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But as science commentator Margaret Wertheim argues in this "marvelously provocative" (*Kirkus Reviews*) book, cyberspace has in recent years become a repository for immense spiritual yearning. Wertheim explores the mapping of spiritual desire onto digitized space and suggests that the modem today has become a metaphysical escape-hatch from a materialism that many people find increasingly dissatisfying. Cyberspace opens up a collective space beyond the laws of physics–a space where mind rather than matter reigns. This strange refuge returns us to an almost medieval dualism between a physical space of body and an immaterial space of mind and psyche.

The Pearly Gates of Cyberspace: A History of Space from Dante to the Internet Details

Date	:	Published May 17th 2000 by W. W. Norton Company (first published February 15th 1999)
ISBN	:	9780393320534
Author	:	Margaret Wertheim
Format	:	Paperback 336 pages
Genre	:	History, Science, Philosophy, Nonfiction, Technology, Space, Computer Science, Computers

From Reader Review The Pearly Gates of Cyberspace: A History of Space from Dante to the Internet for online ebook

Mark Harris says

This book tracks historical conceptions of space from the medieval times to what--when the book was written--was the present (1999). I found the history traced from Dante through Stephen Hawking to be fascinating and full of insights. I found the rumination on cyberspace to be quaint, since the Internet was at such a nascent stage at that time and today we think about it quite differently. Cool insights: Renaissance painting was the first virtual reality; the discovery of physical laws operating in space evicted God, giving him no replacement locus and therefore creating a new hurdle for belief.

Leah says

often factually incorrect.

Craig Jaquish says

Space, as outlined in *The Pearly Gates of Cyberspace*, has never been objectively encountered. Instead, it's our conceptual understanding of space that configures our experience and acknowledgement of it. Space's conceptual framework, Wertheim shows, is shaped by ideas artistic, philosophical, religious, and scientific, charting a historical path from the early days before these motivators were fully separable. The account progresses to the 1999-present of the book's publication, culminating with the chronicling of a new type of space: If space has always been heavily conceptual, then the hunt begins for the *reality* of the overtly conceptual cyberspace.

Wertheim's ambitious arc to this finale is extremely fascinating, relating numerous historical birthings of new conceptions of space reaching back to Dante with the birth of Purgatory in his *The Divine Comedy*. (Actually she goes back as early as the ancient Greeks, touching on how little a conception Aristotle had of space.) "The coming into being of Purgatory is a rare instance in which we can see clearly the emergence of *a new space of being*."

In Dante's time it was conceived that the heavier the burden of sin the lower one sank into the increasingly vile depths of Hell. One ascended into Heaven by lightening oneself, by purging oneself of sin—of those sins that were deemed purgable, at least. "With Purgatory, body-space and soul-space become, in effect, contiguous countries." Mount Purgatory was the bridge between the physical and mortal realm of Earth up or down into the eternal, timeless Heaven and Hell. As such, Purgatory was supposed to exist physically on our globe as an island at the polar opposite of Jerusalem. In Dante's world space was finite, allowing *room* for a Heaven and a Hell.

> Theologians of the twelfth and thirteenth centuries devoted considerable energy to discussions of just how the process of bodily resurrection would work. How would matter be reconstituted? How would separated parts, such as amputated limbs, be reconnected? Would fingernail parings be resurrected? Would hair clippings? Would circumcised foreskins? Would umbilical cords? But behind these questions lay a much greater dilemma: How can you have a body at all

> in a “place” that is, technically speaking, *beyond* space and time? Heaven—the true Heaven of the Empyrean—is only attained at the end of time, literally when the universe ends. When the blessed finally go to Heaven to sit in the light of the Lord, like God they too will be in “eternity.” Time and space will have ceased to be. The promise of “eternal salvation” does not mean salvation *for* all time, but rather salvation transcending time. Heaven is not *in* time; along with God it is *beyond* time. And also beyond space, for time implies motion and motion implies space. You cannot have one without the other. But if Heaven is beyond space, because space has ceased to be, then how can you have a body there?

Through this Medieval-Renaissance interchange, painters were also undertaking a transition in how they represented (interpreted?) space. Medieval painting’s proportions were more metaphorical than perspectivally realistic. Figures where somewhat generic rather than clearly identifiable individuals. You identified subjects by their relative size within the painting and by their placing in proximity to the center, foreground, or forefront and to other characters of greater or lesser importance.

Wertheim highlights a great transitional breakthrough in the painter Giotto di Bondone. But while Giotto’s identifiable and lifelike figures were kept in proportion to one another and his buildings (for the most part) achieved a three dimensional jut, the jumbled way that these various components of a given scene where positioned relative to one another revealed that Giotto still lacked the understanding of empty space and of coordinate space that Renaissance painters would soon (implicitly) gain with their linear perspective.

Of course science is playing its role in our understanding of space all the while. While in the early stages of the chronicle it’s mostly on a par with other modes of spatial understanding, by the 20th century it’s the clear leader. Wertheim paints the early path from the geocentric to the heliocentric worldview through Newtonian and Einsteinian physics where ultimately we arrive at Edwin Hubble’s infinite, expanding universe. This endpoint poses a problem for Christianity. If space is infinite, where’s there room for my soul?

While Christianity has been a key player in the narrative to this point, Wertheim’s sympathies aren’t with Christians here specifically but with the loss she senses for dualists more generally who’re grappling with similar conclusions.

> After tracing the history of pre-digital space, we turn, in the final portion of this book, to cyberspace. What sort of space is this new domain? How does *it* fit into the history of physical space and spiritual space that we have been considering? In fact, as we have seen, cyberspace itself is being presented as a new kind of spiritual space. If at first that may seem an odd move, I suggest that in the light of history, religious dreaming about cyberspace begins to make sense. Given the long history of Western dualism, a purely physical world picture was perhaps doomed to failure. As is now evident by the tremendous spiritual yearnings we see around us today, many people in the modern West—especially in America—are *not* content with a strictly materialist view. In this climate I suggest that the emergence of a new kind of *nonphysical space* was almost guaranteed to attract “spiritual” and even “heavenly” dreams.
>
> No matter how often materialists insist that we humans are nothing but atoms and genes, there is clearly more to us than this. “I think, therefore I am,” Descartes declared; and whether we modify “think” to “feel,” or “suffer,” or “love,” what remains is the indissoluble “I,” and deal with it we must. The failure of modern science to incorporate this immaterial “I”—this “self,” this “mind,” this “spirit,” this “soul”—into its world picture is one of the premier pathologies of modern Western culture, and sadly, one reason why many people are now turning away from science. Sensing that something of fundamental importance has been occluded form the purely

> physicalist picture, they are looking elsewhere in hope of locating this vital missing ingredient.

While she's probably on target in diagnosing a popular nostalgia for dualism, this sense of loss will at best sustain a dualist paradigm in a virtual state of suspended animation; Descartes's mistake was precisely in assuming the I indissoluble. Cyberspace for Wertheim is the new emerging space (a "soul-space") for the displaced non-physical halves of our dual-natured selves (these incorporeal refugees displaced by the expansion of quantification) to find a home once again. From that vantage the possibilities do seem endless, and in the abstract make for an impressive finish to the progression to this point.

Unfortunately the abstraction gets fleshed out with the everyday net and web of 1999, and of the book's nine chapters this earlier era's cyberspace accounts for a full three. And due to the unexpectedly mundane turn at this juncture of the book, most of the more interesting speculative investigations about what kind of *space* cyberspace might be are left unexplored. And so the grand historical and analytical sweep of the book's first six chapters are squandered as backdrop for voicing a few fairly modest hopes and aspirations for the shaping of the early web. And with the cleavability of body and cyber-soul oversold, this final analysis makes few inroads beyond the on-the-internet-no-on-knows-you're-a-dog stage. Disappointingly these final chapters aren't even that interesting as a time capsule.

More maddeningly, Wertheim pinpoints the pitfalls facing meaning within an infinite physical space yet overlooks the idea that these are problems that translate equally well to cyberspace:

> In a homogeneous space, the traveler has infinite freedom of choice: He can go in any direction he chooses and change his mind whenever he likes. This sense of freedom is a huge part of the fantasy of outer space. It is the same freedom the modern driver feels when cruising the endless highways of America—only in outer space you have three dimensions of movement, four if you also count time. This is apparently limitless freedom of movement is a prime fantasy of late twentieth-century cosmology. Yet while we in the West have been developing an ever more detailed and adventure-filled vision of our *physical* cosmos, we have negated the very idea of *other* "spaces" of being. By homogenizing space and reducing "place" to a strict mathematical formalism, we have robbed our universe of *meaning* and taken away any sense of intrinsic directionality. The flip side of our cosmological democracy is thus an existential anarchy: With no place more special than any other, there is no place ultimately to aim for—no goal, no destination, no end. The cosmological principle that once rescued us form the gutter of the universe has left us, in the final analysis, with *no place to go*

Where is goal, destination, end when traveling through cyberspace? How is cyberspace exempted from these issues?

It's not clear at all how an expanding cyberspace overcomes any of these problems of directionality that apply to infinite physical space. As for the idea that cyberspace offers a fertile new arena for freedom and exploration, there's been some truth to that. But to a great degree the dualist nostalgia Wertheim senses has only intensified in these past two decades of cyberspace expansion. Cyberspace also entails a counterintuitive tightening cordon on freedom. It's emerged as a space of simulation, an incubation lab for what's simulable, exporting virtuality from the cyber into our physical habitats as these capabilities develop, increasing commensurately the degree to which we must exercise skepticism. As the components of reality become increasingly simulable how does one differentiate the real from the virtual? Certainly Wertheim didn't envision cyberspace's exponential expansion. The book presents cyberspace as some *separate* space,

distinct from the physical arena. After all, these were the days when you still *logged on* to the internet—and logged *off* when you finished. This image of cyberspace is clearly antiquated, and hence the book offered no vision of a ubiquitous cyberspace which is increasingly *indistinct* from physical space, another dualism being erased. Descartes's skepticism met the need of his era, and was maybe even adequate to the world of 1999, but there'll soon be for skepticism even for the I. When the erasure of the physical-cyber distinction is complete, negotiating daily life could amount to one continuously administered Turing test. Assuming you can still pass when you administer the test on yourself.

Wertheim aptly equates outer space (as experienced through a telescope) and cyberspace (on the far side of a computer interface) as mediated spaces. But by making this comparison the foundations for cyberspace as a distinct space with room in it for our "selves" collapse. Space isn't unique with respect to the idea that we experience it conceptually or metaphorically rather than objectively. All experience—not only spatial—is metaphorically grounded. The grounding for metaphor itself is our physical embodiment—which is itself rooted in the physical properties of the universe. (And so we may approach some objectivity over time whether or not that's something we experience.) The problem that Wertheim hits on in the *The Pearly Gates of Cyberspace* is that our uncertainty regarding physical space is now localized to scales far too miniscule (or conversely, too grand) for bodily engagement. Space becomes mediated. But she makes this point without realizing that if it's this mediation which squeezes the I out of a now default mediated physical space, then there's little hope in finding refuge in a mediated cyberspace.

> Ever since Galileo first pointed one at the moon, the telescope has become humanity's pipeline to the stars, the instrument through which we have been able to send our "eyes" roving out into celestial space far beyond what we can naturally see. If, as we saw in the previous chapter, perspectival imagery trained Western minds to see with a "virtual eye," the telescope extended our virtual gaze beyond the wildest imaginings of the Renaissance painters. Precisely because celestial space is not a place we can physically go (even the few elite astronauts have never been further than the moon), it is a space that in general we know only through "virtual eyes." In this respect, our experience of "outer space" parallels our experience of cyberspace, for *it* too is a space we do not experience physically. Both outer space and cyberspace are *mediated* spaces that we see through a technological filter. And just as today we are beginning to get a sense of the potential vastness of cyberspace, so also Europeans of the seventeenth century were just beginning to get a sense of the potential vastness of the new space they were discovering at the other end of their optick tubes.

A mediated space is a foreign space. They can only be interfaced by repurposing our standard corpus of embodied conceptual metaphor. At base even cyberspace is rooted in physical embodiment just like our experience of anything else. And so it's not science that's killed our "selves"; science is just a particular classification of mediation. Cyberspace is another. These mediated spaces, rather than being habitable to our bodies, are habitable to recapitulations of (remediated) embodied metaphor. Thus cyberspace may perpetuate the "I", but it'll do so without liberating it. The only remaining question is what is the cyber-heavenly status of our virtual fingernail parings?

Nick Mather says

This is an awesome book that details how humans project their religious ideals onto changing notions of space. It takes an historical approach and Wertheim concludes that people are now speculating about a

religious dimension to cyber space, which is happening. Great read.

Ben Babcock says

Space is a difficult word to pin down. Colloquially, it probably conjures images of stars and supernovae, Jupiter and Saturn and Mars, and the shuttle hanging against the backdrop of clouds and the horn of Africa. It is—or was—the Space Age, when we were supposed to go forth and colonize the stars. It didn't work out that way, but our association of the word with "not of Earth" continues. *Space* can also refer to a place in which certain interactions happen—or to the places *between* objects. *Space* is both physical and psychological, and as Margaret Wertheim demonstrates, conceptions of space play and interesting role in our history.

Last year I took a course called Philosophy & the Internet, and we discussed the idea of the Internet as a *space*. We drew on the work of Manuel Castells and Michel Foucault, who respectively talked about *spaces of flows* and *heterotopias*, and we discussed how these terms could apply to the Internet. Although many of us are comfortable using *cyberspace* as a synonym, I'm not sure how many of us naturally perceive the Internet in a spatial sense. I tend not to (I'm not a very "spatially-adept" person in general). I suspect that will change now that our interfaces are becoming more natural. We haven't quite reached the submerged, virtual reality level portrayed in *Neuromancer* or *The Matrix*, but in many ways the online world has become more inextricably linked to our offline world than most people would imagine. There is a tension between the urge to combine these spaces and the urge to keep them separate.

For Wertheim, cyberspace represents the latest in a long progression of the conception of space throughout the Western world. She sees it as a recapitulation of the fundamental Christian concepts of heaven, or "soul-space". Cyberspace, like soul-space, is a disembodied world *outside* our own universe, and thus independent of anything like those pesky laws of physics. The development of those laws is itself linked to our changing ideas of space, and Wertheim traces how the transition from a metaphorical consideration of space to a geometrical one resulted in the increasing secularization of science and spaces. Hence, cyberspace represents both an opportunity for and a response to what Wertheim claims is a growing need for some kind of spiritual space.

The Pearly Gates of Cyberspace was written in 1998, and it shows. Whether this has bearing on the soundness of Wertheim's arguments is debatable—but it certainly means that I am tempted not to take it as seriously as I should. On one hand, though the Web has exploded in the past thirteen years, the Internet itself has remained largely the same. Most of Wertheim's points are still valid, if not exactly in the way she intended. On the other hand, seeing references to CompuServe and AOL where I would expect to see discussions of MySpace and Facebook and Twitter is a surreal experience. I think *cyberspace* has changed enough that some of Wertheim's predictions have been revealed to be too conservative or slightly off the mark. And many philosophers have since integrated the rise of Facebook and social networking into theories of cyberspace.

This book is both philosophy and history—the best kind! Wertheim makes a lot of good points that individually have merit. For example, she points to the popularity of the Internet as a sign that it fills a need:

> People will only adopt a technology if it resonates with perceived [*sic*] a need. For a technology to be successful, a latent desire must be there to be satisfied. The sheer scale of interest in cyberspace suggests there is not only an intense desire at work here, but also a profound psychosocial vacuum that many people are hoping the Internet might fill. The essence of this desire and the nature of this vacuum needs to be explained; we need to understand the

> factors that give rise to such intense interest in this particular technology. Specifically we might ask: What are the psychosocial conditions enabling cyberspace to become the focus of essentially religious dreams? What is it about our lives, and about cyberspace itself, that encourages such an outpouring of techno-religious dreaming.

This "techno-religious dreaming" at the crudest level would be the cult of the Singularity, the Nerd Rapture, which believes that we are rapidly approaching a posthuman future where we will be in communion with an Internet-enabled AI. Beyond that, however, Wertheim is speaking more broadly of the optimistic dreams that the Internet inspires. I'm sure I don't have to expound much further here: just stop and consider, as I do at least once a day, that if I want to know something, **I can look it up instantaneously**—and thanks to my smartphone, I can do it practically anywhere. This was not possible twenty, even ten years ago, and it is a major paradigm shift that blows my mind. What *isn't* possible now? (Of course, the flip side to this optimism is the accurate critique that points out the Internet is still a phenomenon largely embraced by Western, wealthy nations. Wertheim recognizes this caveat, citing scholars who have opined that the Internet isn't so much a vehicle for freedom and equality so much as the latest front for Western imperialism. And they have a point!)

Wertheim also analyzes the Internet's potential for fracturing our identities. At its most basic we can say that the Internet allows us to be two people: one person in our offline, "real" life and one person online. We could even be multiple people, one for each online group we frequent. This is that tension I mentioned earlier in the review. We see it when services like Facebook and Google+ pressure us not only to use "real names" but to connect our profiles across various services—they do this, of course, because they want to mine our data and sell advertising. Anonymity is a useful and often desirable aspect of cyberspace, but there is also a great deal to be said for keeping one's online and offline personae in sync. I started using the Web in a very public way when I was only 14, so a certain level of anonymity was only appropriate. Gradually I decided to peel back that cloak until now I operate very publicly online—and that works for me. But the malleability of identity (if not, as Wertheim says, of self) is one of cyberspace's most attractive features, and it is intensely spiritual.

For most of the book, however, Wertheim doesn't talk about cyberspace itself. Instead, she provides a history of *space*. She begins with the way Dante catalogues Hell, Purgatory, and Heaven in his *Divine Comedy*. She discusses the transition from medieval imagery to the perspective, realistic style of Renaissance artwork. And as our ideas of how to represent space change, so too did the ways in which we thought of the universe as a whole and the Earth's place in it. Ptolemy's epicycles and Kepler's spheres gave way to heliocentric, Hubble-esque ideas of circles and ellipses and inflation and the Big Bang. Absolute space and time proved too inflexible and became relative, even as we realized that the universe is expanding, and that time and space might indeed be one.

Parts of this survey are interesting, but the majority of it is hard to swallow. Wertheim writes with an authority backed up by research, made obvious by the number of sources she quotes directly in each chapter. But this makes for a dry, academic style that works well in journal articles and not so well in hundred-page histories that span six centuries. I suppose this is the common complaint about the survey-style work: so much here could be its own book; alternatively, so much here *has* been its own book. I waded through my *n*th telling of Einstein's development of the theories of relativity. Wertheim talks about *so much* here, but at times it feels very disparate and disjointed. While there is a clear theme running through the chapters, it is hard at times to step back and see that big picture.

I don't necessarily agree with everything (or even most) of Wertheim's theses here. She advances an interesting relationship between various conceptions of space and spirituality, and she might be on to something—but she might not. In particular, her point that cyberspace is *beyond* the universe, that like our ideas of a spiritual soul-space it has escaped the relentless physicalism that accompanied the secularization of

science, is seductive. Yet—and maybe this is just the reductionist in me—it also seems false on some level. Cyberspace, those bits and bytes travelling through fibre optics and silicon, is ultimately the product of atoms and electrons and solid-state physics. It is enabled by the laws of physics and limited by those laws (though what those limitations might be we don't necessarily know); the independence of such space is thus a convenient illusion.

I can't recommend this book so much as say that there's probably *something* valuable here, if you can devote the time and effort. It's a little dated and a little long, and I suspect that most of what it says has since been said more succinctly. Still, *The Pearly Gates of Cyberspace* is a well-written, well-researched book, and so it deserves three stars. I cannot deny that it is a seriously thought-provoking and insightful tract.

Pedro Pascoe says

Stripped of its (redundantly stated deeply into the book) heavy Christian bias, the first five chapters of this book are a decent study of the evolution of the idea and concept of 'space'. Starting from Dante's cosmology as outlined in 'The Divine Comedy', with the emphasis on the Medieval concept of artistic and religiously-inspired symbolic representation of space, with our world placed in between Heaven and Hell, and the newly-invented Purgatory for those who 'still need to work through things in the afterlife', to the revolutionary shift in Renaissance-era artistic perspective and its (reported) influence on our current scientific view of space, to Relativistic space and all its weirdness, to a jumbled-together chapter on the fascination of the so-called 'Fourth Dimension', leading to a discussion of rolled-up dimensions currently theorised by and familiar to anyone with any kind of understanding of modern string theory.

The book, for the remaining three chapters, then launches into a more or less optimistic (and rather dated) view on 'Cyber-space' (read - The Internet), as a new concept of space following on from the largely artistic-driven concepts elaborated upon in the previous chapters (even going so far as to suggest that Science owes Art a huge debt in its formulation of perception, upon which Science built its conceptions, a hugely debatable topic which this book touched on without elaborating upon, being perhaps outside of the tighter focus of the book itself).

It all sounds rather engaging, right? The Evolution of Ideas as fundamental as the space we live in/move in/warp by our presence/think in/believe in, etc etc.

However.

As stated, the book has a heavy, unashamed Christian bias that detracts from an otherwise engaging premise. The general gist of the first five chapters is that we, as spiritual beings, with a belief system that gave our spiritual selves 'space' to nourish ourselves were much better off in the Middle Ages, and as our Western (read Christian, here, let's completely ignore Pagan and non-Christian religious ideas of space here temporarily for the sake of this narrative) ideas of 'space' evolved to a more mechanistic, less sacrelized, less symbolic view, with no 'space' left for 'heaven' and 'the soul', and generally bemoans this 'loss', even going so far as to state that 'they (physisists of today) want to insist on the all-embracing power of their vision alone' (because that never happened under Christianity *cough* witchhunts *cough* burnt at the stake for suggesting a heliocentic universe *cough* The Inquisition *cough* The Crusades* *cough* heretical persecution *cough* gay conversion *cough* #icouldgoonallday).

And so, according to this book, along comes Cyber-Space, which gives us once again, a space, beyond the

physical understanding of the universe, for the soul to play in, and for 'The heavenly city of Jerusalem' aka Christian Heaven, to manifest in, Halleluyah!

Now, once again, stripped of its Christian bias, the concept of Cyber-space presenting itself as a 'space' in which we can project ourselves into is worth considering at least (and, yes, the irony of typing out this review in 'cyber-space' is not lost on me in the slightest). With heavy references to William Gibson's visionary view of Cyber-space as outined in 'Neuromancer (points for cool sci-fi referencing), Wertheim outlines the gulf between 1999-era cyber-space and Gibson's vision in a largely positive and anticipatory manner. Nearly 20 years later, we have moved closer to that vision, particularly with console gaming and VR technology, pleasingly enough. Wertheim's critique of the sci-fi trope of 'uploading' ourselves digitally and the inherent difficulty in doing so, even assuming we have the technology, is spot on.

However, assuming, or fervently wishing Cyber-space to be the promised 'New Jerusalem' here to give back our sacred space, is eye-rolling at best, and deeply disturbing at worst. Anyone who has read Iain M Banks' 'Surface Detail' will probably recoil in horror at the idea of any dogmatic or fundamentalist religion getting their hands on 'Cyber-Space' and 'uploading' (assuming that ever becomes a thing), because while there may well be a 'Heaven' in cyber-space, there will also likely be a 'Hell', and one that goes beyond the cyber-bullying and trolling and flame wars that Wertheim points out as 'Hell' in cyber-space already.

Quick re-cap of a pertinent section of 'Surface Detail, talken from the Wikipedia entry:

"As the book begins, a war game—the "War in Heaven"—has been running for several decades. The outcome of the simulated war will determine whether societies are allowed to run artificial Hells, virtual afterlives in which the mind-states of the dead are tortured. The Culture, fiercely anti-Hell, has opted to stay out of the war while accepting the outcome as binding."

The book, along with many religious and New-Age aligned critics, cite a so-called 'Spiritual Crisis' of our current time, citing times in the past where spiritual attitudes were allowed to flourish, and that we now live in spiritually impoverished times. Anyone who has read anything at all regarding the Middle Ages would readily agree that they were dire times to live in. Fascinating for all that, but from the very comfortable perspective of our very pampered times. The idea that our present time is 'spiritually impoverished' because we collectively no longer believe in 'heaven' (and its shadow 'Hell') conveniently ignore that the 20th Century has seen a remarkable rise in myth-makers with their own stories, which have created 'spaces' every bit as real and cultural as many that have gone previously, shared by enthusiasts worldwide and cross-culturally. 'Star Wars' or 'Lord of the Rings' or the Marvel Universe or the Cthulhu Mythos are as much 'Idea-Spaces' (to borrow a phrase from Alan Moore) as any religious ones, and with less dangerous fanatics I might add. There has possibly never been a more culturally rich time for imagination to flourish than now, with unprecedented access to books, movies, gaming narratives, comics etc, that I would strongly argue serve exactly the same function as this 'lost' space, only minus the religious dogma. Amen.

Finally, the book concludes with the statement that "As Einstein himself recognized, it is the language we use - the concepts that we articulate and hence the questions that we ask - that determine the kind of space that we are able to see". And "Just as medieval soul-space disappeared with the demise of the community who supported that concept, so too relativistic space would disappear from the human psychic landscape without the continued sustenance of the physics community". There is merit in what is being stated here, but the conclusion being drawn from that seems to be that our concepts are basically psychological, so why not choose the beautiful lie over the ugly truth. Yes, the idea of relativistic space would disappear without the continued sustenance of the physics community, but that would not remove its observed evidence, its predictive powers and the vast array of technologies (this computer/mobile reading device and the Internet being but a few close-at-hand examples) that serve as proof that this 'collective view' is far more accurate and less reliant upon 'belief' than dogmatic semantic games would wish, however trivial they may seem in the grand scale of things.

All in all, a fascinating window on pre-(modern)scientific thinking, and the evolution of the idea of 'space' in the Western world, horribly marred by a strong Christian bias preventing a balanced examination of an important cultural shift in collective perspective over the last seven centuries or so.

Marilu says

Interesting interrelations.

Anthony says

despite 'potboiler' format, one of the more interesting volumes of 'popular science'
Recommended as introduction

Trevor says

This book dies in the arse a bit - the end really isn't nearly as interesting as the start, but the start is really, really interesting.

Story time - a long time ago I became increasingly interested in time and how it related to space. If you understand what I'm about to say it ought to make your head feel a bit funny - so if your head doesn't feel funny in a second you might not have quite understood what I've said. Space expands into time.

I always wanted to stand on the edge of the universe - well, given that the edge of the universe is that bit that is furthest away from the Big Bang, the edge of the universe is right here and right now.

So, if the universe is expanding into time, what the hell is time that space can expand into it? I still don’t know the answer to this question – but this book didn’t really set out to answer that question.

This book explains the history of the notions of space and how they have changed over time. Dante’s space (with Heaven above and Hell below and each in various levels) had a real impact on how he saw the world, but also how it was represented in art generally. Paintings had figures in proportion to their significance – so God is shown as huge and people as tiny. Space meant something quite different then, as it was imbued with a spiritual significance that was much more important than its literal significance.

Margaret would make a good Hegalian – she argues that cyberspace is again a way for us (after the seeming triumph of rationalism) to leave our earthly bodies behind and again returning to a more spiritual space. I think this conclusion is a bit iffy, but how she gets here is well worth the journey.
