

Schrödinger's Cape: The Quantum Seriality of the Marvel Multiverse

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On the surface, quantum physics and narrative theory are not easy bedfellows. In fact, some may argue that the two fields are incommensurable paradigms and any attempt to prove otherwise would be a foolhardy endeavour, more akin to intellectual trickery and sleight-of-hand than a prism with which to view narrative systems. Yet I find myself repeatedly confronted by these two ostensibly incompatible theories converging as I explore the vast narrative networks associated with fictional world-building -- most notably those belonging to comic book multiverses of Marvel and DC Comics which, Nick Lowe argues “are the largest narrative constructions in human history (exceeding, for example, the vast body of myth, legend and story that underlies Greek and Latin literature)” (Kaveney, 25).

Contemporary quantum theory postulates that the universe is not a singular body progressing linearly along a unidirectional spatiotemporal pathway – as exponents of the Newtonian classic physics model believe – but, rather, a multiverse comprised of alternate worlds, parallel dimensions and multiple timelines. Both Marvel and *bête noire* DC Comics embrace the multiverse concept that allows multiple iterations, versions and reinterpretations of their character populations to co-exist within a spatiotemporal framing principle that shares remarkable commonalities with the quantum model. Where Marvel and DC deviate from one another, however, is that the latter utilises the conceit as an intra-medial model for its panoply of comic books; whereas, conversely, the Marvel multiverse functions as a transmedia firmament that encapsulates an entire catalogue within its narrative rubric, a strategy that is analogous with the quantum paradigm.

To offer a brief example, one which I shall return to later, part of the great pleasure for readers of vast narrative networks, especially comics, is the principle of continuity which

works both serially and sequentially to construct a story-world of fragmented episodes, or ‘micro-narratives’ (Ryan, 373) into a unified, ‘macro-structure’ (ibid). For DC Comics, films such as *Batman Begins* or *The Man of Steel* do not belong to an overarching multiverse but, instead, operate outside official narrative parameters which raise significant questions about legitimacy and canon, questions that matter a great deal to ardent fans and explorers of these vast narratives. Conversely, the Marvel multiverse is an exemplar of what I describe as quantum seriality – that is, a labyrinthine narrative network that incorporates a wide array of transmedia expressions into an ontological order that rationalises divergent textualities as a part and parcel of the same story-system which canonises *all* Marvel creations -- whether in film, TV or, indeed, comics -- as official and legitimate. Unlike DC, then, “[i]n the Marvel universe, everything has happened” (Tyler, 170).

1. A Brief History of the Multiverse

In 1957, Hugh Everett III’s “many-world interpretation” (MWI) challenged the classical physics model by hypothesising that the universe is a many splintered organism of parallel branches perpetually reproducing and expanding. Thus, in place of universe, we have multiverse comprising an immeasurable array of alternative realities and parallel worlds. Everett developed his thesis as a way to solve the Schrödinger’s Cat conundrum which began as a jocular thought experiment but, instead, has become one of the principle cornerstones of the field. Angered by a subset of quantum theorists who he believed misinterpreted his work, Erwin Schrödinger crafted his thought experiment to ridicule the Copenhagen interpretation of quantum physics which claimed that observation or measurement was the key catalyst in the performance of atoms and electrons. If an experiment remains unobserved then the outcome remains unknowable and exists in a superposition between two states thus presenting a quantum aporia. Schrödinger’s thought puzzle features a cat, a Geiger counter, a

vile of poison and a molecule (whether atom or electron) inside a steel chamber. Within the Geiger counter is a microscopic radioactive particle that may decay or with equal probability may not. Should the atom decay, the poison is released and the cat dies; if it does not, the cat lives. The paradox presented by Schrödinger, however, posits that until the steel chamber is opened and observed then the cat exists in what is called a “super-position of states,” that is, both alive and dead at the same time. The act of observation causes the super-position – or, alternatively, wave-function -- to collapse and the result is that the cat is definitively either alive or dead.

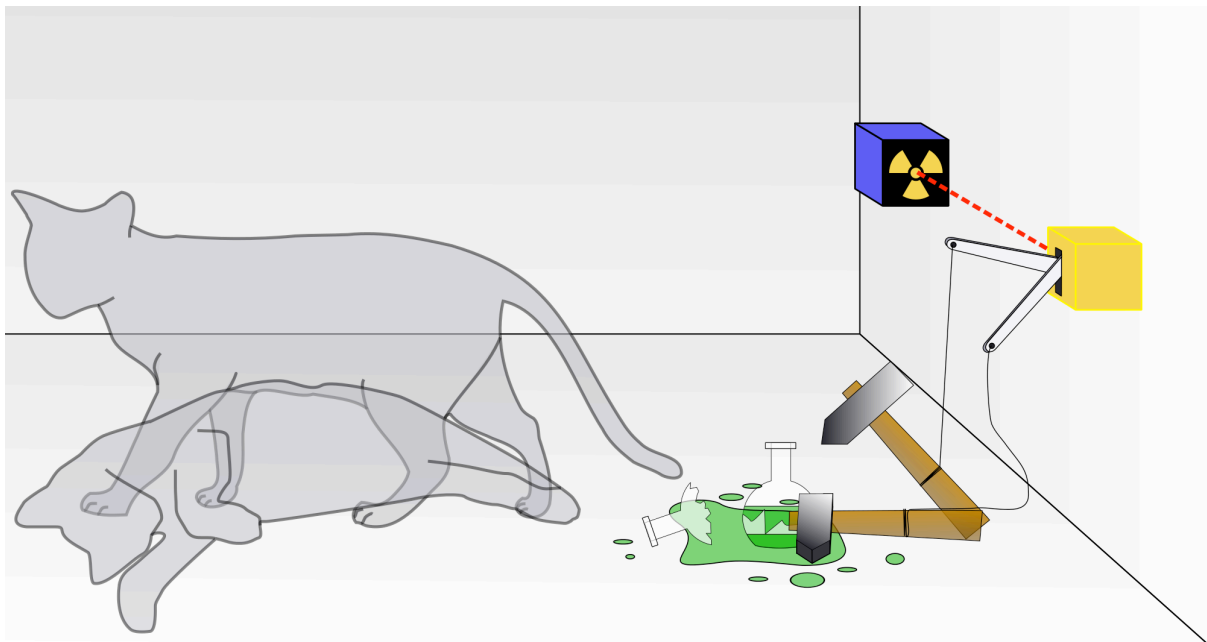


Figure 1

For Everett, however, the act of observation does not collapse the wave function or solve the super-position but creates “a bifurcation at the moment in time where the measurement or observation is made” (Gribbin, 26). Thus, the super-position does not collapse into one state, ‘but the entire universe splits’ (ibid) into “two equally real worlds, superimposed on one another, but never able to influence one another – a universe with a dead cat and a universe with a live cat” (30). This quantum event, therefore, creates an

alternative timeline or world which continues along its own pathway through time and space, completely cut off from the parallel line. Further bifurcations or forks in the road splinter into divergent pathways rather like a branching tree that continues to grow new limbs *ad infinitum* (although unlike a tree, the multiverse has no main trunk and thus no hierarchical arrangement). Schrödinger's Cat, however, does not do sufficient justice to the complexity of the quantum world, its growth spurts and perpetual reproductions. The thought experiment contains only two possible outcomes (or two "eigenvalues," in quantum language) – a cat that is alive or a cat that is dead. Chance and choice are also quantum events so that every decision we, as individuals, make also generates splinters in the space-time continuum. I might have made a different choice somewhere in the past which created an alternative pathway where I am not sitting here writing this, but relishing the comfort and ostentation of a royal palace as I wile away my days as king. In fact, quantum theory insists that my alternative life as king and defender of the faith is a reality somewhere across the multiverse although I cannot possess the necessary cosmic skills to visit for tea and scones. As science writer, John Gribbin, states,

An infinite number of worlds allows for an infinite number of variations and, indeed, an infinite number of identical copies. In that sense, in an infinite Universe, anything is possible, including an infinite number of other Earths, where there are people identical to you and me going about their lives exactly as we do; and an infinite number of other Earths where you are Prime Minister and I am King. And so on (8).

To complicate matters even further, imagine throwing a die. Rather than a bifurcation, we have multiple "eigenvalues" that splits reality into six alternative universes, some of which may continue unaffected and thus creating identical copies and others may shift in profound ways. For a lot of people, this is nothing more than an intellectual parlor-game and one fit for

Star Trek and other science fictions. In 1957, Everett's theorem, retroactively christened the "many-worlds interpretation," gained little credence, and was considered highly speculative yet these radical and contentious ideas have since become common parlance in contemporary science and culture (with the understanding that the existence of a multiverse remains a matter of intense debate with many detractors continuing to repudiate the paradigm as science fiction).

What is also confounding is that the pre-eminent scientists working within the field of quantum theory cannot adequately explain why the quantum world behaves as it does, yet, even more remarkably, quantum physics is a practicable field which is essential for "the design of computer chips, which are in everything from your mobile phone to supercomputers used in weather forecasting [and explains] how large molecules like DNA and RNA, the molecules of life, work" (14-15). The impact of quantum physics has made a substantial mark in media cultures, too, such as film, TV, literature and, of course, comic books. The concept of parallel worlds, alternate dimensions and temporal paradoxes is a well-established convention of the science fiction and fantasy genres appearing in multiple media platforms such as television (*Fringe*, *Star Trek*, *Sliders*), film (*Source Code*, *Mr. Nobody*, *Sliding Doors*) and literature (Stephen King, Michael Moorcock, Thomas Pynchon).

What we can see here is the impact of quantum physics on popular culture texts, one which implies a discursive relay between the two fields. In *Fiction in the Quantum Universe*, Susan Strehle adroitly demonstrates the influence of the "new physics" on literary composition that resulted in a new kind of literature she labels 'actualism' which expresses "a literary version of the reality constituted by fundamentally new physical theories in the first half of the twentieth century." For Strehle,

changes in physical theories inspire changes in a culture's general attitudes, and art both responds to and shapes these assumptions. Physics and fiction inhabit the same planet, however divergent their discourses about it may be...the new physics [has] exerted a profound influence on contemporary culture (8-9).

Yet it would be rather myopic to establish a historical connection between Everett's many-worlds interpretation as template for the hyperdiegetic principle at work within vast narratives, such as *Star Trek*, *Fringe*, or the novels of King and Moorcock. In "Parallel Worlds" (2013), Andrew Crumey demonstrates that the multiverse has considerable vintage that predates the quantum paradigm, "cropping up in philosophy and literature since ancient times." Over two millennia ago, Democritus (c460-370 BC) thought "the universe to be made of atoms moving in an infinite void" which would "combine and recombine in every possible way: the world we see around us is just one arrangement among many that are all certain to appear" (ibid). Likewise, the Ancient Greek philosopher, Epicurus (341-270 BC) believed the future to be a multiple series of paths rather than strictly causal and was celebrated in a passage of Cicero's *Academia*: "Would you believe their exist innumerable worlds...so there are countless persons in exactly similar spots with our names, our honours, our achievements, our minds, our shapes, our ages, discussing the very same subject?" (ibid). In an essay titled, "Of a History of Events which Have not Happened," Isaac D'Israeli, father of the future Prime Minister, wrote of a series of "what ifs" that imagined Cromwell and Spain united in alliance, or a Muslim Britain where "we should have worn turbans [and] combed our beards instead of shaving them" (ibid). "What If?" narratives feature prominently in the Marvel multiverse as counter-factual variations of canonical stories which I shall discuss further below. Readers of Phillip K. Dick, Harry Turtledove and countless others would no doubt

recognise this as “alternate history,” an established convention of contemporary science fiction.

Even the term “multiverse” has a historic lineage: in 1895, William James referred to a “multiverse of experience.” And four years later, poet Fredericke Orde Ward wrote:

“within, without,/ nowhere and everywhere;/ Now bedrock of the mighty Multiverse.” But the usage of the word as a way to describe the cosmological system of parallel worlds comes from a different source: the popular novelist Michael Moorcock (32):

I came up with the term itself in a story called *The Sundered Worlds* published in *Science Fiction Adventures* in 1962. The idea of a "quasi-infinite" series of interlocking worlds, each a fraction different from the next, where millions of versions of our realities are played out, fascinated me from the age of seventeen, when I had drafted the first version of what was to become *The Eternal Champion*. By 1965, when I was writing the Jerry Cornelius stories, I put the notion to more obvious literary and satirical uses, but for me by then the Multiverse had already assumed physical reality.

Consider, also, Jorge Luis Borges’ celebrated short story, ‘The Garden of Forking Paths,’ first published in 1941 almost two decades prior to Everett’s postulations. In the story, it is revealed that Ts’ui Pên has succeeded in constructing a vast fictional narrative that is essentially a spatiotemporal labyrinth comprised of

an infinite series of times, in a growing, dizzying network of divergent, convergent and parallel times. This network of times which approached one another, forked, broke off, or were unaware of one another for centuries, embraces all possibilities of time. We do not exist in the majority of these

times; in some you exist, and not I; in others I, and not you; in others, both of us... Time forks perpetually towards innumerable futures (Borges, 53).

It is remarkable that Borges' story predates and prophesizes the coming of Everett's many-worlds theorem and shares astounding commonalities with contemporary scientific explanations of the mechanics of multiversal design. In *Programming the Universe* (2006), physicist Seth Lloyd details a conversation he had with Borges in 1983 where he asked if he was aware of the similarities between his short story and quantum theory. Borges stated that he did not intentionally mirror Everett's work – indeed, how could he given the temporal distance between the two works: “Borges had not been influenced by work on quantum mechanics, [yet] he was not surprised that the laws of physics mirrored ideas from literature. After all, physicists were readers, too” (101). As Crumey states, “physicists are not only readers, but part of history, and the multiverse...has a history far older than that of quantum theory” (2010). From this perspective, the quantum model pre-dates Everett's theories and the quantum physicists by a significant temporal distance and illustrates cultural and scientific processes as entwined in discourse rather than a one-way linear stream between source and influence.

2. The Marvel Multiverse: Quantum Seriality

In *Film Futures*, David Bordwell argues that both Borges' forking paths and quantum theory are inadequate framing principles for the analysis of narrative systems. Bordwell deconstructs a number of films¹ that present “forking path” narratives as limited and, ultimately, linear, none of which “hints at the radical possibilities opened up by Borges or the physicists” (89). “None of these plots confronts the ultimate Borgesian demands,” continues Bordwell. Instead, “we have something far simpler, corresponding to a more cognitively

¹ In Bordwell's analysis, he focuses upon four films: Krzysztof Kieslowski's *Blind Chance* (1981), Tom Tykwer's *Run Lola Run* (1998), Peter Howitt's *Sliding Doors* (1998) and *Too Many Ways to be No. 1* (1997).

manageable conception of what forking paths would be like in our own lives” (90). By analysing a set of forking path narratives, Bordwell astutely demonstrates the limits of these narratives as linear and, essentially, contained within traditional narrative schema, certainly not emblematic of Borges’ limitless sprawl. “So instead of the infinite, radically diverse set of alternatives evoked by the parallel-universes conception, we have a set narrow both in number and in core conditions...In fiction, alternative futures seem pretty limited affairs” (90).²

It is not Bordwell’s analysis that I wish to challenge here – as usual, he performs his examinations with a verve and dexterity that shines a discerning light on the mechanics of narrative. But the limitations of this study are not one of scholarly performance, but, rather, lie with Bordwell’s choice of texts which exclude vast narrative story-systems that operate multiversally. Instead of Bordwell’s narrow set of temporal parameters and core conditions, the Marvel multiverse is a sprawling metropolis comprising alternative realities and parallel narrative systems that comingle within a transmedia nebula. As Bordwell “zooms in” to single units of film, it behooves us to “zoom out” to take in the intricate vista of the vast narrative that the house of Marvel built.

The size and scope of the Marvel story-world cannot be underestimated, so much so, that an exhaustible cataloguing would be an impossible feat, especially when one takes into account the fact that new scaffolding is regularly welded to the narrative architecture on a weekly basis. Even the latest edition of *The Marvel Encyclopaedia* is out-of-date, indeed, will always be out-of-date when newly released. Thus, Marvel is not only a vast narrative, but an “unfolding text,” which Lance Parkin describes as

² Like Crumey, Bordwell ignores comic books from his considerations which is a significant exclusion given the focus of his argument.

fiction based around a common character, a set of characters, or location that has had some form of serial publication. The works that make up an unfolding text can have a single author, particularly in their early stages, but are typically written by many. An unfolding text is often not a single series; most contain a number of distinct series, in different media, usually with different creators and even intended audiences (13).

What I would like to do here, then, is illustrate how the vast narrative network of Marvel works as an exemplar of quantum seriality rather than perform an exhaustive catalogue of its multiversal design (an impossible endeavor even for a book-length study or a PhD thesis).

For regular readers of Marvel Comics, and, by extension, other sequential story-systems, the principle of continuity is an important affective site and provides a great deal of pleasure (Duncan and Smith, 190; Reynolds, 38; Dittmer, 182; Geraghty, 16). In *Building Imaginary Worlds*, Mark J.P. Wolf drafts an architectural blueprint for world-building and highlights the necessity of an “ontological realm” –that is, causal, spatial and temporal interconnectivities -- as fundamental enhancements that allow successful world-building to take place. Consistency within the narrative fabric is an important characteristic of sequential story-telling and can be described as

the degree to which world details are plausible, feasible, and without contradiction. This requires a careful integration of details and attention to the way everything is connected together. Lacking consistency, a world may begin to appear sloppily constructed, or even random and disconnected (Wolf, 43).

As Parkin argues, “the natural instinct for the audience of any serial drama or other long-running series is to think that the fictional world is consistent” (253). One of the methods

used to render a consistent serial-system is an adherence to continuity, or the narrative history of a story-world across a multiplicity of textual locations. Individual micro-narratives should “remember” other elements in the continuity network (Harvey, 1). “Readers,” claims Umberto Eco, “are supposed to interpret [the story-world] as referring to a possible state of affairs” (64). For Eco, the story-world is a “doxastic,” or believable construct, which dovetails with Matt Hills’ concept of “hyperdiegesis” – that is, an interconnected, cohesive system that operates “according to principles of logic and extension” (137). One factor all these conceptual designations share as a common principle is cohesion and consistency: whether Wolf’s secondary world, Eco’s doxastic realm, Hills’ hyperdiegesis, or Otsaku’s “world-program”, the obedience to a cohesive diegetic history is a prevalent feature of serial world-building.

At its most basic level, continuity can be described as the linkages between episodic sequences that connect “small narratives” into a rational and coherent “grand narrative” of metatextuality (Eiji, 109). Richard Reynolds describes a serial metatext as the “summation of all existing texts” in the story-system that function according to relations of chronology and causation (43). In short, a story-world is a fictional history endowed with memory. Continuity consists of all previous stories within the narrative continuum, in some cases involving decades of material, “which the storyline must take into consideration in order to preserve coherence and consistency within the narrative” (Miettinen, 6). It is possible, therefore, for readers of the serial macro-structure to cement individual micro-narratives into a chronological sequence, which should correspond with unidirectional models of time – even if sequences are produced and presented out of linear alignment.

At the time of writing, Marvel publishes in excess of fifty monthly and bi-monthly comic book series, many of which that feature characters that have been principal players for over seventy-years, such as Captain America, Sub-Mariner and the original Human Torch,

Jim Hammond. Marvel's resurgence in the early 1960s introduced characters that have since become house-hold names, such as Spider-Man, Hulk, Thor, Iron Man, and Daredevil alongside superhero ensemble "team-ups" The Avengers and The X-Men, for instance. All of these characters feature in monthly comic book series, often in multiple titles, that have been a ubiquitous feature of the comics' landscape for over half a century. Continuity works to cohere all of these texts within a hyperdiegetic framing principle of sequentiality. Characters regularly appear in other titles and storylines often crossover into multiple books, especially in the perennial annual events that pull whole swathes of character populations into one, overarching narrative. (Recent examples of this include *Fear Itself* [2011]; *Avengers Vs X-Men* [2012]; *Infinity* [2013]; and *Secret Wars* [2015]). These crossover events are often massive constructions comprising multiple titles that possess an in-built commodity logic that invites ardent fans to purchase books that they may not usually buy (although in recent years, discerning readers have become *au fait* with this technique and sales figures indicate a growing "event-fatigue"). Storylines can begin in one book and crossover into another so that the narrative tapestry expands inexorably beyond the confines of a single title. In the *Infinity* mini-series, for instance, readers wanting to follow the entire canvas would need to purchase, or at least read, *Avengers*, *New Avengers*, *Mighty Avengers*, *Avengers Assemble*, *Guardians of the Galaxy*, *Fearless Defenders*, and an array of other tie-in episodes. Compared with other events, however, *Infinity* is a rather small-scale affair.

The Marvel multiverse is a structure that allows multiplicity to cohere within an ontological order that subsumes a pantheon of characters within a singular hyperdiegesis that represents the largest world-building exercise in any media. As Reynolds points out, even television's propensity for long-form narratives pales in comparison, even those with decades of material, such as *Star Trek* and *Doctor Who*. But what complicates matters even further, and one which dovetails with the quantum model, is the multiple worlds that co-exist within

this ambit. What I have been discussing thus far is what is known as the 616-universe – that is the main branch of the Marvel multiverse which is the central spine and point of origin for many readers, a point which I shall return to later. What follows are some examples of the Marvel multiverse in operation, but given the colossal transmedia sprawl, I shall use Spider-Man as a focal point to demonstrate quantum seriality.

In 2000, Marvel inaugurated the Ultimates Universe which operates as a parallel counterpart to the central spine of the 616 and acts as host for reversion and re-mediations of familiar faces. This strategy allowed creators to begin stories again for a generation of new readers who had not been around to witness the emergence of Spider-Man or The X-Men while at the same time inviting long-time fans to see how old materials are contemporized. The Ultimate imprint is set on Earth-1610 which sets it apart from the mainstream continuity and although it began rather modestly with a limited number of titles – *Ultimate Spider-Man*, *Ultimate X-Men* and *Ultimate Fantastic Four* – it soon sprouted multiple branches and diverted in significant ways from the events of the 616. In recent years, for example, Peter Parker has been murdered by arch-nemesis The Green Goblin and his mantle passed to a new Spider-Man, Miles Morales, who, rather coincidentally, was also bitten by a radioactive spider and endowed with preternatural abilities. Thus, the Ultimate Universe developed its own internal continuity as an appendage to the history of the 616. Yet this isolated pocket universe has since breached its own narrative borders. In *Spider-Men*, Peter Parker crosses over from the 616 and into the 1610 to come face-to-face with his alternate version, learning that his multiversal doppelganger has perished. Likewise, during the events of the mini-series, *Age of Ultron*, Wolverine “repeatedly abused the space-time continuum,” (Bendis et al, 25) which led to an ontological instability between the ostensibly disparate realities. As a result of this spatiotemporal disaster, the intergalactic leviathan Galactus breaks through time-and-space and crosses over, both literally and figuratively, from Earth-616 and into

Earth-1610, the consequences of which shift the narrative parameters of the Ultimate Universe and leads the way for a re-launch of the imprint by shifting the status quo through whole-sale destruction. The Miles Morales-Spider-Man has survived and went on to lead The Ultimates – the 1610-version of The Avengers – in a new series that began in April 2014. However, following the events of Jonathan Hickman’s Secret Wars, the Ultimate Universe has been destroyed (although Miles Morales has successfully survived the cull and migrated to the 616).



Figures 2 and 3

In place of Spider-Man, then, the Marvel multiverse is home to multiple Spider-Men co-existing in a super-position of quantum states. Alongside Parker and Morales, Miguel O’Hara becomes the Spider-Man of 2099 (Earth-928) following a catastrophic laboratory experiment and has also appeared in the 616, more recently in the pages of *Superior Spider-Man*. At the end of issue 19, Miguel O’Hara is stranded in the ‘master-narrative’ continuity

of the 616 and, like Miles Morales, has been awarded his own solo series set in that universe (*Spider-Man 2099*). In *Spider-Man 2099 Meets Spider-Man*, both Peter Parker and Miguel O'Hara team up with Max Borne, the Spider-Man of 2211 (Earth-9500) to battle the Hobgoblin of the 23rd century. On Earth-50101, Peter Parker is ethnically recast as Paviitr Prabhakar to become the Spider-Man of India alongside principal cast members including: Mary Jane (Meera Jain); Aunt May (Auntie Maya), Uncle Ben (Uncle Bhim) and Norman Osbourne (Nalin Oberoi). In an alternate past (Earth-90214), “old web-head” emerges during the Great Depression of the 1930s rather than the 1960s in *Spider-Man: Noir*. And in another alternate future, Spider-Man comes out of retirement to take up this mantle once again in the *Reign* storyline which borrows its conceit from Frank Miller’s *The Dark Knight Returns* (even going so far as calling a character Miller Janson, a portmanteau of creators Frank Miller and Klaus Janson). Moreover, the 2014 crossover series, *Spideverse*, includes every iteration of Spider-Man congregating within the same narrative space of quantum seriality.



Figure 4

Marvel’s “What If?” stories offer alternate histories of canonical characters by slightly tweaking the events that fans recognise as official continuity. By re-adjusting a single plot point, “What If?” stories introduce a quantum event which creates an alternate

reality, a Borgesian fork in the narrative road. In Spider-Man lore, the death of Peter's Uncle Ben was the catalyst that created Spider-Man's moral code – “with great power comes great responsibility” – and a burden of guilt for his inability to save his surrogate father. Each time Parker dons the Spidey suit, he is paying for the mistake that cost Uncle Ben his life by dedicating his existence to fighting evil and protecting lives.

But “What if Spider-Man's Uncle Ben had lived?” That is the question of a 1984 story which re-conceptualises Spider-Man's origin story by replacing Uncle Ben's death with that of Aunt May. Although one could consider this apocrypha rather than official, Marvel canonised the story, and many other “What Ifs,” by designating a multiverse number, Earth-TRN034, which legitimises its existence as an alternative reality birthed by a quantum event. Other “What Ifs” include: “What if Spider-Man Joined the Fantastic Four?” and “What if Someone Else Had Been Bitten by the Radioactive Spider?” These “Schrödinger's Cape” stories are akin to the cat in the box experiment which posits the existence of a super-position of states. As discussed above, Everett's thesis determines that the super-position does not collapse into one state or another, but into both states simultaneously. By creating the what-if-thought experiment is to create a bifurcation in the narrative history and introduce a quantum state into the Marvel multiverse.



Figures 5 and 6

Will the real Spider-Man please stand up?

Miles Morales, Miguel O’Hara, Max Borne, Paviitr Prabhakar, and the manifold Peter Parkers *are all* Spider-Man, or variations thereof, existing in alternate realities connected by the assemblage of the Marvel multiverse. For many readers, however, the Peter Parker-Spider-Man remains the “pure” version with the others acting as illegitimate offspring – although this depends in large on the position of the reader. After all, the multiverse is nothing if not relative and non-hierarchical. Within the *Spider-Verse* event-series, however, Peter Parker is tagged as the *central* Spider-Man of the Marvel multiverse which also positions the mainline Marvel continuity universe, Earth-616, as the central hub with alternate worlds interconnected like spokes on a wheel. From this perspective, the ‘616’ Peter Parker is the ‘real’ Spider-Man whereas his alternate counterparts are described as ‘Spider-Totems,’ multiversal replicas or analogues.

But even Peter Parker is not an immutable, stable personality, but a character in a state of perpetual flux. As we have seen, there are also multiple variations of Peter Parker co-

inhabiting the multiverse that problematizes the notion of a congruent, static entity. Even if one decides that the “first” Peter Parker as created by Stan Lee and Steve Ditko in 1964 is a fixed point in space-time, the Peter Parker that currently exists in the 616 is hardly the same character having gone through multiple ret-cons³, relaunches and character developments. *Amazing Fantasy* #15, which introduced the character to popular hemisphere, is not the first and last word on the character, especially when one takes into account the many lives of Spider-Man co-existing within the Marvel multiverse. Like Schrödinger’s Cat, Spider-Man (and countless other characters) exist in a super-position of states between different forms. Yet unlike Schrödinger’s feline duo, Spider-Man splinters into a multiplicity of alternate ‘super-positions’ rather than the binary relationship of Schrödinger’s Cat.

A recurring feature of these stories is the ability to traverse the multiverse and cross the liminal boundaries between worlds. As discussed above, quantum physics argues that contact between different temporal branches is impossible and thus a fictional motif that erects a fault-line between narrative and the quantum. However, as Michio Kaku argues in *Hyperspace*, “physicists, who once thought that this was merely an intellectual exercise, are now seriously studying multiply connected worlds as a practical model for our universe” (19). Normally, parallel universes “never interact with one another,” but “wormholes or tubes may open up between them, perhaps making communication and travel possible” between discrete dimensions (19). “As long as you avoid walking into the wormhole, our world seems perfectly normal,” continues Kaku, but “if you fall into the wormhole, you are instantly transported to a different region of space and time” (18). Perhaps the future of science will help develop quantum holidays where we, too, can visit our alternative selves and travel the glorious expanse of the multiverse.

³ ‘Ret-Con’ is an abbreviation of retroactive continuity which is ‘the process of revising a fictional serial narrative, altering details that have previously been established in the narrative so that it can be continued in a new direction or so that potential contradictions in previous versions can be reconciled’ (Booker, 2010: 510).

Of course, the concept of wormholes and inter-dimensional portals are par-for-the-course in science fiction and fantasy narratives. *Stargate*'s very existence relies on this factor for its narrative expeditions, for example. Yet for Kaku, the scientific model is analogous with Alice's looking glass: "When Lewis Carroll's White Rabbit falls down the rabbit hole to enter Wonderland, he actually falls down a wormhole" (18). Once again, the possibility of travelling between different quantum states is prefigured in fiction rather than science.

Bordwell argues that forking path narratives are limited and linear by design. For the reader, this allows a potentially complicated text to be understood at the point of reception by "corresponding to a more cognitively manageable conception" (90). How, then, does one negotiate the many forks in the Marvel multiverse which splinter into multiple pathways rather than bifurcate into easily manageable quadrants of text? I think Bordwell underestimates the abilities of ardent fans that take pleasure in navigating the many-worlds of Marvel and have no problem cognitively managing with multiple continuities, alternate variations and counter-factual narratives. (Although Bordwell is discussing cinema texts, he does explicitly state that alternative world scenarios are limited affairs "in fiction" (89), not only film.) For readers to traverse the dominion of these sprawling narrative systems requires a skill-set more akin to database or encyclopaedia than other cultural artefacts would seem to demand - even when taking into account vast narratives such as *Doctor Who*, *Star Trek* and *Star Wars*, to name a select few. For Douglas Wolk, these are the "super-readers" – that is, "readers familiar enough with enormous numbers of old comics that they'll understand what's really being discussed in the story" (105). There is a practical reason why both Marvel and DC have large coffee-table concordances that blueprint their respective universes that are reprinted regularly to take into account shifts in the hyperdiegesis.

But Bordwell's point about linearity is also important to consider, especially when one takes into account the principle of continuity which, as discussed above, is a site of

pleasure for many fans. Committed readers who follow as many adventures as they can – which largely depends upon time or the economic pitfalls that come with staying in tune with the continuum – read the non-linear sprawl in order to re-arrange the pieces into a logical order that obeys the ontological order of time and space. “Seeing how the pieces fit is fun,” writes Tyler Weaver. “You don’t have to find everything to enjoy the story in front of you, but it adds depth and fun to your story experience” (170). Continuity is a linear concept, but this does not mean that the narrative unfolds in causal precision. Rather, the Marvel multiverse is multilinear and one must read paradigmatically in order to construct a syntagmatic structure.

Additionally, some readers may only purchase one or two monthly titles which reduces the temporal spread considerably. In accordance with quantum physics, everything is relative and depends upon the position of the observer. For some, the adventures of Spider-Man or Captain America and so forth will suffice, but in order to follow only one of these superheroes monthly will invariably crossover into other books that invite readers to follow to understand the range of history that is being told which I shall discuss in the next section.

3. Marvel / DC

In 1961, four years after Everett’s many-worlds thesis⁴, DC Comics pioneered the concept of parallel worlds in the Silver Age story “The Flash of Two Worlds” wherein the second incarnation of the Flash character, Barry Allen, crossed the liminal borders between alternate dimensions to meet his Golden Age predecessor, Jay Garrick. Over the years, however, DC’s adherence to its own continuity became haphazard – indeed, was chaotic from its inception -- and multiple error messages in the story-system destabilised the ontological

⁴ Once again, it would be foolhardy to suggest that this was a response to Everett’s work as the many-worlds interpretation was largely ignored at the time and was largely popularised in the 1970s by physicist Bryce De Witt (Wolf, 95)

order that led to the entire narrative corpus being collapsed in the event series, *Crisis on Infinite Earths* and the multiverse was destroyed (DC reintroduced the multiverse in the weekly series 52 (2006) and, at the time of writing, the DC multiverse remains limited to fifty-two worlds). Put simply, five decades of narrative history were swept away in one fell swoop and the DC universe “rebooted” from year one. Since then, the DC Universe has gone through periodic cataclysms to tidy up their story-system – from *Zero Crisis* (1994), *Infinite Crisis* (2005) and, more recently, “The New 52” -- and, also, to invite new readers into the fray, readers that are often deterred from entering the narrative world due to its enormous data-banks of lore and history. Rather than “super-readers,” DC wanted to attract people who could access the material without the necessity of concordance or encyclopaedia.

Of course, Marvel needs to refresh their audience periodically, too. Yet unlike DC, Marvel has not yet resorted to dramatic tactics that have wiped whole swathes of history from their data-banks. Marvel’s present-day continuity is still the same continuity that began in 1938 under the Timely Comics banner despite the events of Jonathan Hickman’s *Secret Wars* (2015) which supposedly destroyed continuity (read: it didn’t). *Contra* DC, Marvel have never rebooted their universe but, instead, revised and regenerated the story-system in order to remain fresh, vital and contemporary through ret-cons (retroactive continuity), generic updating and ‘re-launches’ (a strategy of re-numbering titles from #1 to attract new readers while also remaining “in continuity”).

For many readers, the DC Universe has been plagued by fractures and fissures in the internal continuity which has led to multiple attempts to wipe the slate clean and begin again, invariably birthing multivalent paradoxes. Since the introduction of Superman in *Action Comics* #1 (1938) – what Michael Chabon describes as “minute zero of the superhero idea” (12) -- DC Comics did not obey the principle of continuity as the comic form was seen as ephemeral and short-lived. Comparatively, Marvel crafted a serialised and sequential system,

especially during the 1960s when DC's hegemony was challenged by Marvel's new wave of comic book heroes and the emergence of creators such as Stan Lee, Jack Kirby and Steve Ditko. During this period, DC strived to emulate the principle of continuity, but still, as Weaver claims, it was "managed by multiple editors who rarely spoke to one another" (170). Marvel, on the other hand, was stewarded by Stan Lee who

vigilantly kept a consistent continuity between all the titles, so that, for instance, when the Hulk was captured in *Tales to Astonish*, Reed Richards wondered about his whereabouts in a *Fantastic Four Annual*. If Tony Stark went missing from *Tales of Suspense*, he was also AWOL in the next issue of *The Avengers*. One issue of the World War II-set *Sgt. Fury and the Howling Commandos*, which had previously been isolated from the superhero characters, featured a crossover appearance from Captain America (Howe, 56).

Following Marvel's successful strategy of interlinking books to manifest a congruent story-system, DC set out to replicate this conceit which meant that the "series of islands that had been separated for years" began "suddenly discovering one another and setting up trade routes" (Morrison, 117). Given the years of self-contained stories and growing arbitrariness from 1938 onwards meant that editorial stewardship was non-existent and thus the continuity was not policed sufficiently or even a cause for concern, thus, leading to fractures and achronological hiccups and errors. DC's lack of editorial control, therefore, led to the tangled mess that the 1986 *Crisis* narrative set out to address (with little success).

This is not to imply that the Marvel multiverse is a utopian story-structure without contradiction or continuity fissures and fractures— in fact, Marvel introduced the concept of the "No-Prize" in the 1960s, which invited fans to spot errors in the narrative continuum and write in with thoughts on how to repair the ontological damage and justify mistakes. (The

No-Prize was literally an empty envelope which contained the following words on the front: ‘CONGRATUALTIONS: THIS ENVEOPE CONTAINS A GENUINE MARVEL NO-PRIZE WHICH YOU HAVE JUST WON!). In lieu of financial reward or bestowal of material goods, the No-Prize fostered a connection between fan and producer that allowed avid readers to display their mastery of continuity as a way to develop cultural capital. Remember, this is well in advance of internet technologies where fans can communicate at the touch of a button and Marvel, or more accurately, Stan Lee, understood that generating a two-way dialogue between producers and readers fostered a relationship that could illustrate what worked and what did not. Marvel, also, recognised the fan commitment necessary to follow vast narrative continuity and, unlike DC, recognized that creating a cataclysmic event that threw out decades of narrative history à la *Crisis on Infinite Earths*, may alienate the fan-base who had spent an inordinate amount of time and money amassing a collection of comics only to be told that those ‘did not count’ as canon any longer.



Figure 7

It is unknown how DC’s latest experiment will turn out as “The New 52” has been corrupted severely since its inception in 2011 through the decision to reboot some titles while re-launching others thereby setting in motion more fractures in its internal ontology. For example, following the events of *Flashpoint* (2011), and the launch of ‘The New 52,’ the

Superman titles were rebooted – that is, the past expunged and wiped clean so that a ‘beginning again’ could take place (Proctor, 2016) -- whereas Batman’s continuity remained intrinsically connected to the pre-New 52 universe, an action which readers criticised (for example, see Greer). The state of continuity in the DC universe remains tendentious and it is arguably only a matter of time before they decide to reboot their universe once more.

Marvel, on the other hand, have created a multiverse that contains within its ambit the entire contents of its various transmedia adventures whereas DC have repeatedly stressed that its comic book universe and media extensions, such as film and animation series, are separate entities. Likewise, DC’s burgeoning TV universe which hitherto consists of *Arrow* (2012 -), *Gotham* (2014 -), *The Flash* (2014 -), *Supergirl* (2015 -) and *Legends of Tomorrow* (2016 -) does not exist within the same continuity as their cinematic counter . As DC Comics Creative Officer and writer, Geoff Johns, commented, the TV universe is ‘a separate universe than film... We will not be integrating the film and television universes’ (Einsenberg, 2015). So, characters, The Flash and Arrow in the DC TV continuity are not the same characters set to appear in the DC Film Universe. They are *separate universes* despite Barry Allen discovering the multiverse in the season one finale of *The Flash* (a concept adapted from 1961’s ‘The Flash of Two Worlds’ mentioned above). Moreover, DC have hired actor, Ezra Miller, to play the Scarlet Speedster in the forthcoming *The Flash* film (2018) which means that there’ll be two live-action versions operating in parallel).

Obviously this is one of corporate design and quantum theory would no doubt state that the story-worlds are hyperlinked intertextually despite executive decisions (which would also dovetail with the school of poststructuralism and its dissolution of boundaries as permeable and unstable). But Marvel’s stratagem works to canonise its diverse catalogue to create a structure that legitimises disparate and alternative narrative texts as an exemplar of quantum seriality. Privileging the principle of continuity is a case of ‘quantum entanglement’

a multiverse by design. Given that continuity is often a source of pleasure for ‘super-readers,’ such a strategy operates dialogically between the fannish demand for story-world cohesion and towards a market-oriented transmedia tactic. The ideal consumer is one who will follow individual episodic threads from, say, a single comic book issue, and across other titles that may or may not be a part of a reader’s ‘pull list’ (fan vernacular for personal orders). The aforementioned *Spider-Verse* was spread across multiple ‘Spider-Family’ titles, such as *Edge of Spider-Verse* mini-series leading into *The Amazing Spider-Man*, *Spider-Woman*, *Spider-Man 2099*, and parallel mini-series, *Spider-Verse*. On the one hand, each issue stands as a micro-narrative episode as a principle of serial continuity and one bound to a schema of what Wolf describes as ‘narrative braiding,’ a process whereby ‘[n]arrative threads taking place within the same world which become grouped together due to the fact that they share the same themes, characters, objects, locations, events, or *chains of cause-and-effect*’ (Wolf, 378).

One the other hand, and simultaneously, narrative braiding is always also ‘commodity braiding,’ as theorised by Matthew Freeman who writes that ‘the interlocking of its media texts, with the production of fictional stories operat[e]...like entertainment stepping stones’ (46). Freeman’s main focus is to historicise the concept of transmedia storytelling as one which emerges, not in the contemporary era of digitization and convergence, but at the turn of the twentieth century in the works of Frank L. Baum and Edgar Rice Burroughs, for instance. Such transmedia ‘bridging’ between media texts – those ‘entertainment stepping stones’ – exploited ‘the popularity of one creation to the boost the readership of its others’ (47). So, then, for Freeman, narrative braiding is also commodity braiding which he defines as ‘the commercially designed interlocking of a range of commodities, be it media texts and/or consumer products, through strategies of narrative and authorship as exemplified by the interlocking of...storyworlds’ (ibid). From this perspective, then, continuity principles are

bound to market-based commodity logics, an elemental factor which has arguably reached an apotheosis in the twenty-first century market.

Exploiting the relationship between fans and continuity works to encourage and invite readers to follow comic titles that they may not regularly purchase. In so doing, multiversal continuity – whether transmedia or intramedial – is both a narrative and commercial design; that is, a dialectical tug-of-war between content and economics. For Marvel, the promotion of continuity between disparate media – even when continuity principles are hardly evident, as in the relationship between Marvel Comics and the Marvel Cinematic Universe – obeys the logics of capitalism and the commodification of narrative forms.

Consider also the so-called Marvel Cinematic Universe (MCU) which, in actuality, is a transmedia universe rather than intramedial (Proctor, 2014) The first wave of Marvel films contains a hexagoly of films: *The Incredible Hulk* (2008), *Iron Man* (2008) and *Iron Man II* (2010); *Captain America: The First Avenger* (2011); and *Thor* (2011) culminating with ensemble film, *The Avengers* (2012). The second wave includes *Iron Man 3* (2013); *Thor: the Dark World* (2013); *Captain America: The Winter Soldier* (2014); *Guardians of the Galaxy* (2014); *Ant-Man* (2015); the TV series, *Agents of S.H.I.E.L.D* (2013-), *Agent Carter* (2014-), and a second *Avengers* film, *Age of Ultron* (2015). Marvel's plans also include a Netflix deal which will produce four TV series, including *Daredevil*, *Luke Cage* and *Jessica Jones*, with *The Defenders* operating as an ensemble piece, the televisual equivalent of *The Avengers*; and other films in the writing or pre-production stages such as *Dr. Strange* and *Captain America: Civil War* (2016). Moreover, Marvel have published several comic book series that operate outside the 'master-continuity' of the mainline Marvel Universe – the 616 – and are welded onto the narrative architecture of the film and TV series as world-building expansions and 'mutually locking commercial ventures' (McMahan, 2005: 145). Titles such

as *Black Widow Strikes*, *Avengers Prelude*, and a range of other titles, exploit gaps in the overarching macro-structure and flesh out narrative events more fully. In 2011, Marvel began to introduce short films into the cinematic continuity with a series of ‘one-shots’ featured as extras on Blu-ray releases of *Thor*, *Captain America* and *The Avengers* (and also available on YouTube). The first two shorts feature Phil Coulson, Agent of S.H.I.E.L.D., in ‘The Consultant’ and ‘Something Funny Happened on the Way to Thor’s Hammer,’ the latter focusing on the character following his departure from *Iron Man 2* and as a prelude to the first *Thor* film.

In many ways, Marvel have adapted the comic book model of continuity a model for the live-action universe which is the largest example of world-building and sequentiality in film history.⁵ Each film or TV series can be seen as chapters, or ‘micro-narratives,’ in an ongoing saga or ‘macrostructure,’ that adheres to principles of continuity and sequentiality: characters repeatedly crossover into each other’s diegetic realms, thus crafting a hyperdiegesis that continues to grow exponentially into a vast narrative body. More than this, however, rather than the live-action material functioning as apocrypha or appendage to the comic book universe, Marvel emphatically state that these events take place on Earth-199999, thereby legitimising the various texts as a fully-functioning component of the multiverse. Thus, comic book “super-readers” can rationalize film continuity as a part of the Marvel multiverse whereas non-fans, or casual viewers, do not require a large body of knowledge to visit the cinema and enjoy the latest *Iron Man* film. Marvel’s strategy works to appease comic book fans, film fans, and casual observers.

⁵ Since Disney purchased Lucasfilm in 2012, the *Star Wars* universe has undergone a series of shifts which has revised the old continuity by casting aside the Expanded Universe (EU) of novels, comics and so forth; and reconceptualised the hyperdiegesis as Star Wars ‘fact,’ and canonical. Since 2014, all Star Wars comics, novels, videogames and other media are declared to be canonical (the old system operated as a tiered continuity with multiple levels of canonicity). In so doing, Disney seems to be following the MCU framework and, by extension, the comic book model of continuity.

Conversely, DC's exploits in the live-action marketplace have paled in comparison in terms of quantity of output and economic dividends. Following Christopher Nolan's successful Batman films, *Green Lantern* was a critical and commercial disaster; and *Man of Steel* radically split the fan-base despite its economic dividends. The news that the sequel, *Batman v Superman: Dawn of Justice* (2016), will feature Superman, Batman, Wonder Woman, Nightwing, and Lex Luthor, among others, may be a rushed attempt to catch-up with the Marvel juggernaut (the ensemble film, *Justice League*, which is to be split into two-parts (2017/ 2019), is reportedly being shot back-to-back with *Batman Vs Superman: Dawn of Justice*). In October 2014, DC announced a forecast for a roster of films based upon superhero properties including: *Suicide Squad* (2016); *Wonder Woman* (2017); *The Flash* (2018); *Aquaman* (2018); *Shazam* (2019); *Cyborg* (2020); and another attempt at adapting *Green Lantern* (2020). Comparatively, Marvel's success is borne out of a patiently-constructed story-world rather than one created in a flash of anxiety. Furthermore, *Batman Begins* is not a part of DC's multiverse; neither is *Man of Steel*, *Green Lantern*, or the TV series *Arrow* and spin-off *Flash* (although *Arrow* and *The Flash* occasionally 'crossover' with one another). Unlike Marvel's shared story-system, *Arrow* does not exist in the same universe as Henry Cavill's Superman; and Christopher Nolan has stated that his Batman films do not exist in the same diegesis as *The Man of Steel*. Even the Marvel films that are produced by Fox and Sony are given a multiversal designation, such as the *X-Men* series (Earth-10005) or Spider-Man films (with Raimi's existing in Earth-96283 and the Marc Webb rebooted timeline in Earth-120703).

Conclusion: The Panotichron

In the Marvel Multiverse, travel between quantum regions is usually rationalised by way of cosmological accident or special abilities rather than a simplistic pathway that can be travelled by all. In *The Exiles*, we have the Panoptichron, a crystalline structure that exists outside time-and-space where the vistas of the multiverse can be viewed and visited. We, as readers, exist in the Panoptichron, where we can survey the Marvel multiverse as a vast narrative network of complex design. Hypothetically, that is. For Reynolds, there is no single person -- on this plain of existence at least -- that has digested the entire contents of Marvel's many-worlds. However, in cyberspace, individual fans pool their vast encyclopaedic knowledge centres and collaborate to construct enormous databases of arcana. Websites, such as the Marvel/ Wikipedia database, operate as online reference manuals that are vast knowledge pools of collective intelligence, painstakingly constructed by fans and "super-readers." Cyberspace is an intricate branch of the Panoptichron whereby the multiverse and its rich expanse of narrative becomes accessible to all.



Figure 8: The Panoptichron

As per quantum theory, the multiverse only becomes real once observed. For many fans, the regular continuity of Earth-616 is the “real” narrative history; but, equally, Tobey Maguire’s performance in Sam Raimi’s *Spider-Man* trilogy may be the quintessential version for certain people. As quantum theory would have it, the multiverse is not hierarchical but a relative construct which depends upon the position of the observer. In the multiverse, “all quantum states are equally real” (Gribbin, 27).

Despite DC’s strategy of containment and separation, all texts exist in what Jim Collins astutely terms “the intertextual array” (1992) which means that the entire contents of culture exist in a multiverse of multiple continuities, alternate narrative realities and quantum locations. This non-hierarchy is, of course, a key feature of poststructuralist discourse. Consider Deleuze’s notion of the rhizome as “a network that spreads and sprawls, has no origin, no end, no hierarchical organization” (Haberer, 57).

The dovetailing of fiction, literature, philosophy, quantum and academic paradigms allows us to view cultural systems from a cosmological position where everything is intrinsically connected and intertwined within a cacophony of text and intertext regardless of discipline. From this perspective, all fiction is equally real and exists somewhere across the multiverse. As Scarlett Johnson observes: “if you go along with the Many Worlds interpretation, then every novel we write actually describes some reality out there in the multiverse. Nothing is fiction” (2014). In other words, all culture is quantum.

But Marvel’s commitment to continuity and ontological order cannot be ignored. For fans, canon is important - that which is official and legitimate. For others, this may not be -- DC only need devise a scheme that canonises alternate properties through multiversal designation. Yet this is what separates DC from Marvel in significant ways and remains a

vital component for many readers who enter the multiverse and demand rationality, cohesion and consistency. Marvel's transmedia firmament is the apotheosis of quantum seriality.

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