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HOW DOES MENTAL TIME TRAVEL IN THE EUCHARIST AID PSYCHOSPIRITUAL GROWTH?

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Abstract: This paper innovatively connects the Eucharist, which is usually considered to be in the domain of theology, with the concept of personality-growth—the idea that a person's personality can get better—which is usually considered to be in the domain of experimental psychology. I make this innovative connection by drawing on a scientific survey of studies on personality-growth in experimental psychology to examine the experience of shared mental time travel that occurs in the Eucharist. Mental time travel is the cognitive ability of mentally travelling back in time in episodic memory and mentally travelling forward in time in episodic future-directed imagination. Episodic memory is memory of past events; similarly, episodic future-directed imagination involves imagining future events. Episodic memory is in contrast with semantic memory, which is memory of facts.

The argument in this paper is in two stages. First, I argue that episodic thinking contributes to personality-growth. That is, self-projecting (to re-live past events and to pre-live future ones in mental time travel) aids personality-growth. Second, I advance an isomorphic argument to the first, I argue that shared projection in liturgical anamnesis of the Eucharist aids psychospiritual growth. This work is grounded in contemporary experimental psychology, cognitive neuroscience, and philosophy of memory.

I. THE EUCHARIST AND MENTAL TIME TRAVEL

Prima facie, the Eucharist and personality-growth seem like disparate concepts. On the one hand, the Eucharist, a shared meal celebrated by Christians as a memorial of the death, resurrection, and future glory of Christ. On the other hand, 'personality-growth' is a psychological phenomenon usually studied in individuals. Despite their apparent disparateness, in this paper I bring the psychological phenomenon of personality-growth to bear on the theological phenomenon of the Eucharist. I bring these phenomena together via a two-stage argument. In the first stage, I argue that the self-projection that occurs in mental time travel aids personality-growth. The second stage comprises an isomorphic argument to the first; that is, that shared projection in the Eucharist aids ameliorative growth. The isomorphic argument works because, as I go on to demonstrate, there is a continuity between self-projection on an individual level and the shared projection that occurs in the Eucharist.

Eucharistic anamnesis as mental time travel

Participation in the Eucharist involves mentally travelling back in time to remember the death and resurrection of Jesus. Eucharistic remembering is thus termed 'anamnesis'. Remembering is not limited to the Eucharist; it is woven into Christian liturgy. The imperative to 'remember your baptism' encourages those who have been baptised to think about their collective identity in Christ. Similarly, Ash Wednesday's imperative to 'remember you are dust' is an invitation to consider the limitations of corporeality and the finitude of mortality. In this paper, my focus is on the role and character of remembering in the Eucharist. I note, however, that these

other liturgical remembrances—be it at baptisms or on Ash Wednesdays—are also connected to eucharistic remembering.

The Church's practice of the Eucharist has undergone considerable paradigm shifts since its commonly ascribed first celebration, *i.e.*, the Last Supper. And there are varied postulations on the origins of eucharistic praxis. What is not in doubt is that the Eucharist seems to have originated from an amalgamation of Jewish and Greco-Roman meal customs. I note that it is inaccurate to ascribe a unified eucharistic theology to the early Church. Divergences of interpretation and liturgy are evident even in the gospels' accounts of the Last Supper. For example, in the Matthean and Marcan accounts, 'as they were eating' Jesus broke and offered the bread first before offering the wine to his disciples (Matthew 26:26-27 and Mark 14:22-24), but according to Luke the wine was offered first before the bread, and then 'after supper' (22:20) Jesus took up the wine again and this time accompanied it with the words 'my blood…poured out for you' (v.20); although it is not obvious in the text[1] if the disciples drank a second time. The admonition, 'do this in remembrance of me', is absent in Matthew and Mark, but a similar commandment[2] is given at the washing of the disciples' feet in John, the only gospel that does not contain a Last Supper narrative. Thus, a cohesive eucharistic praxis is not present in the gospels.

Nonetheless, eucharistic anamnesis is the cardinal locus of connection between Scripture and liturgical praxis. Further, 'remembrance' is a common feature of all the varying orthodox eucharistic traditions. The Anglican–Roman Catholic International Commission's (ARCIC) eucharistic statement bridges the theological schism in the apparently polar theologies of traditional Roman Catholicism and sixteenth-century Reformation thinking, by stating that Christians gather in the Eucharist to 'commemorate [Christ's] saving act' and to 'proclaim the Lord's death until he comes'[3]. To proclaim requires remembering. Gregory Dix in his *The Shape of Liturgy* asserts that the Eucharist *recalls* the sacrifice of Christ before God in all its 'accomplished fullness so that it is here and now operative by its effect in the souls of the redeemed'.[4]

In the Eucharist, the sacrifice of Christ is recollected in liturgical actions that take place in the present which include: the censing of the altar; the celebrant's gestures and words; approaching the altar with faith and reverence; and receiving the bread and wine as the body and blood of Christ. Eucharistic anamnesis occurs via liturgical actions in the present. In the Liturgy of the Sacrament, Jesus's admonition, 'Do this is in remembrance of me', is obeyed. Thus, remembrance is the primary activity. It is a shared, rather than individual, remembering: a communal exteriorisation of what is an interior phenomenon on an individual level.

In the communal remembrance of Christ, bread and wine are blessed by the priest and eventually consumed by all those gathered round the altar. Remembering, thus, is not so much a mental activity but an embodied joint activity via a shared memory. The memory is incarnate in those around the altar. Remembering is not limited to reconstructing the past, it includes imagining the future. As the priest pronounces,

[1]Verse 20 starts with 'In the same way', which could mean Jesus offered the cup to his disciples in the same way as the bread had been offered in the previous verse.

[2]'So if I, your Lord and Teacher, have washed your feet, you also ought to wash one another's feet.' (John 13:14, NRSV)

[3]Anglican-Roman Catholic Joint Preparatory Commission, 'Agreed Statement on Eucharistic Doctrine 1971', §§3-4, https://www.anglicancommunion.org/media/105215/ARCIC_I_Agreed_Statement_on_Eucharistic_Doctrine.pdf.

[4]G. Dix, *The Shape of the Liturgy* (London: Continuum, 1945)., 243.

Wherefore, O God,
we **remember** Christ's self-offering
we **proclaim** his mighty resurrection;
we **look** for the coming of his kingdom
and with this bread and this cup
we **make the memorial** of Christ.

In the eucharistic celebration, remembrance comprises remembering the (past) self-offering of Christ; proclaiming the (present) resurrected Christ; and looking for the coming (future) of Christ's reign. The conjoining of remembering the past and imagining the future mirrors certain medieval monastic praxes wherein the eschatological future is recollected. To explain eschatological recollection in late antiquity and in the medieval period, Mary Carruthers begins with a biblical understanding of recollection. According to her, 'the injunction "to remember", "to be mindful of", is a characteristic of the Hebrew Bible'.[5] Carruthers uses Psalm 136's '…by the rivers of Babylon…we remembered Zion'. This memory of Zion is a remembrance of that which is to come. Similarly, this notion of eschatological recollection is woven into Augustine's *De Civitate Dei*.

John Zizoulas describes the Christian praxis of recollecting the future in his *Remembering the Future: Toward an Eschatological Ontology*. Zizioulas's work draws on Scripture; early Church praxes from extant liturgical texts such as the *Didache*; and historical and contemporary Eastern Orthodox liturgy. Zizoulas concludes that liturgical anamnesis is a celebration not only of the past but of the future. According to Zizoulas: 'Eschatology is not simply a doctrine; it is an orientation, a perspective, a mode of existence. Eschatology does not only concern the future; it affects our past as well as our present'.[6] Implicit in eucharistic anamnesis is the understanding of eschatology as a remembrance of the future wherein both the past and future acts of Christ are remembered and celebrated.

Eucharistic anamnesis, mental time travel, and narrative

Eucharistic anamnesis, which involves remembering the past and future acts of Christ, necessarily requires narratives (*e.g.*, the stories of the Last Supper and the Second Coming of Christ). Narratives are also essential to viewing a person as the same through time, including oneself. It is via my personal narrative that I think of myself as a person through the landscape of my life. Out of the declarative kinds of memory, there is a clear link between autobiographical memory and personal identity. Indeed, as Shaun Nichols notes: 'In modern philosophy, memory plays a central role in discussions of personal identity'.[7] There are two main ways in which memory plays a role in contemporary philosophy, according to Nichols: first, in what makes someone the same person through time or, second, as evidence of identity with a person at a past locus of time. What Nichols refers to are the two views concerning personal identity in philosophy. The first is John Locke's (1632-1704) 'memory criterion', which he characterises thus:

[5]Mary J. Carruthers, *The Craft of Thought: Meditation, Rhetoric, and The Making of Images, 400-1200*, Cambridge Studies in Medieval Literature; 34, (Cambridge: Cambridge University Press, 1998)., 67.

[6]John D. Zizioulas, *Remembering the Future: Toward an Eschatological Ontology*, ed. Bishop Maxim (Vasiljević) (St. Sebastian Press, 2023)., Introduction.

[7]Stanley B. Klein and Shaun Nichols, 'Memory and the Sense of Personal Identity', *Mind* 121, no. 483 (2012): 677-702, https://doi.org/10.1093/mind/fzs080.

> …in this alone, consists personal identity, *i.e*., the sameness of a rational being; and as far this consciousness can be extended backwards to any past action or thought, so far reaches identity of that person; it is the same self now, it was then.[8]

Locke's is a naive view on personal identity through time and it has been subject to many objections, the most compelling counteraction being from Thomas Reid (1710-1796) on the grounds that whilst identity is transitive, memory is not.[9] To illustrate, if subject S at locus of time $t_1 = S$ at t_2, and S at $t_2 = S$ at t_3; then S at $t_1 = S$ at t_3. However, suppose S at t_1 remembers being at t_2 but not t_3, then S's lack of memory at t_3, via the memory criterion, means that S at $t_1 \neq S$ at t_3. This seems to contradict our intuition about the persistence of personal identity through time. Therefore, Locke's memory criterion fails or is insufficient to account for personal identity. Another objection, by Joseph Butler (1692-1752),[10] is that the memory criterion begs the question because memory of one's personal past requires identity in the first instance. Therefore, using memory to argue for personal identity results in a circularity. As he puts it:

> Every person is conscious, that he is now the same person or self he was, as far back as his remembrance reaches; since, when anyone reflects upon a past action of his own, he is just as certain of the person who did that action, namely himself, the person who now reflects on it, as he is certain that action was at all done.[11]

There have been attempts to reformulate the memory criterion to circumvent these issues.[12] Since the memory criterion is not of central importance to this paper, I shall not elaborate, or critique, those reformulations here. In the scope of this work, the memory criterion emphasises the intuition on the intractability of memory, personal identity, and narratives. In addition to the view of the persistence of personal identity through time, the other view of memory and personal identity is that the former serves as evidence for the latter. This a more modest view of the role of memory in relation to personal identity.[13] On this view, that I remember events which transpired last Tuesday is evidence that I have a personal identity, since it is the 'I' today that remembers and self-identifies

[8]John Locke, *An Essay Concerning Human Understanding*, 27th ed., with the author's last additions (London: T. Tegg and Son, 1836), 226.

[9]Thomas Reid, *Essays on the Intellectual Powers of Man*, Critical ed., ed. Derek R. Brookes and Knud Haakonssen, The Edinburgh Edition of Thomas Reid (University Park, PA: Pennsylvania State University Press, 2002), 276.

[10]See Joseph Butler, *The Analogy of Religion, Natural and Revealed, To the Constitution and Course of Nature. To Which Are Added Two Brief Dissertations: I. Of Personal Identity. II. Of the Nature of Virtue* (England: Printed for James, John, and Paul. Knapton, 1736).

[11]Joseph Butler, *The Analogy of Religion, Natural and Revealed, To the Constitution and Course of Nature. To Which Are Added Two Brief Dissertations: I. Of Personal Identity. II. Of the Nature of Virtue*, ed. Albert Barnes, New ed., with an intr. essay by A. Barnes (Lond. &c, 1851), 241.

[12]For examples of reformulations see H. P. Grice, 'Personal Identity', *Mind* 50, no. 200 (1941): 330-350, http://doi.org/10.1093/mind/l.200.330; Sydney Shoemaker, 'Persons and Their Pasts', *American Philosophical Quarterly (Oxford)* 7, no. 4 (1970): 269-285; Derek Parfit, *Reasons and Persons* (Oxford: Oxford University Press, 1984).

[13]Shaun Nichols, 'Memory and Personal Identity', in *The Routledge Handbook of Philosophy of Memory*, ed. Kourken Michaelian and Sven Bernecker (Oxford: Routledge, 2017), 172.

with the 'I' of last Tuesday. Both views on memory in relation to personal identity emphasise the necessity of memory of one's personal past in relation to personal identity via personal narrative.

Although an individual enterprise, the construction of personal narrative is intractably intertwined with social interactions. This is seen in autobiographical memory, which comprises semantic memory of facts about oneself in relation to others and places as well as episodic memory of events involving others and places. A self-referential 'I' makes no sense without reference to other beings. Even in the face of changes to circumstances and personal traits and tastes, narratives give coherence and continuity in personal identity. That is, a sense that 'one is the same person with the same inner life'[14] through time.[15]

Autobiographical memory is essential to the construction of personal narratives. In her *Autobiographical Memory and Narrative in Childhood*, Robyn Fivush argues that 'narratives are the pivot point where self and culture meet'.[16] For Fivush, narratives are tools for understanding and shaping culture and, as she argues, 'emerged as ways of understanding the external world'. I agree with Fivush up to a point on the function of narratives; however, I think a qualification is required. Narratives have been naturally selected not to understand the external world *simpliciter*, but for understanding being-in-the world[17] and in relation to other entities within the world. That is, narratives are unique to existential relating, not just merely existing or knowing that something is. On this view, narratives go beyond merely perceiving, recognising, and naming phenomena: narratives *make sense* of phenomena including, and with reference to, one's own personal identity. Along similar lines, Eleonore Stump, in her *Wandering in Darkness*, argues for 'narrative as a means of knowledge'.[18]

From infancy, humans are immersed in narratives. As Fivush notes: 'From the moment of birth, infants are surrounded by stories, nursery rhymes, fairy tales and stories of [the] family within which the infant was born…Well before infants can make sense of these stories, they are being drawn into participating in a storytelling world'.[19] In a longitudinal study[20] which fol-

[14]Robyn Fivush and Matthew Graci, 'Memory and Social Identity', in *Routledge Handbooks in Philosophy*, ed. Sven Bernecker and Kourken Michaelian (London: Routledge, 2017), 268.

[15]See also Hazel Estella Barnes, *The Story I Tell Myself: A Venture In Existentialist Autobiography* (Chicago: University of Chicago Press, 1997); Dan P. McAdams, 'The Psychology of Life Stories', *Review of General Psychology* 5, no. 2 (2001): 100-122, https://doi.org/10.1037/1089-2680.5.2.100; Martin A. Conway, Jefferson A. Singer, and Angela Tagini, 'The Self and Autobiographical Memory: Correspondence and Coherence', *Social Cognition* 22, no. 5 (2004): 491-529, https://doi.org/10.1521/soco.22.5.491.50768; Tilmann Habermas and Elaine Reese, 'Getting a Life Takes Time: The Development of the Life Story in Adolescence, Its Precursors and Consequences', *Human Development* 58, no. 3 (2015): 172-201, https://doi.org/10.1159/000437245; Robyn Fivush, *Autobiographical Memory and Narrative in Childhood*, Cambridge Elements. Elements in Child Development (Cambridge: Cambridge University Press, 2022).

[16]R. Fivush, 'Summary', in *Autobiographical Memory and Narrative in Childhood* (Cambridge: Cambridge University Press, 2022).

[17]My use of 'Being-in-the-world' alludes to the Heideggerian notion understood as 'a reinterpretation of the *activity of existence*'. Michael Wheeler, 'Martin Heidegger', in *Stanford Encyclopaedia of Philosophy*, ed. Edward N. Zalta (Metaphysics Research Lab, Stanford University, 2020).

[18]Eleonore Stump, *Wandering in Darkness: Narrative and the Problem of Suffering*, Wandering in darkness: narrative and the problem of suffering, (Oxford: Clarendon Press, 2010)., p.69.

[19]Fivush, *Autobiographical Memory and Narrative in Childhood*.

[20]The study examined the 'central role of three verbal–cognitive milestones related to autobiographical memory'. Izumi Uehara, 'Developmental Changes in Memory-Related Linguistic Skills and Their Relationship to Episodic Recall in Children', *PloS One* 10, no. 9 (2015), https://doi.org/10.1371/journal.pone.0137220.

lowed children from infancy to early childhood, it was found that episodic recall emerges around two years seven months, before the acquisition and use of memory-related verbs at around four years old. Episodic recall and autobiographical memory both develop with age. The age of memory verb acquirement aligns with the age at which Thomas Suddendorf and Michael Corballis argue that children attain self-knowing. According to Suddendorf and Corballis, children only acquire self-knowing with a 'temporal dimension', and thus the ability to mental time travel, at about four years old.[21]

What Suddendorf and Corballis mean by 'self-knowing with a temporal dimension' is being able to separate, and consciously reflect on, a past experience from a current experience. So, not only recollecting an event but also remembering, from a current spatiotemporal instant t_1, that the experienced event took place at another spatiotemporal instant prior to t_1, say t_{-1}. This stipulation of conscious recollection from t_1 of t_{-1}'s conscious experience is termed by Williams James as 'after-consciousness',[22] and 'autonoetic consciousness' by Endel Tulving.[23] Tulving introduces the criterion of autonoetic consciousness to preserve the notion of episodic memory and to delineate it satisfactorily—*i.e.*, phenomenologically—from semantic memory, which may sometimes, like episodic memory, have what-where-when information. For Tulving, recollecting an episodic memory is like mental time travel because it allows one to roam 'over what has happened as readily as over what might happen, independently of physical laws that govern the universe'.[24] For Suddendorf and Corballis, an absence of temporal self-knowing—*i.e.*, autonoetic consciousness—indicates an inability to mental time travel.

It seems that self-knowing is necessary for self-integration, 'the process of connecting experiences to the self',[25] which develops via narrative. There is therefore a connection between self-knowing, self-integration, personal narrative, and autobiographical memory; all these elements are tightly bound up with social context. Consequently, it is from social interactions that, and for which, episodic memory arises. This argument can be extended to episodic future thinking. The narratives we construct and relay are not restricted to the past. Fairy tales often end with 'happily ever after'. Personal narrative involves not only events from one's personal past but also includes imaginings of what could happen in the future. Thus, it is both episodic memory and episodic future-directed imagination that contribute to personal identity, not just the former. In turn, both episodic memory and episodic future-directed imagination are essential for social interactions, and both are necessary for eucharistic anamnesis.

[21]Thomas Suddendorf and Michael C. Corballis, 'Mental Time Travel and The Evolution of the Human Mind', *Enetic, Social, and General Psychology Monographs* 123, no. 2 (1997): 133-167, 140.

[22]W. James, *The Principles of Psychology*, vol. 1 (New York: Dover Publications, Inc, 1890), 644.

[23]Tulving, 'Memory and Consciousness', 1. See also Jérôme Dokic, 'Feeling the Past: A Two-Tiered Account of Episodic Memory', *Review of Philosophy and Psychology* 5, no. 3 (2014): 413-426,

https://doi.org/10.1007/s13164-014-0183-6; C. Hoerl, 'The Phenomenology of Episodic Recall', in *Time and Memory: Issues in Philosophy and Psychology*, ed. C. Hoerl and T. McCormack (Oxford: Oxford University Press).

[24]Tulving, 'Memory and Consciousness', 5

[25]T. L. Weeks and M. Pasupathi, 'Stability and Change Self-Integration for Negative Events: The Role of Listener Responsiveness and Elaboration', *Journal of Personality* 79, no. 3 (Jun 2011): 469-98, https://doi.org/10.1111/j.1467-6494.2011.00685.x.

Self-projection as a shared activity in eucharistic anamnesis

Personal narratives are nested in other wider narratives of one's immediate and extended family, peer groups, socioeconomic, national, and historical narratives. These wider narratives are shared wherein the self-referential 'I' of personal narratives blends into group-referential 'we'. As with personal narratives, shared narratives are also inextricably interconnected with self-projection. Shared narratives are about a jointly remembered past as well as a jointly imagined future. I take the self-projection involved in shared narratives as a communal activity. Eucharistic anamnesis is one such communal activity. The concept of 'master narrative' is the backdrop to shared projection. 'Master narratives express canonical storied forms of world-making and constrain the forms and functions of individual storytelling in ways that create conformity among members of the same storytelling group (*i.e.*, the culture or subculture)'.[26]

Christian master narrative goes beyond the narratives of Scripture to include liturgical praxis, hence why I view the Eucharist as the cardinal locus of connection between Scripture and liturgical praxis. So construed, the Eucharist[27] is not just an outflow of a master narrative, but it is itself a master narrative. As a master narrative, the Eucharist is an embodiment of Christian Scripture which shapes the faith, beliefs, and actions of its participants. As a master narrative, the Eucharist is at the heart of Christianity. As a master narrative, remembering the past and imagining the future are essential in eucharistic celebration. Recall that in the eucharistic celebration, remembrance comprises remembering the (past) self-sacrifice of Christ; proclaiming the (present) resurrected Christ; and looking for the coming (future) of Christ's reign. Eucharistic anamnesis thus involves an embodied mental time travel across the temporal landscape of the Christian master narrative. Hence, the self-projection involved in eucharistic anamnesis is a communal activity, wherein the self is viewed as tightly bound up with others gathered around the altar through space and time.

II. MENTAL TIME TRAVEL, SELF-PROJECTION, AND PERSONALITY-GROWTH

To demonstrate how shared projection in eucharistic anamnesis aids psychospiritual growth, I draw on studies in experimental psychology on the phenomenon of 'personality-growth'. 'Personality-growth' is the idea that a person's personality can get *morally* better via the development of measurable personality traits and degree of self-integration. Thus, personality-growth is useful in characterising and evaluating the psychospiritual dimension by allowing for moral evaluation of character whilst it can be scientifically investigated.

Conducting a scientific literature review of mental time travel in relation to personality-growth in psychological science raises some preliminary issues. First, terms used for the phenomenon of remembering the past and imagining the future differ in philosophy and psychology. In psychology, remembering is referred to as 'retrospection' whilst imagining the future is referred to as 'prospection'. Second, in the declarative taxon of memory, the kind of memory usually cited in psychology in relation to personality-growth is semantic, rather than episodic, memory. Recall that semantic memory is memory of facts, whilst episodic

[26]Fivush, *Autobiographical Memory and Narrative in Childhood*.

[27]The following analysis is based on Order One of the Church of England Holy Communion service https://www.churchofengland.org/prayer-and-worship/worship-texts-and-resources/common-worship/holy-communion#na.

memory is memory of events. This is probably because the labels used for personality traits are stored as semantic memory, therefore studies are designed to track semantic rather than episodic memory. However, I argue that episodic memory and episodic future-directed thinking aid personality-growth.

A third preliminary issue that conducting a literary survey on mental time travel in psychology throws up is that an archival model of memory is often implicitly and explicitly assumed. An archival model of memory is the view that memory is acquired and stored, and subsequently reproduced, in remembering. An example of an archival model of memory is Plato's model of a 'wax tablet' on which experiences are imprinted and reproduced as memories. An alternative model of memory, which I argue for briefly here and more extensively in other work, is the simulation model of memory.[28] According to this view, episodic memory is not reproduced from static impressions but dynamically simulated like, and via the same mechanisms as, future-directed imagination. The simulation model of memory is supported by recent findings in cognitive neuroscience and experimental psychology. However, in some of the surveyed literature, an archival model of memory is assumed. For example, in the highly influential paper by Daniel Gilbert and Timothy Wilson, 'Prospection: Experiencing the Future', the storage characteristic of memory is stressed and contrasted to the simulation characteristic of the imagination. The fourth preliminary issue is that not enough attention is paid to the social dimension of memory for which I argue in this paper.

Mental time travel in psychology: two foundational texts

As explained, in psychology, mentally travelling back in time to re-live past events is termed 'retrospection' and mentally travelling forward in time to pre-live the future in possible events is termed 'prospection'. Hence, 'retrospection' and 'prospection' are the first two key words I use in investigating the literary landscape of published research in psychology. Two key foundational texts in psychology on the phenomena of retrospection and prospection are Gilbert and Wilson's aforementioned 'Prospection: Experiencing the Future' (2007), and 'Navigating into the Future or Driven by the Past' (2013) by Martin Seligman, Peter Railton et al. In their 2007 article, Gilbert and Wilson argue that only humans can pre-experience the future by simulating its hedonic consequences: that is, the degree of pleasure or pain of an experience. They support their argument with two kinds of scientific evidence. First, they cite various neuroscience research on the mechanisms for prospection. They identify the frontal cortex as involved in the simulation process of hedonic consequences, as well as the prefrontal cortex and the medial temporal lobes as being the 'default network' for simulation. They conclude 'few if any other animals are able to simulate future events, and even our closest relatives in the animal kingdom may be "stuck in time"'.[29]

Gilbert and Wilson go on to note that dopamine neurones in the midbrain encode information about possible magnitudes of pleasure that future events may elicit; in turn, the simulation of future pleasurable events activates subcortical structures such as the nucleus accumbens and the anterior regions of the ventral striatum. Conversely, simulation of future painful events activates the amygdala. Finally, they note, 'pre-feeling' the simulated events depends on the ventromedial prefrontal cortex.[30] Gilbert and Wilson identify these brain

[28]B. Fatona. 'Embodied constructivism: the imagination as a vehicle for mental time travel', *Religious Studies* (2025):1-20, http://doi.org/10.1017/S0034412525100905.

[29]Daniel T. Gilbert and Timothy D. Wilson, 'Prospection: Experiencing the Future', *Science* 317, no. 5843 (2007): 1351-54, 1352, https://doi.org/10.1126/science.1144161.

[30]Gilbert and Wilson, 'Prospection: Experiencing the Future', 1352.

regions from cited studies on those with damage to relevant regions, and other neuroimaging studies. From these identifications of brain regions in the simulation, pre-experiencing, and pre-feeling hedonic consequences of future events, they propose a theory for how errors in prospection occur. Gilbert and Wilson's theory is not relevant to this research; what is relevant is the idea that cognitive agents simulate and use representations of future events to make decisions and to guide action.

Gilbert and Wilson cite cases of amnesiacs who, along with their loss of retrospection, have also lost their ability for prospection. This observation on the co-functionality of retrospection and prospection does not lead to the conclusion that retrospection and prospection occur via the same (simulation) mechanisms as simulationist accounts[31] of mental time travel assert. Instead, they conclude that memory is the 'building block' for simulation, asserting instead an archival, or 'wax tablet', rather than a simulationist model of memory. As explained, a simulationist model of memory holds that memory is constructed in a similar manner and via the same mechanisms as imagination.

Like Gilbert and Wilson, Seligman et al. argue that retrospection and prospection are important for predicting the future, planning, and guiding behaviour. Unlike Gilbert and Wilson, however, for Seligman et al. it is not only humans that can use these cognitive abilities: 'intelligent [nonhuman] animals draw on experience to update a branching array of evaluative prospects that fan out before them'.[32] To support their argument, Seligman et al. cite studies on nonhuman animals and on humans which range from rats in T-mazes to neuroimaging studies. Seligman et al. reject Gilbert and Wilson's idea that prospection is a top-down—that is, from the cortex level—cognitive process. They argue instead not just for conscious but implicit simulations of future events.[33] In even more striking contrast to Gilbert and Wilson, Seligman et al. take a simulationist view of memory, arguing that the co-functionality of retrospection and prospection is because of their shared mechanisms for the 'flexible recombination of information'.[34] Unlike Gilbert and Wilson, Seligman et al. argue that both retrospection and prospection occur via simulation. All the same, they agree with Gilbert and Wilson that prospection is for future planning and action selection. It is this driving of future planning and action selection that connects prospection and retrospection with personality-growth.

Mental time travel and personality-growth: recent studies in psychology

Neither of the reviewed articles by Gilbert and Wilson nor the one by Seligman et al. connects retrospection and prospection with personality-growth; indeed there are very few studies in psychology which connect retrospection and prospection with personality-growth as the literature review I conducted reveals. On taking a closer look at these studies, I make the following observation on the term 'prospection'. In the reviewed studies, 'prospection' covers a range of future representations including semantic, affective (*e.g.*, as static threats to oneself), episodic, and some or all of these. The phenomenon of prospection is only studied in first-person

[31]For example, see Kourken Michaelian, *Mental Time Travel: Episodic Memory and Our Knowledge of The Personal Past* (Cambridge, Massachusetts: MIT Press, 2016).

[32]Martin E.P. Seligman, Peter Railton, Roy F. Baumeister, and Chandra Sripada, 'Navigating Into the Future or Driven by the Past', *Perspectives on Psychological Science* 8, no. 2 (2013): 119-141, 119, https://doi.org/10.1177/1745691612474317.

[33]Seligman et al, 'Navigating Into the Future or Driven by the Past', 126.

[34]Seligman et al, 'Navigating Into the Future or Driven by the Past', 129.

representations rather than allowing for perspectival flexibility. That is, participants are not encouraged to imagine scenarios from others' perspectives. Finally, there are correlations between prospection and (some) character traits such as: greed,[35] procrastination,[36] impulsivity,[37] delay discounting,[38] and optimism.[39]

From this review, I draw some preliminary conclusions. As already mentioned, there is a correlation between prospection and personality. However, I note that correlation is not necessarily causation. That is, there may be no causal connection between prospection and personality-growth, with the apparent correlation being epiphenomenal or even coincidental. Further, the correlation between prospection and personality is not necessarily positive, as seen in the studies on greed and anxiety. In some of the surveyed studies, there were commonalities in the neuroanatomical and functional substrates of prospection and greed,[40] or imagining the future made participants anxious and thus risk-averse.[41] Therefore, prospection is not a sufficient condition for personality-growth. This means that at least another factor, in addition to prospection, is required for a positive outcome in relation to personality-growth.

Self-projection aids self-growth: an argument

In arguing that mental time travel aids self-growth, here are some delimitations of terms: I use the terms 'retrospection' as remembering the past and 'prospection' as imagining the future interchangeably with 'self-projection'. Retrospection and prospection are used to refer to different kinds of memory and future-directed thinking; however, I use them specifically in relation to episodic remembering and imagining, that is, memory and imagination of events. Similarly, I use 'personality-growth', 'self-growth' and 'psychospiritual growth' interchangeably. In doing this, I make no metaphysical assertions about the self.

How does self-projection aid self-growth? Self-growth, as it is used in this article, is an amalgamation of psychological, ethical, and theological understandings on what it is for one's

[35]Wang et al, 'Neuroanatomical and Functional Substrates of the Greed Personality Trait'.

[36]S. Zhang et al, 'Outcome Value and Task Aversiveness Impact Task Procrastination through Separate Neural Pathways', *Cerebral Cortex* 31, no. 8 (2021): 3846-55, https://doi.org/10.1093/cercor/bhab053; Zhiyi Chen et al, 'Brain Morphological Dynamics of Procrastination: The Crucial Role of the Self-Control, Emotional, and Episodic Prospection Network', *Cerebral Cortex* 30, no. 5 (2020): 2834-53, https://doi.org/10.1093/cercor/bhz278; R. Zhang et al, 'The Overlapping Region in Right Hippocampus Accounting for the Link between Trait Anxiety and Procrastination', *Neuropsychologia* 146 (Sep 2020): 107571, https://doi.org/10.1016/j.neuropsychologia.2020.107571.

[37]A. L. Burrow and R. N. Spreng, 'Waiting with Purpose: A Reliable but Small Association Between Purpose in Life and Impulsivity', *Personality and Individual Differences* 90 (Feb 2016): 187-89, https://doi.org/10.1016/j.paid.2015.11.010.

[38]R. Zhang et al, 'The Neural Basis Underlying the Relation Between the Action Identification Level and Delay Discounting: The Medial and Orbital Frontal Cortex Functional Connectivity with the Precuneus', *International Journal of Psychophysiology* 159 (2021): 74-82, https://doi.org/10.1016/j.ijpsycho.2020.11.014.

[39]J. L. Ji, E. A. Holmes, and S. E. Blackwell, 'Seeing Light at The End of The Tunnel: Positive Prospective Mental Imagery and Optimism in Depression', *Psychiatry Res* 247 (2017): 155-162, https://doi.org/10.1016/j.psychres.2016.11.025.

[40]Wang et al, 'Neuroanatomical and Functional Substrates of the Greed Personality Trait'.

[41]H. Huo et al, 'The Effect of Trait Anxiety On Risk-Taking: Functional Coupling Between Right Hippocampus and Left Insula', *Psychophysiology* 57, no. 10 (2020): e13629, https://doi.org/10.1111/psyp.13629.

personality to develop positively. A person's personality is an agglomeration of patterns of behavioural, cognitive, and affective adaptability[42] to environmental and societal changes.[43] How it is that personality (usually) functions as a cohesive unity, considering the plurality of processes involved in its realisation, is an active area of research. Relatedly, Markus Quirin and Julius Kuhl observe that, almost a century after Gordon Allport's quest to understand the unity of personality,[44] 'contemporary personality psychology still concerns itself with the intricate question he poses on how personality processes play together to render it a coherent whole, just like musical elements create a symphony'.[45]

In psychology, self-growth is measured via the adaptability or adjustment to change. So, the degree to which one copes, and perhaps even flourishes, in relation to environmental and societal changes. Adjustment is, in turn, measured via personality traits, usually the Big Five model.[46] Another way adjustment is measured in psychology is via the notion of 'self-integration' which is, roughly, the degree of cohesion or unity within oneself.[47] In addition to being concerned with the mechanisms that aid the synchronic unity of personality, personality assessment is the leading task performed by psychologists.[48] This means that there is a proliferation of personality-related studies adorning psychology's literary landscape.

In theology, and for Augustine of Hippo (AD 354-430) specifically, self-growth is qualitative rather than quantitative. That is, a person's soul gets better rather than bigger. For Augustine, a soul's qualitative growth is the degree to which that soul advances towards God.[49] Even in psychology, definitions of self-growth sometimes incorporate a theological sense by using terms such as 'spiritual' growth.[50] It seems to me that 'self-growth' allows for spiritual, in relation to psychological, growth. Thus, it is because of this allowance for psychospiritual understanding of a person that I prefer the term 'self-growth' or 'psychospiritual growth' to 'personality-growth'.

[42]Affective adaptability is also referred to as 'adjustment'.

[43]Gary R. VandenBos, *APA Dictionary of Psychology*, 1st ed. (Washington, DC: American Psychological Association, 2006).

[44]See Gordon W. Allport, *Personality; A Psychological Interpretation* (London: Constable, 1938), and Gordon W. Allport, 'The Functional Autonomy of Motives', *The American Journal of Psychology* 50, no. 1/4 (1937): 141-56, https://doi.org/10.2307/1416626.

[45]Markus Quirin and Julius Kuhl, 'The Concert of Personality: Explaining Personality Functioning and Coherence by Personality Systems Interactions', *European Journal of Personality* 36, no. 3 (2022): 274-292, 274, https://doi.org/10.1177/08902070221078478.

[46]Allport presents methods for measuring personality-growth via traits—see Gordon W. Allport, *Pattern and Growth in Personality* (London: Holt, Rinehart & Winston, 1963).

[47]Julius Kuhl, Markus Quirin, and Sander L. Koole, 'Being Someone: The Integrated Self as a Neuropsychological System', *Social and Personality Psychology Compass* 9, no. 3 (2015): 115-32, https://doi.org/10.1111/spc3.12162.

[48]Gerald Goldstein, Daniel N. Allen, and John DeLuca, *Handbook of Psychological Assessment*, Fourth edition (Amsterdam: Academic Press, 2019).

[49]See Augustine, *De Quantitate Animae*.

[50]For example, see Richard G. Tedeschi and Lawrence G. Calhoun, 'Posttraumatic Growth: Conceptual Foundations and Empirical Evidence', *Psychological inquiry* 15, no. 1 (2004): 1-18, https://doi.org/10.1207/s15327965pli1501_01.

From the earlier review of current studies in psychology on prospection in relation to personality, I conclude that prospection is not a sufficient condition for personality-growth. Further, although I shall argue that prospection aids self-growth, I do not think prospection is a necessary requirement for self-growth. This is because of those who, owing to brain damage or malformation, cannot carry out prospection or retrospection. If self-projection via retrospection or prospection were a necessary requirement for self-growth, then those who lack this ability cannot experience self-growth, which seems false. Not being able to remember past events or imagine future ones does not preclude knowing and choosing to be honest or kind. And it does not preclude one from becoming more honest or kinder. Although self-growth is neither a necessary nor is it a sufficient requirement for self-growth, I argue that it can nonetheless be a significant positive factor in self-growth. From these reviewed studies, that prospection is connected to personality, decision-making, and action selection is not in doubt.

However, there are some issues with self-projection that stop it from being a necessarily positive factor in self-growth. Therefore, to argue for self-projection as a positive aid to self-growth, I first examine ways in which self-projection can be a negative factor in action selection. From the reviewed studies, I see three reasons: shortsightedness; affective response to hedonic consequences; and self-preference. The last two reasons are interlinked.

Shortsightedness

In both the foundational texts on prospection in psychology discussed previously, the authors give reasons for instances when the mechanisms for prospection fail. My focus is not on instances of when, or why, prospection fails; instead, I am concerned with instances when prospection acts as a negative factor in action selection, although I note that there are overlaps in both kinds of instances. One of the reasons self-projection can act as a negative factor is shortsightedness. That is, shortsightedness in relation to goals or consequences. As Gilbert and Wilson observe: 'Simulations are naturally abbreviated and represent just a few, select moments of a future event'.[51] They go on to note the simulations are temporally limited. An example they give is when people imagine winning the lottery, they imagine the immediate moments after the win, not hundreds of days afterwards. This shortsightedness in self-projection can be a negative factor in making decisions by preferring immediate consequences rather than considering longer term ones. In Christian mystical theology, the ultimate end, which ought to be the ultimate consequence for Christians, is union with God. Thus, for theists and according to mystical theology, this ultimate consequence ought to be a fixed and permanent horizon in imagining the future, albeit in an implicit, rather than an explicit, way.

Self-preferring affective responses

Gilbert and Wilson note that simulations of the future elicit an affective response, and they and Seligman et al. identify the brain regions responsible for generating this 'prefeeling'[52] or 'affective forecasting'.[53] It is via the lens of this pre-feeling that actions are selected in relation to hedonic consequences of the simulated events. Gilbert and Wilson compellingly argue that prefeeling is influenced by the current not just the simulated context.[54] Since simulations are usu-

[51]Gilbert and Wilson, 'Prospection: Experiencing the Future', 1353.

[52]Gilbert and Wilson, 'Prospection: Experiencing the Future', 1352.

[53]Seligman et al, 'Navigating Into the Future or Driven by the Past', 126-128

[54]Gilbert and Wilson, 'Prospection: Experiencing the Future', 1352.

ally in the first-person perspective, so are the hedonic consequences considered in decision-making and action selection. How pleasurable or painful am *I* likely to find an event? Thus, decisions made and actions selected via the lens of self-focused pre-feeling are self-preferring. However, perspectival flexibility in simulations shows that it is possible to make decisions or select actions that are not self-preferring.

In an article, 'Being Someone: The Integrated Self as a Neuropsychological System', Julius Kuhl, Markus Quirin, and Sander L. Koole, in addition to other factors, argue for the importance of positive relationships for a 'fully functioning self'.[55] They go on to argue, citing relevant studies, that the integrated self—that is, the fully functioning, well-adjusted personality—is supported more by the right hemisphere of the brain than the left,[56] the right prefrontal cortex in particular. What is interesting about this, and supports the advanced argument, is that the right prefrontal cortex, which is involved in prospection, has also been shown to be involved in personal emotional connection. Kuhl, Quirin, and Koole cite[57] a study[58] showing right prefrontal cortex activity when mothers attempt to identify different emotions of their infants. In contrast, other women lacking a personal emotional connection but nonetheless responding positively to infants, failed to show the same prefrontal cortex activity.[59] Relatedly, as I note above, Gilbert and Wilson identify the prefrontal cortex along with the medial temporal lobes as being the 'default network' for simulation. This connection between other-focus, prospection, and self-integration supports the argument that prospection can be a significant positive factor in self-growth if it is not (only) self-preferring.

The idea that prospection can be a significant factor in self-growth if it is not only self-preferring connects well with Augustine's reorienting of the virtues in relation to love (for God). In his *De Moribus Ecclesiæ Catholicae et de Moribus Manichaeorum* ('The Catholic Way of Life and the Manichean Way of Life'), Augustine reweaves the Platonic idea of the four cardinal virtues as inhering in love. For him, and as per 1 John 4:8, God is love. He thereby asserts:

> **Temperance** is love preserving itself whole and entire for God. **Fortitude** [courage] is love readily enduring all things for God. **Justice** is love that serves only God and, for this reason, correctly governs other things that are subject to a human being. And **prudence** is love distinguishing correctly those things by which it is helped toward God from those things by which it can be impeded.[60]

[55]Kuhl, Quirin, and Koole, 'Being Someone: The Integrated Self as a Neuropsychological System'.

[56]Kuhl, Quirin, and Koole, 'Being Someone: The Integrated Self as a Neuropsychological System', 121. [54] In noting that self-integration depends more on the right prefrontal cortex, I do not argue for a hemispheric theory, rather I go on to make a connection with that region of the brain with prospection.

[57]Kuhl, Quirin, and Koole, 'Being Someone: The Integrated Self as a Neuropsychological System', 122.

[58]Shota Nishitani et al, 'Differential Prefrontal Response to Infant Facial Emotions in Mothers Compared with Non-Mothers', *Neuroscience Research* 70, no. 2 (2011): 18388, https://doi.org/10.1016/j.neures.2011.02.007.

[59]See also Diana Van Lancker, 'Personal Relevance and the Human Right Hemisphere', *Brain and Cognition* 17, no. 1 (1991): 64-92, https://doi.org/10.1016/0278-2626(91)90067-I.

[60]Reprinted in Robin W. Lovin, 'Moral Traditions in Eastern and Western Christianity', in *The Cambridge Companion to Christian Ethics*, 2nd edition, ed. Robin Gill (Cambridge: Cambridge University Press, 2012), 22.

Building on Aristotelian ethics and Augustinian theology, for Thomas Aquinas (1225-1274): '*..virtus est bona qualitas mentis, qua recte vivitur, qua nullus male utitur, quam Deus in nobis sine nobis operatur*'.[61] 'Virtue is a good quality of the mind, by which one lives correctly, which no one uses for ill, by which God works in us [and] without us'. Augustine's and Aquinas's reorientation of the virtues towards God mitigates the negative role of self-preferring affective response in action selection, because love for God is above love for one's own self.

III. PSYCHOSPIRITUAL GROWTH AND EUCHARISTIC ANAMNESIS

Advancing an isomorphic argument to the idea that self-projection aids self-growth, I aver here that the shared projection in liturgical anamnesis is necessary for shared growth. The first strand of the argument that self-projection aids self-growth is that self-projection which is not self-preferring aids self-growth, which is supported by scientific findings surveyed in part II. The second strand of the argument is that narrative is intractably intertwined with self-projection; and as laid out in part I, eucharistic anamnesis is a master narrative. Weaving these strands together, the shared, embodied self-projection in eucharistic anamnesis aids (shared) growth. I identify two kinds of growth that occur in the shared projection of eucharistic anamnesis. First is the growth of those who participate in the Eucharist into the body of Christ: humanity in loving communion with one another and in union with God comprise the *imago Dei*. That is, the image of God as consubstantial, the tri-unity of the persons of the Godhead in perpetual union with one another. Thus, the body of Christ serves as a paradigm for persons in loving communion with one another and in mystical union with the unified persons of the Trinity.

For both Vladimir Lossky and Pierre Teilhard de Chardin, love results in a collective consciousness. For de Chardin, the true 'personification of man' happens within union with others. According to him, 'we can only find our person by uniting together'.[62] Lossky agrees with this when he asserts the 'uniqueness of a person' is only realised in a 'positive relationship with other persons'.[63] Both Lossky and de Chardin strongly criticise post-enlightenment individualism, which mistakes 'individuality for personality'[64] or person for individual.[65] Along similar lines, Alasdair MacIntyre argues in his *After Virtue* against an individualised or 'atomised' view of human actions. Like Aquinas, MacIntyre's argument draws on Aristotelian teleology of the end or purpose of an action, and of a human being. He argues that actions can only be judged or made sense of via 'narrative history'.[66] For MacIntyre, a narrative history is not restricted to an individual: 'the narrative of one life is part of a set of

[61]Thomas Aquinas, *Summa Theologiae* IaIIae, q.55, q.4, obj.1.

[62]Pierre Teilhard de Chardin, Bernard Wall, and Julian Huxley, *The Phenomenon of Man* (London: Collins, 1959), 263.

[63]Vladimir Lossky, John H. Erickson, and Thomas E. Bird, *In the Image and Likeness of God* (Crestwood, NY: St. Vladimir's Seminary Press, 1974), 186.

[64]Teilhard de Chardin, Wall, and Huxley, *The Phenomenon of Man*, 263.

[65]Lossky, Erickson, and Bird, *In the Image and Likeness of God*, 185.

[66]Alasdair C. MacIntyre, *After Virtue: A Study in Moral Theory*, Third edition (with prologue) (London: Bloomsbury Academic, 2013), 183-184.

interlocking narratives [of others' lives]'.[67] The notion of making sense of an action through narrative history requires self-projection across a narrative's temporal landscape. This self-projection need not be egocentric. From an allocentric viewpoint, one can self-project into another's narrative history, what Stanley Cavell terms 'empathic projection'. For Cavell, empathic projection is not merely an identification of another but an identification *with* another.[68]

Those who participate in the Eucharist jointly attain the full stature of the body of Christ and take on the image of God by living in the love that celebrates as well as unites its participants. I use participation in a Platonic sense, wherein a thing or an *eikon*, E, say, is an image of another object, O, because E participates in O. In *Timaeus*, Plato takes time to be an *eikon* or image of eternity. I term this a participatory likeness wherein resemblance is not what instantiates E's likeness of O, but participation of E in O. Analogously in liturgical theology, the Church's dynamic participation in God, via eucharistic remembrance, reconstructs the Church into the image of God. Eucharistic remembrance effects a transubstantiation, as it were, of those gathered into the *imago Dei*. The image of God is seen in love for another. According to Paul, love is the **'**greatest of these', that is, of the trinity of psychospiritual virtues: 'faith', 'hope', and 'love'. Love mirrors the ontology of the triune God; 'the absolute character of their difference implies an absolute unity'.[69] The Church's progression towards the full stature of Christ, by growing in the psychospiritual virtue of love, is the first kind of self-growth that occurs via liturgical anamnesis.

The second kind of self-growth via liturgical anamnesis is self-growth on an individual level. The shared projection of liturgical anamnesis is another way to attain a self-projection that is not self-preferring. The shared projection of eucharistic anamnesis also avoids the pitfalls of a self-preferring self-projection of shortsightedness, that is, limiting factors to positive self-growth (see part II). In the shared projection of anamnesis, the focus is not on temporally immediate hedonic consequences. The focus is on the 'coming of Christ's kingdom' as per the eucharistic prayer. Consequently, the communal self-projection of those who participate in the Eucharist aids growth into the body of Christ as well as self-growth on an individual level.

IV. SUMMARY AND CONCLUSION

In this paper, using experimental psychology, cognitive neuroscience, and analytic philosophy, I connect the theological concept of the Eucharist with the psychological concept of personality-growth via the phenomenon of mental time travel. The connection involves a two-stage argument. The first stage avers that mentally travelling back in time to re-live past events and mentally travelling forward in time to pre-live future ones are significant factors in personality-growth. The second stage is an isomorphic argument to the first, in which I argue that shared projection in liturgical anamnesis of the Eucharist aids psychospiritual growth. Shared projection in eucharistic anamnesis is thus a significant condition for the Church's growth. Nevertheless, I do not think that the shared projection in the Eucharist is

[67]MacIntyre, *After Virtue*, 191.

[68]Stanley Cavell, *The Claim of Reason: Wittgenstein, Skepticism, Morality, and Tragedy* (New York: Oxford University Press, 1999), 421.

[69]Lossky, Erickson, and Bird, *In the Image and Likeness of God*, 113

a sufficient condition for ameliorative growth since there are many instances wherein the Church's moral character has developed negatively rather than positively by failing to love the other. In this work, I leave it an open question what the other factors are for psychospiritual growth.

Delimitations

In this work, my focus is on personality-growth rather than personhood or selfhood *per se*. However, I note that I consider overlapping notions such as 'personality', 'personal identity', and 'self-integration'. Further, I offer an idea of selfhood in relation to others. All the same, the philosophy and theology of personhood sit outside the scope of this work. Similarly, although they might be overlapping phenomena, my focus is on 'personality-growth', reconstrued as 'psychospiritual growth', rather than on 'spiritual growth' *per se*.

DATA AVAILABILITY STATEMENT

Data sharing not applicable to this article as no datasets were generated or analysed during the current study.