Anti-time[1]

An objective time should pass regardless, but a virtual time passes based on program cycles. In an online game, time is measured in frames-per-second (fps), and it literally slows down if the computer is busy. Likewise we measure time by atomic clocks that also literally slow down if they are close to massive bodies, i.e. our time behaves just like a virtual time that slows down under load.

Matter experiences one time "tick" per forward processing cycle, so anti-matter running the same processing cycles in reverse logically runs our time in reverse. That all time works the same way isn't a reasonable assumption for anti-matter (Ambjorn, Jurkiewicz, & Loll, 2008). If our time is virtual, it will must have an anti-time inverse, so anti-matter will exist in anti-time as matter exists in our time. For us, one processing cycle is one "tick" of time but for anti-matter the reverse is true. We exist by surviving forward cycles but anti-matter exists by those cycles in reverse. Anti-time is our time running backwards. *To us*, anti-matter runs time in reverse, but *to it* we are running time in reverse.

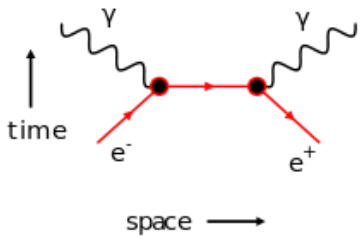

Figure. A Feynman Diagram

Reversing the processing of matter changes the direction of time. A Feynman diagram of an electron meeting an anti-electron shows the latter *entering* the collision going *backwards* in time (Figure). The logic is correct but the anti-electron is still entering the interaction, although *its* time is *ours* in reverse. The Feynman diagram needs two time axes, one for matter and one for anti-matter.

If time was absolute anti-time would deny causality and every event that was or will be could be paged like a book (Barbour, 1999). Yet if we could move in time as we do in space, an information based reality would be impossible because *choice* would be denied (see 2.2.1). Choice by definition is the picking of an option from a finite set, any of which could be chosen. If there was a fixed future, our choices today would be already made, and so not choices at all. Or if we could return to the past to alter it, then the context of the now choice is undefined[2]. This model only operates in an everlasting now.

In quantum realism, a physical event is quantum programs overloading the grid network causing a node to reboot. Now a reboot by definition is irreversible, as the previous state is lost, so if a physical event is a quantum reboot, it can't be undone. So the quantum system tries every option in private but a physical event is public with no undo[3]. Anti-matter runs our time in reverse *in-between* physical events but it can no more reverse its physical acts than matter can. In quantum realism, physicality can't be reversed, rewound or fast-forwarded, in matter or anti-matter worlds, so there is no time travel.

Ambjorn, J., Jurkiewicz, J., & Loll, R. (2008). The Self-Organizing Quantum Universe. *Scientific American*, *299 July*(1), 24–31.

Barbour, J. (1999). *The End of Time: The next revolution in physics*. Oxford: Oxford University Press.

[1] This is section 4.3.5 from Chapter 4 The Matter Glitch: An Alternative to the Standard Model, of the forthcoming book Quantum Realism by Brian Whitworth. The link gives a free early access to the whole chapter.

[2] If my going back in time causes my ancestor to die, I don't exist so can't choose to go back in time.

[3] Networks can't *locally* reverse interactions. A browser Back button can undo passive views, but it must roll back both parties for interactions like registrations, so with six degrees of separation, rolling back six events for one person could roll back the entire web.