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Many Worlds and Narratives of Personal Identity

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Abstract. This paper examines personal identity in the context of the Everett interpretation of Quantum Mechanics. According to Everett, the universe branches many – perhaps an infinite number of – times per second. This leads to a universe in which many versions of 'you' exist, many of whom are living lives different to yours. How are we to make sense of the continuation of the self in this context? This is of particular importance for Christian theism, in so far as it is committed to the existence of an enduring self that can be held morally and soteriologically responsible for past actions and can develop an ongoing relationship with God. The paper argues that the best way to understand identity in the Everettian world is fundamentally narrative in nature.

Keywords: personal identity, narrative, emergence, everett, quantum mechanics, many-worlds.

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Introduction

Quantum mechanics is, first and foremost, a set of equations supported by empirical data. In its ability to match theory with experiment, it outstrips all other contenders in the history of science by some distance. Its astonishing success means we are justified in concluding that what we call quantum mechanics reveals something fundamental about the inner workings of our world.[1] Nonetheless, there is much disagreement about how to interpret what these experiments and equations are really telling us. In fact, the field of quantum foundations is currently undergoing a sea-change with respect to the metaphysics of quantum mechanics, moving from antirealist views like the Copenhagen interpretation to realist interpretations like Everett's.

A pressing question thus arises. What worldview ought we to construct out of the quantum building blocks? For much of the twentieth century, the Copenhagen interpretation of Neils Bohr, Werner Heisenberg, and their contemporaries ruled the day. Despite its widespread support in the decades following the quantum revolution, many now agree that there is no single, clear, robust physical theory to which the label 'Copenhagen interpretation' refers. Because of this, philosopher of physics Tim Maudlin calls it a 'vague recipe' that only encourages physicists to 'shut up and calculate' and fails to satisfy the conditions of a robust scientific theory. (Maudlin 2019, xi). The Copenhagen interpretation's unwillingness to ask deeper metaphysical questions about the nature of measurement, the role of observers, or the divide between the quantum and classical realms has started to wear thin.

Whilst physicists may be happy with quantum mechanics' remarkable success in the empirical domain, the philosophers remain unsatiated. The appetite for something more metaphysically satisfying has grown, and those working in this area are rising to the challenge. One interpretation whose popularity has blossomed in recent years is the Everett, or Many-Worlds, interpretation. This is thanks, in large part, to the pioneer-

[1] Of course, an even more successful scientific theory may yet come along that forces us to reconceptualise quantum mechanics in its entirety.

ing work of Simon Saunders and the rest of the so-called 'Oxford Group' (Saunders 2010). Over the past three decades, this group of philosophers and physicists based at the University of Oxford have produced excellent work developing and defending the most robust version of the Everett interpretation available.[2]

According to Everett, at a quantum event, the universe splits or branches. This leads to the actualisation of all possible outcomes of the event in different branches of the universal wavefunction which function approximately as *worlds*. In this article, I am taking this fascinating and radical claim as my starting point. I want to examine our understanding of personal identity in an Everettian context by asking whether we continue to exist despite the (perhaps infinite) number of branching events we experience over our lifetime.

Before diving in, I want to briefly touch on why this question matters for each of us, but particularly for the theist. It is an almost universal intuition that we continue to exist through time, i.e. that even if I undergo significant changes throughout my life, I do not cease holding the relation of numerical identity with myself. I may look back at who I was ten years ago and remark 'I was a completely different person back then'; clearly, however, I would not mean that I am not the same person as the person who purchased my house or signed a contract with my employer. In a fundamental metaphysical sense, I believe that I continue being *me* from my birth (perhaps even before then) to my death (perhaps even after then).

Personal identity is not only important for our commonsense understanding of ourselves, it also sits at the very heart of Christian theism. As Psalm 139:13 says to God, 'you created my inmost being; you knit me together in my mother's womb.' Christianity holds that there is something essential about your 'inmost being' that is divinely created and stays with you throughout your life. This is often conceptualised as a soul, an indivisible *essence* that remains with you even if your body and mind are so changed by disease or injury that others do not recognise you and you do

[2] See this documentary for further details of this history: https://www.youtube.com/watch?v=gKKWBDLigyw

not recognise yourself. Late-stage dementia is a good example of this kind of radical change – the mind may be gone, but, for many Christians, the soul or essence remains. Thus, the person with dementia has not ceased to exist. Theism also places immense value on the ability to develop an ongoing relationship with God that deepens and matures across a lifetime. Additionally, theism is committed to the idea that God holds individuals responsible for their actions, both morally in this life and soteriologically in the next. For all of this to be possible, I must be able to remain the same person throughout my life. Is this tenable in the Everettian framework?

In this paper I want to suggest that it can be tenable, but we must be willing to reconceptualise how we understand the nature of personal identity. In effect, we must be willing to think about these questions in a different register, moving from the more objective metaphysical approaches favoured by analytic philosophers towards a more subjective approach. The approach I am advocating understands identity as fundamentally *narrative* in nature. This approach picks up (and runs with) the idea that we continuously tell ourselves stories about who we are that we weave together out of our memories, our desires, and our relationships with both other people and with the world. These experiences are housed in our physical forms, meaning they are not reducible to purely mental events. The body is both vehicle and vestibule for these stories, containing and carrying the narrative of our lives.

Theists who are committed to the existence of an immaterial and immutable soul may resist this conclusion on the basis that it does not easily offer a place for the soul and is therefore theologically unappealing. I want to emphasise at the outset that narrative has always been a feature of the theological landscape, and so taking a narrative view of identity is not without theological grounding. Christianity is a religion founded upon narratives, and it is committed to a broad narrative of salvation history in which each of us is embedded. I suggest these narratives might form an integral part of what it is to be an enduring self and may be able to facilitate the continuance of my identity, despite the countless branching events I undergo in the Everettian world. As Stephen Crites argues, the formal quality of experience through time is inherently narrative:

> 'The self in its concreteness is indivisible, temporal and whole, as it is revealed to be in the narrative quality of its experience. Neither disembodied minds nor mindless activity can appear in stories. There the self is given whole, as an activity in time.' (Crites 1971, 309)

Before we delve into the argument, I want to offer a brief word on what kind of account I am offering and how it fits within metaphysics more broadly. There are many types of explanation we can give about who we are and what constitutes our 'self' or 'identity'. From the perspective of physics, we are little more than an amalgamation of particles born in the violent death of a star, joined together for a brief moment before dispersing back out into the cosmos. Indeed quantum fundamentalism, a view for which I have sympathy, describes human beings this way. But this is not the only way to look at things. In fact, when it comes to understanding the richness of the human being, it is wholeheartedly unhelpful unless it is held in harmony with other approaches. Even if quantum fundamentalism is strictly speaking correct, it misses something essential about what it is to live as – to both *be* and *become* – a person. My account of identity as subjective and narrative in nature places our 'middle-sized-ness' at the centre of the explanatory framework. It focuses on what it means to persist through time *for us* and from our perspective.

That being said, the arguments I make in this paper should not be viewed as incompatible with quantum fundamentalism. The subjective, narrative, conception of personal identity ought to be viewed as an emergent corollary of this view, by which I mean the narrative self emerges out of the quantum microphysics at higher levels of explanation and experience, a point I will develop in some detail later. It is important to frame this as a middle-sized explanation for middle-sized beings, that nonetheless remains compatible with a microphysical, indeed a physicalist, explanation. We are complex, multifaceted, beings whose nature must be accounted for on multiple levels of explanation; what I offer here is only one piece of the puzzle.

At the foundations of this paper is the belief that the Many-Worlds Interpretation is worth taking very seriously, even if deep disagreement persists over its veracity. Science and Religion discourse has been woe-

fully limited in its treatment of Quantum Mechanics, engaging almost exclusively with the Copenhagen interpretation. It is time to turn our attention to other interpretations. By using the metaphysical picture provided by this interpretation of QM as our set and setting, we are able to examine whether, and to what extent, traditional theistic ideas can be accommodated within a quantum framework.

1. Many-Worlds and its Metaphysics

The focus of this paper is personal identity in the context of a specific worldview: the Everett interpretation of Quantum Mechanics (sometimes also called 'Many-Worlds', though never by Everett himself). The Many-Worlds interpretation was first developed by Hugh Everett III in his doctoral dissertation, written at Princeton in the 1950s. (Everett 1957). Everett's dissertation, in his own words, had the following aim: 'to regard pure wave mechanics as a complete theory.' In so doing, 'it postulates that a wave function that obeys a linear wave equation everywhere and at all times supplies a complete mathematical model for every isolated physical system without exception.' (Everett 1957, 316). A realist interpretation of quantum mechanics, according to Everettians, leads us to the conclusion that the wavefunction of the universe can ultimately account for everything in existence. In other words, what follows is a commitment to wavefunction monism. This universal wavefunction evolves deterministically in accordance with the Schrödinger equation. At a quantum event, the wavefunction splits into branches that contain each possible outcome of the event in question and cease interacting with each other.[3]

Exactly how this works can be unpacked using the well-known thought experiment "Schrödinger's cat". This thought experiment imagines a cat locked in a box with a vial of poison that breaks open if a radioactive particle decays, the likelihood of which is set at 50%. Before you open the box, i.e. measure the outcome of the experiment, the Copenhagen interpretation teaches that the particle is in a superposed state of both de-

[3] Exactly what counts as a quantum event will be explored shortly.

cayed and not decayed, leading to the paradoxical conclusion that the vial of poison is broken and unbroken and the cat is both alive and dead. This conclusion follows from the claim that until a measurement event takes place, quantum objects exist in superpositions, i.e. in all possible states at once. It is the very act of measurement that collapses the wavefunction and causes the superposed particle to occupy a particular state. Until measurement has taken place, the Copenhagen interpretation seems to imply that the cat is *both* alive *and* dead. Schrödinger's aim was to demonstrate the absurdity of applying quantum mechanics to the middle-sized world of human experience. Cats cannot be both alive and dead, so something must have gone wrong somewhere along the way. The Many-Worlds interpretation solves the paradox by claiming that each possible outcome actually happens. In other words, the case does not involve a superposed alive-dead cat; rather, it involves *multiple worlds,* some of which contain alive cats and some of which contain dead cats. Whichever state of affairs we observe when we open the box indicates which world we are in, but the other worlds are equally real.

There are at least two ways that Everettians have understood the ontology of the world-branches, namely the Conservative View and the Radical View. The Radical View holds that at a quantum event the universe splits into two or more worlds, each of which contains one possible outcome of the event in question.[4] This may have been Everett's own view. We cannot know for certain, as Everett left academia after writing his thesis and never wrote on quantum mechanics again. The Conservative View, defended in recent years by Simon Saunders, David Wallace, and others in the Oxford Group claims that the worlds are emergent, macroscopic, phenomena that nonetheless ultimately depend on the same single, evolving, quantum state. (Saunders 2010; Wallace 2012). On this view, world-branches are not a fundamental part of physical reality. Instead, these worlds are real patterns that emerge from the fundamental quantum state.

Either way, questions arise for the nature of personal identity. Whether the branches are emergent or fundamental, they contain many ver-

[4] Such a view can be found in (De Witt 1970).

sions of us whose lives deviate in sometimes very small ways and, over time, far more significant ways. Even if the macro-level changes between worlds are extremely small just after branching, the cumulative effects of many changes over time will lead to significant differences between the lives of the many versions of me. Versions of me who split off from me in-utero, for example, may be living lives unrecognisable to mine. This is especially, though not exclusively, the case if quantum processes that are involved in genetic mutations – as the emerging field of quantum biology is suggesting – cause one version of me to have a genetic disease and another version of me to remain healthy. (Al Khalili and McFadden 2015).

What are we to make of personal identity in all this? Our intuitions on the matter have been shaped in the context of our experience of a singular world, and so are woefully ill-equipped to contend with world-branching. Thus, careful philosophical and theological work is required as we wade through this intellectual quagmire. I hope the arguments of this paper will be a step in the right direction.

2. The Problem of Personal Identity

The belief that we continue to exist throughout our lives is deeply held by most of us, even if we seldom reflect on it consciously. For example, it seems incontrovertible to me that that the 9 year old girl who picked out a tiny kitten and named her Lollipop is the same person as the 29 year old woman who held Lollipop for the last time a few months ago. Even though both me and my lovely cat changed significantly over those 20 years, I never questioned whether I was actually the same person as that child, nor whether the animal whose loss I was grieving was really the same cat. One way of framing this might be to say that whilst our accidental properties (age, size, hair/fur colour) may have changed, our essential properties (whatever those may be) had not.

What exactly are my essential properties? In other words, what conditions must be satisfied for me to continue existing across time? The kind of identity with which this question is concerned is *numerical identity*, as opposed to *qualitative identity*. Let us begin with a brief reflection on ob-

jects, namely entities with only physical form, before moving onto subjects, namely beings with both bodies and minds. Two objects are qualitatively identical if they share almost all their properties, and two objects are numerically identical if they share all their properties and are therefore one and the same object. Two chairs made by the same manufacturer will be qualitatively identical if they share the same form, are made of the same materials, are equal in mass and durability, etc. They fail to satisfy the conditions of numerical identity, however, if they occupy distinct spatial locations and are not made of the exact same physical stuff. They are two different chairs whose appearance is almost indistinguishable. Numerical identity is the relation a thing has only with itself. For example, the morning star and the evening star are numerically identical because both names refer to the same object, the planet Venus.

This leads us to a principle that is essential when ascertaining whether two objects are numerically identical: 'the identity of indiscernibles.' According to this principle, if two objects have all the same properties, they must be numerically identical. If we cannot distinguish between them on any grounds, as is the case with the morning star and the evening star, then they are one and the same object. A second relevant principle is 'the transitivity of numerical identity'. If the current King of England is identical with Elizabeth II's eldest son, and Elizabeth II's eldest son is identical with Charles Mountbatten-Windsor, then the current King of England is identical with Charles Mountbatten-Windsor. Most, if not all, metaphysical treatments of personal identity hold these principles to be correct, for reasons that I hope will be fairly evident. With these principles in hand, we can move from consideration of objects to subjects.

There are numerous proposals for the persistence conditions of transtemporal identity that try and make sense of my intuition that I remain the same person as that kitten-hugging 9 year old. Two of the most popular approaches are a) psychological continuity views and b) bodily continuity views. The former holds that in order for an individual to continue existing, they must be psychologically continuous (either directly or indirectly) with some past person. This may be via memory, streams of consciousness or first-person experience, indirect psychological con-

nectedness, etc. The latter claims that our continued existence across time is contingent upon the continued existence of our physical bodies. We are, on this view, fundamentally corporeal and cannot be adequately understood outside of our embodiment. Another way of putting it is that we are biological animals whose physical form is integral to who we are. A third option that is enjoying a contemporary resurgence is Aristotelian hylomorphism, in which both body and mind (or, more properly, soul) are essential to one's selfhood. On this view, objects are comprised of matter and form, and the soul is the form of the body. The whole cannot exist without both component parts.

The best way to work out which theory of personal identity is best is to stress-test them in various scenarios. A good place to start is with a typical case of Parfittian fission. (Parfit 1971). A typical fission case goes something like this. Suppose some individual, let's call her Alice, undergoes fission, as a result of which she splits into two identical copies. Let's call these copies lefty and righty. Is the pre-branching person, Alice, identical with lefty, righty, both, or neither? If both lefty and righty share Alice's memories, and feel like Alice from the inside, then they have psychological continuity with Alice. According to this way of understanding identity, they are both identical with Alice. Similarly, if they appear to have the exact same body as Alice, meaning they look like Alice from the outside, then the bodily continuity criterion has likely been satisfied.[5] But the problem is, lefty and righty are not identical with each other. They occupy different spatial locations, have distinct streams of consciousness, and can choose to part ways and never meet again. By any measure, they are different persons.

According to the Everett interpretation, branching of a relevantly similar kind is happening all the time (albeit with branching occurring across worlds rather than within worlds). Applying the above reasoning to the context of Many-Worlds generates a stark conclusion: we cannot survive world-branching.[6] Why this is the case is clear when returning

[5] Whether the bodily criterion is satisfied is slightly more complicated than this, but as it is only tangentially relevant to the present discussion I shall set it aside for now.

[6] I have explored fission cases & Many-Worlds at length elsewhere: (Qureshi-Hurst 2024) (Qureshi-Hurst, Emily 2023). For an opposing view, namely that fission is unhelpful when thinking about identity in Everett's Many-Worlds, see (Quirke 2024)

to our above principles: lefty and righty are discernible, so they are not identical. Alice cannot be identical to either of them without violating the transitivity of numerical identity. If Alice is not identical with either lefty or righty, and lefty and righty are all that remain after Alice has split, then Alice no longer exists.

This is a serious problem. As David Wallace points out, branching is not a rare event:

'Branching is caused by any process [or, quantum event] which magnifies microscopic superpositions up to the level where decoherence kicks in, and there are basically three such processes:

1. Deliberate human experiments: Schrödinger's cat, the two-slit experiment, Geiger counters, and the like.
2. 'Natural quantum measurements', such as occur when radiation causes cell mutation.
3. Classically chaotic processes, which cause small variations in initial conditions to grow exponentially, and so which cause quantum states which are initially spread over small regions in phase space to spread over macroscopically large ones.' (Wallace 2010, 68)

Whilst the first is rather rare, the second two are ubiquitous. That means that branching could be happening as many as an infinite number of times per second, birthing an infinite number of selves from each moment to the next. Even if the number of branches per second is finite, the number will be inconceivably high. If we cannot survive branching, then it seems as though none of us can continue to exist for more than a few microseconds into the future.

Physicist and Everettian, Sean Carroll, is relatively unfazed by this, arguing that the idea that each of us is the exact same person from birth to death was never more than a useful approximation anyway. Everettians ought to embrace the idea that 'the lifespan of a person should be thought of as a branching tree, with multiple individuals at any one time, rather than a single trajectory – much like a splitting amoeba.' (Carroll 2019, 139–140). Is the Everettian's only recourse to think of the human person like a phylogenetic tree, a set of descendants branching off from each other *ad infinitum*?

Derek Parfit's response to the problem of fission, albeit within worlds rather than across worlds, was that what matters ought to be survival and not numerical identity. Although we often think of them together, Parfit argues that we ought to prize apart the relations of identity and survival. Whilst identity is an all-or-nothing relation, survival can admit of degrees, and 'the relation of the original person to each of the resulting people contains all that interests us – all that matters – in any ordinary case of survival.' (Parfit 1971, 10). What we need for ordinary survival is psychological continuity, and if this is preserved after branching then the person can consider themselves to have survived, even if they are not strictly speaking the exact same person as they were before the split (according to the identity of indiscernibles and the transitivity of numerical identity).

As Parfit acknowledges, 'the belief that identity is what matters *is* hard to overcome.' (Parfit 1971, 11). In my view, this is especially the case for the theist. It is far harder to accept that selfhood admits of degrees from within a nexus of standard theological commitments because Christian theism is committed to the existence of a core essence of each person; an innermost being, knitted together and beloved by God. A common way of fleshing out this idea is via an immaterial soul that is the unique essence of each person. Famous substance dualist, Rene Descartes, offered an argument in favour of this position known as the divisibility argument. In effect, the argument states that bodies and minds must be different substances because bodies are divisible whereas minds (or, perhaps, souls) are indivisible. (Rozemond 2016). By their very nature, souls cannot split, branch, or admit of degrees. Richard Swinburne, too, endorses substance dualism, claiming that 'each of us living on earth consists of two distinct substances (two distinct parts)—body and soul, but the part that makes us who we are is our soul.' (Swinburne 2019, 1). If selves are souls, then numerical identity (understood as the continued existence of the indivisible soul) is what matters, not survival. Even if you are not a substance dualist, if you endorse the existence of such a soul – and hold that the soul is a unique, indivisible, unity – then what matters is the preservation of that soul. If souls are indivisible, then it is even more difficult to

make sense of soul-branching than it is to understand body-branching and mind-branching.[7]

The question of what happens to selves in a branching multiverse really matters. The continuation of persons through time is essential to many core features of Christian theology. Christianity holds that individuals have personal relationships with their God that are developed over the course of a lifetime. It is also committed to the idea that individuals can be held morally and eschatologically responsible for their actions in this life and the next (not the actions of someone who is not, strictly speaking, identical with them). For this to remain coherent, one may reasonably conclude that identity must be preserved across time even in a world of infinite branching. Christianity is also committed to the doctrine of creation *ex nihilo*: God is the creator of all things. If God created persons, and created an Everettian world, then the theist must hope that the Everettian world is compatible with Christian theism's core claims about identity, relationality, and responsibility. As long as Everettian Quantum Mechanics is a viable interpretation, the problem of personal identity remains live and pressing.

3. A Subjective Turn

3.1. Two Approaches

There are two approaches we might take when formulating an answer to the question 'who am I?' One might call these the 'metaphysical' and the 'perspectival' approaches, but 'objective' and the 'subjective' approach captures the distinction equally effectively. If I want to approach the question objectively, I might take a metaphysical approach, focusing on the relation of numerical identity and the persistence conditions that must be satisfied in order for that identity to persist across time. It could be accused of being a rather detached way of answering the question, and

[7] Swinburne made this exact point to me during a recent conversation. He argued that we ought to reject Many-Worlds because souls cannot branch. As we have good grounds for believing in the existence of a soul, this provides us with sufficient motivation to reject Many-Worlds.

we explored how metaphysical identity fares in a branching context earlier. Metaphysical ways of framing personal identity, and the transtemporal persistent conditions thereof, struggle to make sense of identity persisting in a world that branches. This creates obvious problems for the persistence of the self in an Everettian multiverse.

Fortunately, there is another way. I am not just the self that is determined by abstract metaphysical principles, even if these principles are grounded in more personal phenomena like memory or embodiment. Perhaps even more importantly than this, I am the me that I am *to myself*, the subjective, phenomenological, internal self that is grounded in self-conception, memory, desire, experiences, and embodiment in my own particular body. This subjective approach, and its attendant cluster of properties, will form the basis of my articulation of the narrative view of identity.

I must emphasise at this point that this kind of subjective understanding of the self is not the same as the psychological continuity view. Embodiment is a highly important feature of the subjective account for which I will argue here. The nature of one's body is essential to one's personhood – this is made clear by the excellent work of gender identity, feminist, black, and disability scholarship. Scholars in these areas have rightly emphasised that our lived experience is fundamentally shaped by the nature of our bodies and the socio-cultural and political contexts through which those bodies move. But of course, the significance of embodiment for shaping our sense of self and our interaction with the world is not limited to those whose bodies may be categorised as marginalised or oppressed. It is undoubtable that the body shapes experience whatever your body is like, so our subjective self-conception ought not to be thought of as disembodied or purely psychological.

3.2. The Self as a Centre of Gravity

Elsewhere I have argued that, for technical reasons, the physics and metaphysics of time encourage us to be subjectivists about salvation. (Qureshi-Hurst 2024). Daniel Dennett explores similar ideas in his own writing on personal identity, likening a self to a centre of gravity. A centre of gravity is, he argues, an abstract object, indeed a useful fiction, that

theoretical physicists and ordinary people alike construct to make sense of the behaviour of objects in particular contexts. Dennett points out that we make a category error if we try to pinpoint an object's centre of gravity onto a particular atom, because a centre of gravity is not a physical entity. Similarly, we cannot point to a location in the brain and proclaim, 'there is the self, right in the middle of the hippocampus'. Selves are, according to Dennett, comprised of self-constructed narratives woven out of the complex histories of our lives. Although the objective events of my past are fixed, how I understand them and the part they play in my self-understanding is dynamic. Dennett writes:

> We cannot undo those parts of our pasts that are determinate, but our selves are constantly being made more determinate as we go along in response to the way the world impinges on us. Of course it is also possible for a person to engage in auto-hermeneutics, interpretation of one's self, and in particular to go back and think about one's past, and one's memories, and to rethink them and rewrite them… This would be an utterly mysterious and magical prospect (and hence something no one should take seriously) if the self were anything but an abstractum. (Dennett 2014, 103-115).

He develops this idea in the context of multiple personality disorder (now known as dissociative identity disorder) in which two or more selves seem to occupy the same body. Dennett suggests that these are different stories told about the same biological organism – multiple characters inhabiting one body. For Dennett, there is no objective self, but we do not have to go as far as this to appreciate the value in a narrative approach. We can maintain commitment to the existence of a self, whilst agreeing that that selves are comprised of stories upon stories upon stories; evolving identities tied together by an autobiographical thread ever in flux. For Dennett, this is why multiple personalities can emerge: 'all that has to be the case is that the story doesn't cohere around one self, one imaginary point, but coheres (coheres much better, in any case) around two different imaginary points.' (Dennett 2014).

For Dennett, dissociative identity disorder occurs when one biological organism has two storytellers retelling the events of their lives. When

a second self comes into being, a second centre of gravity emerges. This second self will have new narratives in orbit and old plot points will be re-told in that new narrative context. From this, a new sense of identity will coalesce. This idea can be highly illuminating in the context of Many-Worlds – new selves come into being when world-branching occurs, and they may end up narrativizing their shared histories differently as their lives evolve in different directions.

The idea that we interpret the events of our lives in the context of our self-understanding and identity narratives is by no means new. The difference one's *interpretation* of events makes to one's life will be familiar to anyone who has experienced the same event as a friend or family member and yet the two of you remember it – and retell the story – very differently. What happens in such cases is that the event in question gets interpreted by each person in the context of their own experience and through their own personal hermeneutical lenses, giving the event radically different meaning for each. One case where we can imagine such a thing occurring is a serious car accident, after which one survivor develops PTSD and the other has a near death experience and finds faith. Both survivors experienced a lifechanging accident, but one life gets far worse, and the other life gets far better. They have remembered and recontextualised the same event utterly differently. This kind of thing is not uncommon between two lives; could it happen within one branching life?

3.3. Narrative Identity, Emergence, and the Creation of Meaning

In this article I have begun to argue that we can recover the notion of persisting personal identity in the context of Many-Worlds if we shift our understanding of identity from one focused on objectivity to one focused on subjectivity. In this section, I want to explore this in greater depth, drawing on resources from theology, the philosophy of physics, and psychology.

Let us begin with theology. The kind of subjective self-construction I have in mind is deeply related to Paul Tillich's understanding of individuals and their place in history bearing groups. History, for Tillich, is not comprised of the objective events exactly as they occurred. Instead,

history is created by human cognition and human culture. It is the running-together of fact and interpretation. Tillich identifies four characteristics of human history: 'to be connected with purpose, to be influenced by freedom, to create the new in terms of meaning, to be significant in a universal, particular, and teleological sense.' (Tillich 1964, 305). 'Creating the new in terms of meaning' is precisely the kind of generative thought that I suggest is involved in narratively constructing a self. Human creativity interacts with past events to generate new meaning, and in this way the subjective interpretation of events precedes the happenings themselves in terms of their significance.

For Tillich, human beings explain their place in the world through historical narratives in which they are embedded, which in turn become highly important centres of meaning. One example is the salvation-historical narrative in which Christians understand themselves; another example is the narrative of liberation told by a people emancipated from colonial rule. Although individual human beings are centres of meaning in their own right, they exist within wider historical narratives. For this reason, Tillich argues that only groups can bear history. As individual polyps form complex coral reefs, so too do generations of individuals sharing a language and upholding cultural traditions comprise the body of history.

Tillich argues that the practice of historical enquiry creates the *qualitatively new*. History – and historical reflection by cultural groups who bear that history – weaves objective events and subjective meaning together to create something subjectively, qualitatively, new. Meaning is built out of a dialogue between the events themselves and their significance for the history-bearing group. This history then becomes an integral part of that group's identity. Without the human mind – with its creation of symbols and its subjective interpretation of the meaning of events – history would not exist. Thus, human subjectivity is integral to the creation of new meaning in the world we inhabit.

We can apply this to individual persons as well as history bearing groups. As Tillich understands individuals to form history bearing groups, so too can individual stories make up the broader narrative iden-

tity of individual persons. The interlocking narratives of human stories that make up human persons themselves make up history bearing groups; they sit within each other like Russian dolls. These narratives and meta-narratives gain their meaning and their value from the continual interaction between factual events and human interpretation. In effect, the events of my life are given meaning by my subjective interpretation of them. The story about who I am, woven out of those events and organised into a coherent narrative, is that which is essential to my persistence through time.

Another theological resource upon which to draw when thinking about the role narrative plays in the construction of identity is that of a soteriological transformation. This kind of idea, expressed in the Pauline claim that 'if anyone is in Christ he is a new creation' (2 Corinthians 5:17), is that at a certain point in an individual's life, their entire selfhood can undergo a profound transformation in light of which their identity fundamentally shifts. After becoming a new creation, the narrative of a person's life is recontextualised in light of their salvation, transforming their very being into something both utterly new and continuous with the old. Their relationship to God has deepened, and both their past and future has shifted into a new state. Narrative, particularly its emphasis on the significance of *interpretation* in shaping selfhood, makes sense of this perfectly. A soteriologically significant event occurs, and the entire narrative of one's life pivots towards a new future and in turn recontextualises the events of one's past.

A further way of thinking about this might be to return to the idea of emergence set out at the beginning of the paper, and both Dennett and Wallace will once again be valuable interlocutors here. According to the Everett interpretation, at least as the members of the Oxford Group understand it, the world-branches are emergent patterns that are dependent on a single, fundamental, quantum state. We ought to understand persons as similarly emergent. Whilst world-branches depend on quantum the microphysics, they cannot be completely reduced to it without losing something essential about what it means to be or to inhabit that particular world. Similarly, whilst we depend upon our physical bodies

(themselves an amalgamation of quantum particles), we are so much more than moving matter. We are thinking, feeling, subjects who have the ability to create real centres of meaning. Both with persons and with world-branches, meaning emerges out of matter without being wholly reducible to that matter.

Dennett develops this line of thinking by identifying phenomena he names *real patterns*, namely an organisation of bits of information that, when viewed from an intentional stance, are real and objective. He writes, 'A pattern exists in some data – is real – if *there is* a description of the data that is more efficient than the bit map, whether or not anyone can concoct it.' (Dennett 1991, 34). For example, the two sentences:

> The frightened cat struggled to get loose
> Te serioghehnde t srugfcalde go tgtt ohle

Although each sentence contains the same bits of information, the former sentence is organised in a meaningful pattern that will be recognisable and far more easily remembered by anyone who understands the English language. The sentence, and the meaning it confers, is objectively there. Whilst Dennett directs his real patterns analysis towards propositional beliefs, advocating a form of what he calls 'mild realism', perhaps identity narratives can be thought of as a kind of emergent pattern; a meaningful structure that emerges in the domain of the middle-sized. To an alien unfamiliar with our world, we may appear to be machines made of meat, hardly distinguishable from the animals, plants, and rocks with whom we share the Earth. To each other, we are irreducible centres of meaning whose identity is far richer than the physical matter upon which that identity nonetheless depends. It may, therefore, be useful to view persons as emergent real patterns of the kind Dennett describes.

Indeed, this is an idea Wallace employs in his ontology of entities, from Bengal tigers to world-branches (Wallace 2012, chapter 2). A Bengal tiger is a particular pattern instantiated by molecular physics. What makes the tiger itself is its particular history, and this history is a pattern that can be picked out by those of us living in the domain of the middle-

sized. This does not make tigers arbitrary or a merely pragmatic approximation. They are real, but emergent, entities. So are persons. In Wallace's own words, 'the "real" structures present in the states of a given theory *T* (over and above any entities explicitly postulated by *T* itself) are those which occur as entities within those theories instantiated by *T*.' (Wallace 2012, 57). The theories instantiated by *T* (in this case, QM), are the various scientific theories that may be said to ultimately reduce to *T*. My own modest contribution is the suggestion that we may think of subjective narratives as ultimately but meaningfully instantiated by the quantum processes from which they emerge. Narrative (understood in the terms I have set out in this article) plays an integral role in shaping a person's identity and picking out their particular history from the undulating sea of other selves.

The idea that persons are emergent has also been explored from a psychological perspective by Jack Martin (Martin 2003). He discusses a variety of ways psychologists have considered personhood as emergent, writing:

> Persons are clearly more than their bodies, self-understandings, identities, and actions in the world. More precisely they are a complex combination of all these aspects. For emergentist theorists in psychology, during ontogenesis, persons emerge developmentally from the placement at birth of biologically evolved human infants in historically established sociocultural contexts within a physical world. (Martin 2003, 87).

Personal identity cannot be defined in terms of mind *or* body *or* environment alone. Instead, identity is best understood as a complex interplay of embodiment, subjective experience, and socio-cultural context, each of which emerge at higher levels of explanation. Thus, there are a range of disciplinary perspectives that support the claim that personal identity is emergent, and that persons are real centres of meaning that emerge in the middle-sized realm. The inclusion of narrative both enriches, and is supported by, these accounts.

Nevertheless, the problem of what to conclude about the other versions of me still looms large. We still have to contend with the existence

of many – perhaps an infinite number of – other versions of me living lives in parallel. Whether narrative identity solves the problem remains an open question, but I believe that it is at least a helpful step in the right direction. In a subjective conception of identity, and from my own perspective within a particular world-branch, perhaps it is inconsequential that there are physical duplicates who share my past but not my future. To be concerned about this may be to focus on the wrong thing entirely. The other versions of Emily are not me. As their future selves retell the stories of the past we shared, recontextualising them in terms of our different futures, a clear distinction is drawn between us. Although the many Emilys may be connected by past experience, they are distinct centres of meaning (or distinct real patterns) who each have a unique identity. What ties my identity together across time is a thread of my own weaving. No singular narrative thread ties us together *across* branches, meaning that the Emilys in different branches are different persons.

In effect, I'm suggesting that the way we tell stories about our past and the way we contextualise our own history is so deeply shaped by our current experience that each different version of me would have a different identity-narrative, including about our shared past. I am identical with the past me whose life I remember, whose body I share, and whose narrative thread is woven into mine. The other Emilys in different branches are *not* me, but the past version of me that I remember being and whose stories are woven into mine *is* me. In this context, the relation of numerical identity does not really matter, and we may have to abandon the idea that – at least between world-branches – identity is transitive. What matters is that the centre of gravity, the narrative self, persists.

3.4. The Role of the Body

I mentioned earlier that the narrative approach is not to be confused with the psychological continuity view for the simple reason that the body is essential in both housing and shaping our identities. There exists a deeply symbiotic relationship between mind and body – between conscious experience and embodiment – that makes the psychological continuity view too restrictive in its approach to identity. One way of envisioning

this relationship is by drawing an analogy with a cello.[8] The wooden body of a cello changes in response to its use. Over time, the cello's ability to produce sound develops, a process that occurs in response to the effect that playing the instrument has on its physical form. As the physicality of the instrument changes, it "opens up", leading to the tones becoming richer and more resonant. What we might call the "experience" of the cello has shaped it, enriching its performance. This is a familiar example of a more fundamental point: physical forms are not static. Instead, they are shaped by the dynamic experiences they undergo. In a similar way, the body is shaped by its experiences, a process which affects the future experiences the body will be able to have. In advancing a view that holds mind and body to be equally essential, I hope that what I advance here is something richer and more integrated than the psychological continuity view is able to provide.

One reason to endorse the essentiality of the body in a person's identity, especially for those who are sympathetic to the psychological continuity view, is that the body is utterly integral to our psychology. In its commitment to the centrality of human psychology, the psychological continuity view is incomplete if it fails to consider the body. We are neither disembodied minds nor ghosts in machines. Developments in the field of embodied cognition indicate that conscious experience, thought, and cognition are deeply related to, and shaped by, embodiment. Excellent theological work is being done engaging these ideas with religion, and I need not repeat that here (Tanton 2023). What I will say is that it is becoming ever clearer that the psychological continuity view misses an essential feature of our psychology if it ignores the body.

The narrative view I want to endorse puts the body at the centre. Psychiatrist Bessel van der Kolk's book *The Body Keeps the Score* offers a vivid justification for this, particularly in the context of trauma and post-traumatic stress responses. We have always known that experience shapes the body. From the scars that immortalise childhood accidents to tattoos that commemorate significant life events, our stories are etched into our bodies in familiar ways. What van der Kolk's research indicates is

[8] I am indebted to Rebekah Wallace for offering this analogy.

that the way our experience shapes our bodies runs far deeper, and is far more formative, than the rather more superficial examples of tattoos and scars might suggest. In brief, van der Kolk argues that traumatic experiences interfere with regions of the brain that control emotional regulation, focus, and flexibility. A person who has experienced trauma often remains stuck in fight or flight mode, leading to chronic stress that harms various bodily processes including the immune system and the function of certain organs. These bodily changes, brought about by psychological distress, shape our experience of the world differently moving forwards. An example of this is the ability to form lasting relationships (van der Kolk 2014). Trauma is not the only example of the complex and dynamic interplay between the mind and body, but it helps illustrate why the body is essential to the narrative view of identity I am advancing here.

The body acts as an anchor for the subjectively constructed narratives that constitute our identities. Narrative is not merely the set of our memories about our life, which can be mistaken, warped, or manipulated. In a much deeper sense, the narratives of our lives become encoded in the body. What this means is that instead of human beings having a core essence – something like an eternal and indivisible soul – we are collections of stories told and retold by us and perhaps also by those who love us. Our bodies are fundamental participants in this process, housing and shaping the experiences that comprise our narrative identities. We are rivers, ever fluid, whose banks are shaped by sediments of stories stored in our depths.

4. Two Objections

The above argument might be enough to satisfy the atheist, who does not need as robust an account of personal identity as the theist, particularly the Christian theist, does. There will be theists who wish to reject my subjective, narrative account because in their view theism needs objective, numerical identity. They may argue that my account is no more theologically robust than the Parfittian claim that identity does not matter but survival does. Responsibility, salvation, and eschatology must be

preserved, and numerical identity is essential in this regard. Individuals must be given *their* just deserts, not held responsible for the actions of someone with whom they are not, strictly speaking, identical. People must be able to develop ongoing relationships with God across their lifetime, which is not possible if they cannot continue to exist. Essentially, the objection is that a focus on narrative selfhood may seem too flimsy to ground the kind of identity we need for moral and soteriological responsibility or for the ongoing development of a personal relationship with God. Instead, we must have a metaphysical account of identity in order to be theologically satisfied. This is the first objection.

On the contrary, I argue that it still makes sense to say that individuals can be held responsible – by God, by others, and, hopefully, by themselves – for the actions they took in the past and that comprise the narrative of their life. Precisely what causes this self to persist on the narrative account are the stories that comprise my life's experience, and thus relations of responsibility are essential features of the account. I am responsible for the actions that make up my history – it is precisely this connection to my past self that makes responsibility possible. Responsibility and selfhood are intimately connected. Similarly, our life stories are deeply informed by our relationships. If a relationship with God has been developed throughout a lifetime, this will likely be a core thread running through that individual's sense of self. The relationship is a precondition of the narrative, not something that the narrative prohibits.

The second objection is that we are often unreliable narrators, and a merely self-constructed narrative could be unable to provide robust continuity of the kind required by Christian theism. Fortunately, the theist also has recourse to an additional move: the role of God. The theist may understand God as ontologically grounding the self in the divine mind and the relationship that individual has with God. Selves, individuals, persons, are situated both in the narrative of their own lives *and* in the broader salvation-historical narrative. They are individual authors of their own stories, but they are also creatures whose existence is sustained by God. By being embedded in these personal and theological narratives, identity becomes grounded in relationship with God as well as one's re-

lationship with one's past self. These external relationalities can provide enough robust continuity and solid grounding to avoid the charge that we are unreliable narrators.

Our stories are jointly authored by both ourselves and by God, and perhaps also by those with whom we have earthly relationships. A key component of narrative identity is relationality, and relationships are bi-directional. If individuals develop relationships with God, then this relationship plays a part in objectively grounding the self in the divine mind. In essence, my response to the second objection is that the grounding of these narratives in the mind of God provides enough objectivity to allow identity, and thus responsibility, to persist despite the many branching events in the Everettian multiverse. Whilst more details need to be worked out before this account can be adopted with confidence – including how (or indeed if) a soul can be incorporated – it seems to me to be a productive line of enquiry.[9]

An additional response to this charge that narrative is too changeable and easily misdirected is to repeat the importance of the body in both the formation and the fortification of one's identity. Narrative is not mere memory. It goes far deeper. For this reason, our mistaken memories about our past experiences need not become defining features of our identities. The body and one's relationships with others and with God bring a level of objectivity into the account.

I conclude, then, with the suggestion that perhaps the best response to the question 'who am I in Many-Worlds?' can only be formed by a narrative thread woven out of our own subjective experience that is encoded in the body and, for the theist, grounded in the mind of God. The self isn't *mere* narrative, although the self generates narratives and is in turn generated by narrative. What breaks this circularity is the grounding of the self in its external relationalities: one's relationship with one's social nexus, with broader historical narratives, and with God. It may be helpful

[9] It seems to me that the kind of soul proposed by substance dualism is particularly difficult to reconcile with an Everettian worldview, as such souls are not considered to be the kinds of things that split. It could be the case that the kind of soul proposed by the hylomorphists holds more promise. This is an issue that I hope to return to in future work.

to think of persons as relevantly similar to communities of people sharing a history and telling stories about that history that in turn form their understanding of their past and present. In this way, I can remain connected to my past self and disconnected from those Emilys living in branches parallel to this one. As long as this is the case, branching cannot threaten my continued existence or cause my identity to slip through the cracks between branches of the multiverse.

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References

Al Khalili, Jim, & McFadden, Johnjoe. 2015. *Life on the Edge: The Coming of Age of Quantum Biology*. London: Penguin Random House.

Carroll, Sean. 2019. *Something deeply hidden: quantum worlds and the emergence of spacetime*. London: Oneworld.

Crites, Stephen. 1971. "The Narrative Quality of Experience." *Journal of the American Academy of Religion* 39 (3): 291–311.

De Witt, Bryce S. M. 1970. "Quantum Mechanics and Reality." *Physics Today* 23 (9): 30–35.

Dennett, Daniel C. 1991. "Real Patterns". *The Journal of Philosophy* 88 (1): 27–51.

Dennett, Daniel C. 2014. "The Self as a Center of Narrative Gravity." In *Self and consciousness: Multiple perspectives*, edited by Frank Kessel, Pamela M. Cole, and Dale L. Johnson, 103–225. Hove: Psychology Press.

Everett III, Hugh. 1957. '"Relative state' formulation of quantum mechanics." *Reviews of Modern Physics* 29, 454–462.

Martin, Jack. 2003. "Emergent persons." *New Ideas in Psychology* 21.2: 85–99.

Maudlin, Tim. 2019 *Philosophy of Physics: Quantum Theory* (Princeton Foundations of Contemporary Philosophy; 33). New Jersey: Princeton.

Parfit, Derek. 1971. "Personal Identity." *Philosophical Review* 80: 3–27.

Quirke, Josh. 2024. "Everettian quantum mechanics and the ghost of fission." *The Philosophical Quarterly*. DOI: 10.1093/pq/pqae106.

Qureshi-Hurst, Emily. 2023. "The Many Worries of Many Worlds." *Zygon* 58 (1): 225–245.

Qureshi-Hurst, Emily. 2024. "Many Worlds and Moral Responsibility." *Theology and Science* 22(3): 456–473.

Qureshi-Hurst, Emily. 2024. *Salvation in the Block Universe: Time, Tillich, and Transformation*. Cambridge: Cambridge University Press.

Rozemond, Marleen. 2016. "Divisibility." *The Cambridge Descartes Lexicon*, 211–213.

Saunders, Simon. 2010. "Many worlds? An introduction." In *Many Worlds*, edited by Simon Saunders, Jonathan Barrett, Adrian Kent, and David Wallace, 1–49. Oxford: Oxford University Press.

Swinburne, Richard. 2019. *Are We Bodies or Souls?* Oxford: Oxford University Press.

Tanton, Tobias. 2023. *Corporeal theology: the nature of theological understanding in light of embodied cognition*. Oxford: Oxford University Press.

Tillich, Paul. 1964. *Systematic Theology III*. Digswell Place: James Nisbet & co. ltd.

Wallace, David. 2012. *The Emergent Multiverse [electronic Resource]: Quantum Theory According to the Everett Interpretation*. Oxford Scholarship Online. Oxford: Oxford University Press.

Wallace, David. 2010. "Decoherence and Ontology." In *Many Worlds? Everett, Quantum Theory, and Reality*, edited by Simon Saunders, Jonathan Barrett, Adrian Kent, and David Wallace, 53–72. Oxford: Oxford University Press.