older Millennium Development Goals, represent a global effort to improve the lives of people currently alive and yet to be born in developing countries. These goals, which include ending poverty and hunger are a laudable effort to reduce inequalities, but they do raise some difficult issues; if they are all achieved, many more people will end up living at the same time than would otherwise have been the case, with considerable pressure on resources. Any attempt to improve the health of future generations must also consider the potential negative effects of doing so; another difficult question is how much of our time we should currently devote to tackling future, rather than present inequalities.

Temporal Issues in Clinical Ethics

Just as life expectancy is an important aspect of public health and public health ethics, so a different set of concerns regarding time (and time left alive) is raised in clinical ethics. Perhaps the most obvious is speed of delivery of diagnosis and of care: if time is wasted, death can be the result, particularly in emergencies (NCEPOD). More generally, patients often have to spend a lot of time waiting or being treated in hospital, and healthcare professionals have an obligation to minimize this time and maximize the quality of it, as shown in "The Last 1000 Days," a poem written by Molly Case for the Chief Nursing Officer for England (Case 2017). Four other useful illustrations of the importance of time in this context are provided by cancer treatment decisions, dementia, intensive care unit bed allocation, and organ donation.

Patients with cancer are often faced with a potential trade-off between increasing their time left alive and decreasing the quality of that time. For instance, chemotherapy is likely to prolong life but can have debilitating side effects. While normally referred to as length of life versus quality of life, this essentially amounts to more time that is less enjoyable or less time that is more enjoyable. However it is phrased, it can be a difficult choice for patients and their families.

Another end-of-life issue that relates to time is dementia. Often, people suffering from dementia lose track of time to varying extents, forgetting what they were doing, or thinking that they only recently got married and their partner is still alive, for example. For some such people, it can be easier to remember decades-old experiences than what happened on the same day (Muller et al. 2014). This "travelling in time" can be very distressing not only for the person with dementia but also (and particularly) for their family.

A rarer and more technical issue concerns decision-making around which patients to prioritize for admission to intensive care units under conditions of resource scarcity. Typically such decisions take into account a variety of factors including likelihood of survival; generally a "first come, first served" approach is not regarded as ethical, though this can raise issues around withdrawal of treatment that is still benefitting patients already in the ICU. However, one factor that is often overlooked (at least in the literature) is the duration of stay required on the ICU in

order to benefit a patient. For example, a patient with COVID-19 might require 7–10 days in the ICU before discharge, assuming that they survive that long. In contrast, someone who needs a bed to recover after an operation might only need a couple of days on the ICU. This means that the bed-time cost of a COVID-19 patient would be equivalent to at least three recovery patients (Shaw 2022). What complicates the picture further is that the COVID-19 patient is likely to die without treatment, while most operations are not deemed "lifesaving," although if repeatedly delayed they can ultimately be.

Finally, organ donation from a patient who has recently died is often regarded as of lesser importance than avoiding upsetting their family by raising the issue (Shaw et al. 2017). The argument for this is that they are very upset and going through a difficult time. However, organ donation provides radical benefits: a donation that goes ahead can provide the recipient with many additional years of life or at least drastically improve their remaining time left alive by taking them off dialysis, the feelings of family members should be of secondary importance—after all, they are not patients.

Unethical Socio-Temporal Behaviours

So far this paper has discussed time from the perspective of public health and clinical ethics. But how can each of us do our best with regard to our decisions and actions concerning time? What are the bad temporal behaviours that should be avoided?

The worst crime in terms of time relates to life expectancy. Ending someone's life cuts their time short, and it is really for that reason that murder and manslaughter are regarded as one of the most serious crimes. Less seriously, causing injury (whether permanent or temporary) or illness to others can also reduce their lifespan and reduce the quality of their time alive. For example, giving someone COVID-19 when you should have stayed at home could have various effects, from killing them (or their elderly relative) to the minor inconvenience of forcing them to self isolate. These harms are not primarily thought of in terms of time, but time is at the core of what makes them wrong.

Seemingly more benign but certainly more ubiquitous is the problem of timewasting. Sometimes we choose to waste time by procrastinating rather than getting on with what we should be doing; that is up to us, though we may often regret doing so, and delaying important tasks constrains our future autonomy because we'll have to do it later instead. However, sometimes when we waste time, some of the costs of that are borne by others, if they are inconvenienced by our tardiness. If one person is late for a meeting, that delays the start of the meeting for everyone else there. If someone is late with providing an input, that delays everyone else's work on a project. Given that time is ultimately all we have, wasting it is a more serious infringement of others' autonomy than is often acknowledged. At the very least, those who know they're going to be late should inform others about it at the earliest possible opportunity, to enable them to spend their unexpected bonus spare time wisely (assuming that they can).

As well as wasting people's time by being late (consuming their time unnecessarily), we can also waste other people's time by being present but reducing the quality of their time. For example, some meetings are utterly unnecessary, and waste the time of everyone present (though that does not excuse turning up late, as that just makes the waste of time last longer). But in public spaces, and even at home, the quality of time can be worsened by others through other means such as the generation of noise. Noise is not only annoying; it also degrades the quality of any activities that are interrupted by that noise (Shaw 2021). But noise is just an example; any inconsiderate behaviour that fails to respect others can contribute to spoiling the time that they are trying to enjoy.

Finally, and perhaps most obviously, juggling jobs with family, friends, hobbies, and other obligations can be very challenging, and unavoidable conflicts often arise. Precisely because it is limited and there are many demands upon it, we need to triage our time as best we can. How best can we do that, while not taking the time of others for granted?

Temporal Autonomy

Given that our decisions about time affect not only ourselves, but also others, it seems likely that the best way to think about time is through the lens of

relational autonomy, rather than the more traditional conception of individual autonomy. Relational autonomy involves thinking about how to exercise one's own autonomy in ways that are compatible with other people exercising theirs (Jennings 2016). In terms of time, this means that we should seek to exercise our autonomy in ways that do not waste other people's time, and do not degrade the quality of time they are spending on a given activity.

Another important aspect of temporal autonomy concerns the aforementioned fact that decisions we make now can constrain or widen the scope of our future autonomy. if you put something off now that needs done later, you may constrain your own future autonomy; equally, if you take a presently availably opportunity it may mean that more options will be available to choose between in the future. This is temporal relational autonomy of the individual; the autonomy of your future self is determined by the decisions you make today. And if you change your mind later, it might be too late. This model of temporal autonomy might be usefully applied to shared decision-making in the clinical and public health contexts as well as on an interpersonal level.

Conclusion

Carpe diem is often thought to mean that we should not waste time; we should seize the day and do something with it. But in fact, that is not what the phrase originally meant: the original meaning was much closer to "nurture the day"; appreciate the time that we have whether or not you want to achieve something with it (Luu 2019). That might involve seizing it, and it might not, but thinking about what to do with time is important.

The meaning of *carpe diem* has evolved over time; similarly, given how much cultural moralities have changed over the last few decades, it might also be useful to ask ourselves which ethical attitudes we currently hold might seem unethical given the passage of time. Two likely candidates seem the way we continue to treat non-human animals and the way we currently treat entities possessing artificial intelligence. Both (some) animals and future iterations of artificial intelligence are likely to fulfil several of the criteria for personhood, potentially necessitating a change in our ethical attitudes towards them.

But for now, in terms of public health ethics and clinical ethics, bioethical discussions would be enriched by taking care to consider the role that time plays in given issues such as health inequalities and shared decision-making about care. More generally, thinking about time can make us act more ethically on a personal level. All adults are children grown old; children are the wise and wizened folk of the future. We're already travelling in time, and we're doing it together, so let's treat each other's time with the respect that it deserves.

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