Containing Epidemics through Metaphor

Two Graphic Accounts

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Abstract

This essay will examine two “graphic novel” depictions of WWI epidemics: one that depicts scientific advances during the dysentery epidemic on the European front in World War One; and another that depicts the Spanish influenza epidemic unfolding across the United States of America. Both texts narrativise an epidemic through a verbal and visual engagement with historical and scientific discourses. These texts were produced within five years of our current Covid-19 pandemic and show us how language (visual and verbal) can be employed to make sense of a plague threat that involves an invisible “enemy”. The way that meaning is blended and elaborated throughout each text can help us understand how a figurative framing of a pandemic might help open up new understandings or possibilities. Popular imagination can productively link with tropes from the past, particularly tropes that were in play as understandings of the role of science shifted.

Keywords

pandemic – graphic novels – metaphor – World War One

1 Introduction: In the Wars

The Invisible War: A Tale on Two Scales (Wild and Hutchings, 2016) is an Australian text that is the product of a collaboration between scientific and artistic communities within Australia. It tells the story of advances in the scientific understanding of dysentery that occurred on the Western Front in World War One. Fever Year: The Killer Flu of 1918 (2019), by the American graphic novelist
Don Brown, deals with the Spanish influenza epidemic as it unfolded across the United States of America. Both texts are set during and immediately after WWI, and thus perhaps cannot help but use war as a metaphor to structure thinking about the experience. Both texts give us a resolution: In The Invisible War, the virus bacteriophage declare victory against bacterial invaders in a woman’s gut and she is spared death from dysentery; Fever Year gives us a resolution as the three-act performance of the killer flu virus across the world stage comes to a close.

Many of us at this time are also looking for a way in which to narrativise and resolve the Covid-19 pandemic. When and how can it end? Readers and writers are looking to metaphor to structure this experience and build a meaningful story. Conceptual metaphor theory (as proposed by Lakoff and Johnson), which foregrounds our bodily experience and the way it scaffolds our thinking, is a helpful tool to understand something that has had such a dramatic effect on human experience around the world. Lakoff and Johnson are “embodied realists” that consider our metaphorical construction of the world to be embedded in embodied experience (96). This construction of meaning in a culture is not arbitrary, but it can be subject to change. Changing social constructions are largely driven by the blending of ideas across source domains within our imaginations (96–97).

Linguistic playfulness is not necessarily idle, and figurative turns can provide helpful framing for society’s benefit: Fauconnier and Turner assert that cognitive blending across different domains of thinking is an important driver of creative leaps and solutions to problems. New understanding can emerge as separate scripts are run simultaneously, and different ways of looking at the world blend to give us new meaning. Multimodal texts, such as the graphic novels I’ll be discussing here, allow for metaphors to be communicated and reinforced both visually and verbally. This article will consider the extra layers of understanding that are available to a reader through the graphic novel format of these texts, and the opening up of a popular imagination that may help us read and elaborate our current Covid-19 situation.

The propensity to link war and epidemic has resulted in the playing out of the metaphor illness is war in many contexts, including our current situation. Susan Sontag addressed problems with the use of this metaphor in the popular imagination, first as she “battled” cancer in the 1970s, and second as she wrote about the AIDS epidemic as it unfolded in the 1980s. Apart

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1 This article will capitalise master metaphors – the convention adopted by Lakoff and Johnson and other cognitive linguists.
from the demoralising effects on an individual locked in a win/lose battle, Sontag warned that society as a whole could pay a heavy cost if it used military metaphors in response to disease: “War-making is one of the few activities that people are not supposed to view ‘realistically’; that is, with an eye to expense and practical outcome. In all-out war, expenditure is all-out, imprudent – war being defined as an emergency in which no sacrifice is excessive” (99). The same uneasiness with respect to the necessity for sacrifice during the “war” against Covid-19 has been evident in the response of many health workers, who have pushed back against the idea that they should be engaged in a battle on the “frontline.” One US clinician noted that “War is dangerous by definition, but danger should never be inherent in the hospital” (Kohlt 15). Healthcare workers, teachers and professors have asked not to be called “heroes” when doing their jobs (Ozla et al 105). Semino notes that war metaphors can work to “mobilise” society to act quickly with respect to an urgent problem, but that they can be counter-productive and lead to fatality and a loss of societal morale over time if, as with Covid-19, there will never be a clear “win” against the disease (51–52). Covid-19 IS WAR also becomes problematic when the way to “fight” the disease is to isolate, or retreat, into one’s home: the metaphor doesn’t provide a helpful frame for self-restraining behaviours during a pandemic (Olza et al 105).

The study of how multi-modal metaphor and narrative combine in the two graphic novel texts under consideration can give us insight into how an epidemic is conceived of in a communal, popular imagination. In How Literary Worlds Are Shaped, Pettersson notes that the relation between extended metaphor and narrative in the study of literature across cultures and ages has received too little attention (159). Pettersson suggests following the lead of Italian philosopher Giambattista Vico (1668–1744) in recognising that the study of popular imagination – imagination developed in peoples – can be just as productive as the study of individuals (24–25). Looking at how metaphors are contextualised within a particular society can help understand the complexity of popular imagination, a complexity that has sometimes been minimised by the “universalist claim of the cognitive wager” (153). And it is not just looking across cultures, but across time, that can give us insight into the complexity of popular imagination, and the cultural resources that it draws upon. Healy, for example, sees the Renaissance and early modern period in Europe, with its representation of the human body as a microcosm-macrocosm, as an especially rich tropological source. Figurative language that concerns the body “has the power to disrupt stable meanings, and to disseminate them across domains (material, psychic, social) and beyond the boundaries marking a specialized discourse” (12). The texts under consideration here draw upon somatic tropes from this period, and Healy might argue that they cannot help but do so.
The Invisible War is marketed to secondary school teachers in Australia as apt for the classroom, “created by a team of scientists, artists, educators, writers and historians” (see Invisible War). It presents two “stories” alongside each other: the story of an Australian nurse who travels to the Western Front and becomes ill with dysentery, and the story of the “invasion” that occurs within her gut and the “predator” bacteriophages that take a stand against the invaders. Fever Year treats the epidemic itself as a script that is played out, as the actors themselves try to make sense of what is happening to them. This text presents the Spanish influenza epidemic as a “killer” involved in a “three-part performance” with repeated “curtain calls” after WWI. The text shows how the virus performed across the world stage and shines the spotlight on its effect on the United States. This performance trope draws on the staged rehearsals of concerns about the plague during the Renaissance, where the plague was sometimes personified as a killer-tyrant. Healy argues that “placing a densely symbolic body bearing the stigmata of its disease on stage (a relatively common practice in the Renaissance...), has the potential to disrupt and shape cultural meanings, to fashion responses, and to negotiate social change” (13).

2 A Battle of (Micro)cosmic Proportions

Disease has always been associated with war, and with bodies thrown into conflict. Fever Year notes that “infectious disease has accompanied armies for all time. Of the Civil War’s dead, two out of every three were killed by disease” (7). The devastation wrought by the influenza pandemic is depicted as worse than that on the WWI battlefield, the laying out of dead soldiers in American hospitals “beats any sight they had in France after a battle” (27). The close identification of disease with war goes back to ancient Greek thought. Disease was considered to be a civil war within the body. If disease won, the soul within the body was set “free” from the body. The body was positioned as the site of a battle, as well as the military force charged with “holding out” to defend the soul against attackers, as when Plato described the battle of dysentery and diarrhea:

[W]hen bile flows in more copiously, mastering the fibers by its own heat, it boils up and shakes the fibers into disorder; and if ever it should become sufficient to mastering them to the end, it penetrates all the way to the marrowy kind and, by burning, cuts loose from that place the bonds of the soul, as cables from a ship, and sets her free. But whenever the bile’s less plentiful and the body resists dissolution, then the bile itself, having been mastered, either is banished over the entire body or pushed through the
veins into the lower or upper belly, being banished over the entire body like exiles from a city in civil war; and it makes for diarrhea and dysentery and all diseases of that sort.

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The idea of disease as a site of battle continued as Neo-Platonic and Gnostic ideas cross-fertilised in Medieval and Renaissance thought, and human disease became a battle with cosmic implications (Pagel 129). “Man” was considered to be an intermediate being, between God and nature, and his body partook of the divine spark of light at the same time as it was made of matter: man was a microcosm. This dualism led to a war within man, and a war for man, similar to the battle described by Plato above.

Paracelsus (born Theophrastus Phillipus Bombastus von Hohenheim, c. 1493–1541), the “father of chemistry and the reformer of materia medica” (Borzelleca 2) framed “health” as the assimilation of all that finds access to the body from outside. Disease was the failure of the internal “balm” or “mummy” to dissolve and assimilate: hence the quest for a universal solvent that would also be a universal remedy (Pagel 149). In Paracelsus’ world, man was connected to the heavens, as well as to the earth, and there was a correspondence between the astral firmament and parts of the human organism (Pagel 67). Each disease was “fixed in its poison”, and the source of the poison can be ascertained through astrology. For example, in the case of plague, there were six classical locations in the body: the region behind each ear, under each armpit and the groin. Each of these areas corresponded to a “locus planetarum”: Saturn and the moon acted on the region behind the ears, Mars and Jupiter on the armpits and Venus on the groin (Pagel 68). Drugs were used to bring about a concordance, for example “between the astral Mars and the grown Mars” (Pagel 70).

Fever Year engages with these cosmic correspondences in its description of the origin of the term “influenza”: “The Italians believed the disease was the work of the heavens- the moon and the stars. Ex influential celesti, they said, meaning the sick were under a celestial influence. Eventually, the disease simply became known as una influenza” (12). This verbal description of the origin of

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2 The word “man” is used in this essay when it is used to denote a historical discourse that would have conceived of “man” as universal. Of course positing man as a microcosm of the universe, and centring a male body within this, excludes much from our understanding of the universe! The Invisible War uses a female body as a microcosm, describes the “war” within this body at the same time as it centres a feminine experience of being a nurse (an “essential worker”, in our Covid-19 language), on a WW1 front.
the term “influenza” is accompanied by three panels that show a person drawn with low modality, falling down on the ground directly under a moon. This very “generic” depiction of a human in these panels underscores the obscure nature of these cosmic correspondences— we no longer conceive of ourselves in any detailed way as being under these astral influences.

*The Invisible War*, despite its title, does not begin with an idea of conflict. Instead, it begins with the idea of *symbiosis*, which is defined as “interaction between two or more different organisms living in close physical association, typically to the advantage of each”. Symbioses amongst microorganisms have led to a planet rich in biological and geological diversity. *The Invisible War* positions the human gut as a microcosm of this world, and the gut’s cooperative response to the invasion of dysentery bacteria shows that evolution through competition is “only part of the story. Life is just as much about working together.” The story of one nurse’s gut, and its response to an invasion of dysentery, is styled as a story about the origins of the world, and as a metaphysical challenge to our understanding of life and its purpose.

The inside of the woman’s body is presented as a healthy wilderness landscape: “Welcome to the gut. A thriving, teeming wilderness of tiny creatures is busy working with friends, competing with others, fighting and breeding, eating and sharing food. Millions, billions, and trillions of them, living in and around the great river of chyme that flushes down the gut” (27). The image on this page shows a river surrounded by teeming and varied forms of life. The use of the body as landscape multimodal metaphor is almost prelapsarian in its picture of harmony and cooperation: almost, because there are present elements of “fighting” and “competition” that suggests scarcity and discord are present, too. The “Q&A” at the end of the text acknowledge that “it’s not all happy times and cooperation, because many microbes compete for food and space. In fact, one major role of our resident gut bacteria is to take up space in and on the mucus. This prevents harmful bacteria from gaining a foothold and causing disease” (74). This competitive colonisation of the mucus is presented as a strategy to ward off disease — in fact this world within the gut possibly functions as a whole other immune system (77) that protects our bodies from external infiltrators, in a manner that would reassure Paracelsus.

There is a “hyperorganised” harmony that underpins the correspondence of cosmic bodies and their counterparts within the human body in the Paracelsian system (Barkan 38). At the same time, there is multiplicity and threat-

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3 *Modality* is used to refer to the extent to which an image approaches photo-realism. See Kress and van Leeuwen for an explanation of this aspect of “the grammar of visual design”.

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ened fragmentation. The Paracelsian system shows that “man’s body is so vast a world, analogous to so many others, that his condition necessitates enormous moral insight and personal fortitude to control and harmonize such great worlds” (Barkan 38). This fragmentation is elaborated on by later authors such as John Donne, who famously asserts that “[m]an consists of more pieces, more parts, than the world; than the world doth, nay than the world is” (Donne 27).

Figure 1 shows the full-page image of Sister Annie prone in bed, as she suffers through dysentery and the bacteriophages do their “hunting” and “protecting” inside her gut (The Invisible War 62). The nurse beside her bed is praying, which highlights that there is nothing from within the world of the medical ward that is assisting the patient in her fight. Rather, the image positions forces from outside the world of the ward as undertaking the battle on behalf of the nurse’s life. The bacteriophages have “unlocked” and infiltrated the shiga cells and are on the attack against dysentery, multiplying within the shiga cells and exploding them. The gut inhabitants are pictured in a disordered orbit around the world of the ward. This strange constellation reminds us of Donne’s multiple and fragmented body parts, now laid outside the world, at once larger and smaller than it. The gut inhabitants also remind us of the cosmic control the inhabitants of the firmament exert over the human body in Paracelsus’ world. The centre of the image in this case is the gut of the human patient, and this is the area of “astral correspondence” with the surrounding (micro)cosmic inhabitants. Like a patient in Paracelsus’ time, the patient is not aware of the astral correspondences with the disease inside her, and the “fixed” position of the poison within her body (the gut). On the next page the supervising nurse notes that the patient could have died, as “nothing I gave you was helping”. She notes that her patient friend suddenly “just rallied”, and that “I suppose the human body is a strange and wonderful thing” (63). In the world of these WWI nurses, the “wilderness” of the gut, and its staging ground as a battle for a dysentery patient’s life, is an entirely unknown universe.

Fever Year shows how false conspiracy narratives that portray a fight between what is deemed good and evil can go viral. Lieutenant Colonel Doane, also a federal official, merges a WWI narrative with the battle against the virus in this conspiracy theory: “The epidemic was started by Huns sent ashore by Boche submarine commanders ... It would be quite easy for one of those German agents to turn loose Spanish influenza germs in a theater or some other place where large numbers of persons are assembled” (50). In this conspiracy theory, the “Huns” become the sneaky pathogens of disease. Another false narrative that appears to draw on a Gnostic fear of physical matter is the narrative, promoted by city officials, that dust on the streets caused the spread of influenza. Essential workers were brought in to battle dust: “One Colorado town used a
FIGURE 1  Bacteriophages help a nurse recover from dysentery in *Invisible War*
water wagon and fire hose to dampen dirt streets. In San Francisco, the street and sewer workers were directed to flush streets and sidewalks with water” (55). This narrative could be seen to draw on the metaphor city is a body. It is important to keep this body “clean” in order to avoid disease, and watering down dust is a way a way that the body can publicly scrub itself down and be “sanitised”.

The city as a body metaphor is cued from the very beginning in Fever Year, when Times Square in New York is shown as almost totally empty on New Year’s Eve, 1918. The body is experiencing emptiness: both food and happiness are described as being rationed and in short supply. There is only one figure in military clothing, hunched over, collar drawn up, with close up panels emphasizing a furtive expression. The verbal text refers to the beginning of a “fevered, ruthless year”, that would bring sickness to a third of the planet and death to millions of people (5). In Platonic fashion, the soul is in danger of escaping the diseased body and leaving it empty and lifeless. When the disease hits, the nurse notes that “It seemed as if all the city was dying” (33), and the closing down of businesses and essential services leads a lone civilian in an empty city street to note that “the life of the city stopped” (38–39).

3 Stellar Performances

In ancient thought the planetary system is joined with the body not astronomically, but by the transformation of the planets into gods who have human form and personality. A “cosmic stage” can be envisioned, upon which dramas can be acted out by these gods and then mirrored in our anatomy (Barkan 24). It is not hard to see how we are apt, now, to see actors on any form of “stage” (literal or figurative) as “stars” that play out dramas that are important to us. A look back at Paracelsian thought also helps us to understand how contemporary audiences are far from passive consumers of this “star power”, and that in fact humanity’s imaginative power is intense and potentially dangerous.

According to Paracelsus, man’s (cosmic) power derives from his most potent instrument: the imagination: “What else is imagination but a sun in man which acts through his circle?” (Pagel 121). But cosmic relationships are potentially very toxic. Man’s imagination can send poison to the stars, an “effluvia of sinful imagination” (Pagel 123). A “pestilential agent” is then formed by and in the stars, and humans are infected by the plague through contact with stellar excrement. Imagination can also be more sneaky and indirect in its operation:
But imagination may also work more indirectly in plague. The news that my brother was carried away by the plague abroad may “reverberate” in myself so much that it finally displays an action similar to that of semen in conception, kindle the disease in myself, and thereby create the source of an epidemic. This can propagate itself not only through contaminated air, but also by the transmission of morbid, pestilential imagination from one person to another. Hence one part of plague prophylaxis is to keep people cheerful and pleasantly occupied. Fright is one of the most dangerous emotions- it is the coward who is killed in wars, and he who imagines himself a reborn Roman warrior wins.

_Fever Year_ represents a similar fearful interpretation of the power of “reverberating” imagination in the context of a pandemic. One city official felt that the promotion of “cheerful talk” was the best response to the pandemic (35). Another city official felt that the wearing of masks fed fear, and “He thought that one hundred thousand people could be ‘scared into illness’. He said flu masks are pure fake and ‘poppycock’” (59).

The metaphors in _Fever Year_ draw on theatre performance as a source domain and are linked to the conceptual metaphor _life is a show_. This metaphor could be criticised as positioning the reader as a passive audience member and implying more generally a lack of human agency in everyday life and within history. Rancière pushes back against the binaries that underpin this sort of thinking: viewing/knowing; appearance/reality; and activity/passivity (Rancière 16). In fact, we are all spectators at the same time as we are actors in our own story, and the “emancipation of the spectator” can come about through a blurring of these boundaries and a blurring of the distinction between individuals and the members of a collective body (25). Part of this blurring of boundaries is removing “hyper-theatre” from its pedestal, encouraging “heterogenous performances”, and putting the theatrical stage on an equal footing with “the telling of a story, the reading of a book, or the gaze focused on an image” (25).

As a multimodal text that foregrounds theatrical performance as a retelling of history, _Fever Year_ is an apt example of the sort of “heterogenous performance” that Rancière encourages. _Fever Year_ uses the language of different literary discourses, and this heteroglossia is reflected visually and verbally. The title page, its font and background, cue these different discourses. Theatre curtains form the background to the title page. The idea of live dramatic performance is also provided by the subtitle: _A Tragedy in Three Acts_. The title's font, however, does not connote a Shakespearian tragedy. It is written in a blood-red,
fig. 2 Uncovering the identity of the killer in Fever Year.

The pulp typewriter font, with sprays of red (blood?) adjacent. This font connotes a murder mystery from a “pulp fiction” context, and not highbrow theatre. The word fiction in the lower-brow context has connotations of hallucinations, nightmares and drug-induced paranoia. The reader is primed to be shocked by the drama, but also perhaps entertained by the luridness of it all. This is the pulpy narrative hook that is used to reel younger readers into a narrative about a historical event.

The pulpy murder mystery allusions are continued through Fever Year. The spray of blood is revisited on page 26, where a panel shows a red-stained tissue pressed under a nose, with the words “Noses bled, sometimes in bloody sprays”. Towards the end of Act II, the last panel on page 67 shows a scientist looking over his shoulder in the manner of one who has been caught red-handed in a crime. A text box explains: “In 1892, German doctor Richard Pfeiffer had discovered the bacteria responsible for causing influenza,” and then another text box in the right-hand corner of the page includes the cliffhanger question: “Or had he?” Dr Pfeiffer’s vaccine was rushed out without conclusive evidence that bacteria caused influenza, and the image sets him up as a villain in the story.

Fig. 2 shows the opening in which the true nature of the killer is revealed in Fever Year. The “identity” of the killer has been revealed: a virus rather than...
a bacterium. However, the deadliness of the virus is not fully comprehended until 2005, when the Spanish flu was recreated in a laboratory by scientist Terence Tumpey. Tumpey’s work made “the unique monster whole again since its killing spree nearly a century earlier.” The virus easily killed lab animals, and Tumpey is quoted as saying “I literally felt a chill go down my spine.” The reference to a recreated monster evokes a *Frankenstein* narrative, and sets up an unease that carries through over the page into a debate of “experts”, who dialogue in passionate red speech balloons about the potential for the recreated virus to do harm as well as to promote learning about viruses. The last expert notes that “release of a highly communicable and deadly biological virus could kill tens of millions, with some estimates in the hundreds of millions” (88). The murder mystery has been solved but a potential Frankenstein’s monster may be waiting in the wings to stalk the stage, and in fact the killer flu comes back for some (unwelcome) curtain calls.

*Fever Year* is dedicated to “The Centers for Disease Control and Prevention, an underappreciated American treasure”. The CDC doesn’t feature within the text, as it was established after WWII. The use of the phrase “national treasure” is linked to the idea of an actor who is recognised for their contribution to film and/or theatre in a particular country. The CDC, then, is recognised as a key actor in the “staging” of pandemics in the United States. Film and entertainment references continue through the text. *Fever Year* later refers to Walt Disney, the creator of many film narratives that are seen as part of the American storehouse of cultural capital. *Fever Year* pictures Disney on a WWI battlefield as an ambulance driver and notes that he practiced his cartooning on the front, “a talent that would earn Mickey Mouse creator Walt Disney fame, far beyond his ambulance driving” (51) Even though “essential workers” in *Fever Year* are “stars”, they are not positioned as “celebrities” in the same way as the central “actors” within Hollywood are. However, ironically, this makes them even more worthy to be considered as a “national treasure”, or “star material”. This is reflected in the fact that even one nurse could “stop a movie show” so that she could be ordered out of the audience to work 16-hour shifts during the height of the pandemic in Philadelphia (60–61).

It seems that theatre patrons themselves were vulnerable during the influenza pandemic as stand-ins for the city “body”. In *Fever Year*, for example, an official is concerned that the killer flu would attack New York (with the assistance of the Huns) during a theatre performance (50). Another worrying aspect of the theatre associated with the pandemic in this text is the “nonsensical” performance of the virus, in that its movement from place to place appeared random and unpredictable: “Mumbai, India, was at opposite ends of the earth from New York City, yet the flu peaked in both cities in the same week” (74).
The Invisible War doesn’t visually cue a stage as a source domain for metaphor, as Fever Year does with its curtains at the beginning. However, the idea that life is a show is still present in the text, and this is linked to war is a theatre. A set of Q & A notes refer to the western front as “the main theatre of war” during WW1. This is an interesting observation in an Australian text, as so much of the “drama” around the coming of age of Australian identity after its federation centers on the role of ANZAC soldiers at Gallipoli, another theatre of war during WW1. But there are other (human, not microscopic) dramas playing out in this text, too. The Australian nurses have their own debate about conscription and whether soldiers should be forced to fight for freedom when “the British Empire doesn’t provide freedom for everyone” (19). Were the theatres of war an appropriate venue for Australian soldiers? Australia was strongly divided on this issue. The closing of this text shows Annie about to vote in the national referendum about conscription, but doesn’t indicate which way she will vote. The 1916 Irish Easter Rising is alluded to during a conversation between nurses and Annie is shown thinking: “And, if the Irish Rebels had won, would we call it betrayal? America once rebelled against the British Empire, and now we call it Independence.” Annie’s thoughts prime the reader to recognise the complexity of the microbial battle in her gut, too: who is fighting for freedom on this battlefield? In the storyworld of the gut, it is a virus, an oft-maligned life-form, yet in this case beneficial to its “host.”

At the centenary of the ANZAC Gallipoli landing in 1917, Dr Jeremy Barr called for Australians to also recognise another centenary: that of the identification of the Shigella bacterium as the cause of the infantryman’s dysentery, and to look again to bacteriophage as the possible “answer to a world where antibiotics are losing effectiveness” (Barr). Could a virus -- a “bad guy” -- be a “silver bullet” in this drama?

The stars of The Invisible War are nurses: it is dedicated to “nurses everywhere.” The life is a show and war is a theatre metaphors extend to the last page, which looks like the actor biographies one might see in a printed pro-

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4 A “silver bullet” is an idea that blends ideas from different sources. In European folklore, silver bullets were the only way in which a supernatural enemy such as a werewolf could be killed. In 1940 the film Dr Ehrlich’s Magic Bullet was released, documenting Dr Paul Ehrlich’s search for a cure for syphilis. It became common as a way of referring to a drug, not yet discovered, that would be the perfect cure for a disease. Over time “silver bullet” moved away from its original supernatural context and replaced “magic bullet” in media reportage of hoped-for but almost-miraculous solutions to a problem (Quinion). Interestingly, silver itself is being investigated as a potential “silver bullet” to address the problem of decreasing antibiotic effectiveness (BBC).
gram for a theatre show. The authors of the text are drawn as WWI characters. For example, the illustrator Briony Barr is drawn as a WWI nurse. Dr Jeremy Barr is represented as a WWI physician, and it is noted that the text was produced with his collaboration, and that his research inspired the project. This text shows the emerging science of microbiology during WWI, and Dr Barr in WWI uniform is linked with these “pioneering” Australians on the western front who helped develop the tools for diagnosing dysentery. Sister Annie is shown using these tools to look at a sample of diarrhea, to the disgust of a resistant physician nearby. In these ways the contribution of Australians to medical science is portrayed as another aspect of Australia’s “coming of age” narrative on an international stage.

The other, non-human stars of The Invisible War are the virus bacteriophages, who destroy the dysentery bacteria. The Q & A notes that bacteriophages are the most numerous biological entity on the planet -- there are more bacteriophages than the number of stars in the observed universe (page 74). As a virus, bacteriophages are on the “edge of life”, they are able to replicate and evolve but do not perform the chemical reactions typically associated with being alive (74). The hybrid nature of viruses as a life form could be one reason that the bacteriophages are drawn as robotic characters. Their modality within the “gut storyworld” is overtly comic, and they have an intertextuality with comic representations of aliens and intergalactic space equipment. The Q & A also notes a visual connection: the bacteriophages “are remarkable for their robotic shapes and patterns”. The images emphasise these robotic aspects by incorporating humorous robot-like verbal syntax for the bacteriophage to explain their actions, for example, “we find, we bend ... we slay our prey!” (61).

The dramatic time/s of an epidemic are represented differently within each text. The Invisible War links dramatic time with some visual representations of landscape as body. Page 25 (see fig 3) shows an overhead view of a barge carrying diseased soldiers travelling down the Somme river, and the river is isomorphic with the image of a small intestine in the next panel. The “sluggard ripples” of the Somme are contrasted with the slime in the small intestine, which allows the shiga gang of bacteria to “go racing down”. The narrative of disease unfolds more quickly, and with more dramatic effect, in the microcosm of the gut. However, there are “sluggard ripples” over the individual lives, and over history. This is a river of human misery that many travel. In Fever Year a (“real-life”) survivor of an influenza outbreak in Philadelphia notes “It didn’t last too long” and then, reflecting on the memory notes that “It was a whole lifetime” (43). A closing commentary on “Act III” in Fever Year is provided by the writer Katherine Anne Porter, who lost her fiancé in a “curtain call” of the
Figure 3: Travels down different rivers of misery in *Invisible War*
virus in the 1920s: “It simply divided my life, cut across it like that, so that everything before that was just getting ready, and after that I was in some strange way altered, really.” (89)

The United States, like Australia, agonised about deployment of forces to a war in a European theatre. Fever Year presents their late entry into the war as a catalyst for pandemic: “Hundreds of thousands of new recruits shuffled here and there around the United States to train for European battlefields. Nicknamed “doughboys”, they carried with them patriotism, certainty of victory, hope for safe return, and ... disease.” (6). The original connotations of the term “doughboy” may have been lost, but the term gives us, now, the idea of these young men as not yet formed, guileless, perhaps entering into a war on “half-baked” understandings. And yet they are the unwitting actors in the story of the influenza pandemic. They are perhaps the original (human) context for the spread of influenza, but their comings and goings from the theatre of war are a definite reason for the spread of the disease (89).

4 Drawing Science into the Picture

Both of the examined texts draw scientific diagrams into the narrative. Today the term “diagram” may refer to any sort of schema. In early modern use, schematic diagrams were more limited, referring to geometrical constructions such as buildings or the heavens that needed to be drawn with ruler and compass. Johannes Kepler was keen to draw epistemic certainty from geometry and the construction of figures with compass and ruler, and was frustrated with Robert Fludd’s diagrams, which he argued were an idiosyncratic and invalid use of imagination to develop consonances that “he carries around privately in his soul as a separate painted world” (Luthy 255). The diagram was only later understood to include dynamic relations, where lines now referred to relations between magnitudes (either between each other, or over an extended period of time) (Luthy 272). Arguably, the use of scientific diagrams in these two comic texts helps reopen the door to imaginative and fanciful visual analogies that Kepler was so keen to close.

The Invisible War shows off its grounding in a scientific community by including diagrams of different types in the Q&A section. For example, there is a “big to small” diagram that positions things up and down a vertical line according to size, with the largest thing being the western front, and the smallest an hydrochloric acid atom (70), and a flow chart that shows the decisions that were made about the transportation of sick and diseased soldiers away from the front (72). The image on page 76, which shows how “the phage
“Fever Year” does not have the same sketchy comic book modality as the storyworld -- it has the regular lines and shapes, labelling, and numbered sequence of events and directional arrows that make it appear like a science textbook image.

“Fever Year” is more interested in tracking events across time and place: it includes panels with maps to locate events and help the reader track the spread of the disease. There are panels that signify the magnitude of the illness, however the inability to grasp the full devastation of the flu pandemic is also signified. For example, the illustration on the opening across pages 80–81 (see Fig. 4) has verbal text that notes that: “Almost 650,000 and about 50 million people died worldwide. Primitive and non-existent reporting standards in some parts of the globe at the time make any tally of the total deaths an educated guess at best. The misery and sorrow caused by the flu is incalculable.” The image that surrounds the text boxes on these pages is one that signifies magnitude, by showing a large number of individual figures across the page. The figures are not of the low modality, regular shape and disconnectedness that would identify them as a units of measurement in a scientific diagram. Instead, there is a connectedness in the image – the people are standing in groups that are
linked together in different ways. However, there is no discernable pattern to this connection within the picture – it appears as an unpredictable and continuous grouping of people. The image suggests randomness and an inability to catch a pattern in the spread of the pandemic across the world.

The producers of *The Invisible War* position themselves at an intersection of art and science, and thus fanciful painted worlds are valid for them. The comic images from the WWI storyworld are loaded with fanciful representations of the *Body as Landscape*, and the bacterial elements within the landscape are themselves anthropomorphised. The artist Briony Barr describes herself in her biography as “a conceptual artist who regularly collaborates with scientists. Her artworks draw on complex systems and microscopic worlds” (80). Her drawing in this text is a form of dialogue with the scientific world, in which fanciful images educate the young about science. Her work in *Invisible War* could be understood as using the language of a separate painted world (and in this case, comic book conventions) to express scientific truths, in a manner that would probably draw the annoyance of Kepler, but which is designed to be instructive for contemporary young readers who are used to graphic texts. There is also a playfulness in the juxtaposition of the landscapes of gut and war that highlight the huge battle played out on both fronts. For example, page 46 shows an “explosion” of mucus within Sister Annie’s gut at the same time as she tends a patient who is having nightmare memories of explosive deaths on the battlefield (47).

Sometimes idiosyncratic artistic/scientific choices are made explicit. For example, the introduction of a “kill switch molecule” (page 42) is explained in the Q & A at the end of *The Invisible War* as a means to simplify the representation of a very complex process by which *Shigella* bacteria avoid a “programmed cell death sequence” (78). The images are epistemic in that they reach for an understandable visual representation of a cognitive script – “a kill switch” – that will immediately be processed as part of the storyworld for the reader. The images are not post-verbal; they are not tacked onto scientific verbal discourse. The reverse actually applies: the scientific verbal discourse is tacked onto the end in the form of a “Q&A”, and the prior images help reach for meaning and put together a coherent narrative about the world within the gut.

5 **A Metaphysical Pandemic**

Science has been framed in very different ways during the current pandemic. The philosopher Peter Sloterdijk speaks of the need for the “co-immunism” of the planet: we must vaccinate ourselves against the intellectual poison that
divides us into groups that compete with each other, and use science for the benefit of all. In some ways Sloterdijk’s call to co-immunity represents a co-operative broadening of the “lower heaven” that Paracelsus saw opening up as physicians tended to their medicinal herbs. In Sloterdijk’s view a heaven of a sort opens up as physicians share knowledge and experience for the benefit of the global community, there is “something sublime in the worldwide colloquium that has been going on among physicians sharing their best ideas to confront the new menace”. The philosopher Markus Gabriel has a less optimistic view of science: in fact, he asserts that the assumption that we will be able to solve all modern-world problems with science and technology is an unhelpful result of globalization. The 21st century can itself be framed as a pandemic, with global capitalism transmitting racial injustice and ecological crisis. A virologist is in no way equipped to produce a silver bullet to address our globalised woe. Gabriel calls us “to become citizens of this Earth, cosmopolitans in a metaphysical pandemic.”

We have examined two texts that grapple with epidemics. *Fever Year* deals with a pandemic created by a virus and ends with experts debating the risks of scientific research and the potential for a “unique monster” to be unleashed again. The WW1 influenza pandemic show may have ended, and the murder mystery may have been solved, but unease remains at the way scientific research plots a course through pandemic narratives. *The Invisible War* presents a bacterial epidemic linked to the horrible conditions of war in general and WW1 trench life in particular. The WW1 cholera epidemic doesn’t technically qualify as a “pandemic” if the term is used to look at the spread of disease at any one point in time. However, focusing on one point in time has the danger of making us overlook the devastation that cholera has wrought over time. In fact, dysentery continues to reappear in many places across the world, often in locations that the subject of a media spotlight but in vulnerable or liminal situations like refugee camps. These curtain calls are liable to go unremarked. *The Invisible War* asserts that over two billion people in Africa and Asia live without access to clean water and toilets, making them vulnerable to dysentery outbreaks (*The Invisible War* 71). In these contexts, Barr, the scientific consultant for *The Invisible War*, is hopeful that bacteriophage viruses will be able to help conduct a war for health on behalf of those caught up in Gabriel’s “globalization pandemic”.

*The Invisible War* and *Fever Year* link the popular imaginations of Australia and North America, as they grapple with cholera and influenza, diseases so closely linked with WW1 and its crisis of modernity. It is tempting, now, also to link Covid-19 with the ills of late capitalism, and to see it as enacting a kind of moral judgment upon all of us. But, as we have seen, giving a disease agency,
or allowing it to perform a role on a world stage, is not as straightforward as it might seem. In placing these texts side by side, and exploring how metaphors can play out differently in different contexts, in different places and in different times, I hope to show that, even in the face of a global crisis, humanity has creative agency, and the ability to run many scripts at the same time as we seek to understand, discuss, and act in a pandemic time.

Works Cited


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