

THE 1918 INFLUENZA PANDEMIC IN LITERATURE AND MEMORY

By

Caroline Hovanec

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Professor Jay Clayton

Professor Kathryn Schwarz

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The Spanish influenza of 1918 has been called a “forgotten pandemic,” lost in the archives amidst records of the Great War, the armistice, and the new era of modernity ushered in by these cataclysmic events. It was not that Spanish flu did not keep pace with the war in terms of destruction of life—estimates of the flu’s death toll hover around fifty million people in a single year, while World War I was responsible for about eight and a half million casualties (Crowe; Fussell 18). That war has had a powerful hold on cultural memory; as Paul Fussell observes in *The Great War and Modern Memory*,

“The war that was called Great invades the mind . . .” and that war detaches itself from its normal location in chronology and its accepted set of causes and effects to become Great in another sense—all-encompassing, all-pervading, both internal and external at once, the essential condition of consciousness in the twentieth century. (321)

The “Great Influenza,” it seems, made for a less compelling story. Alfred W. Crosby points out its conspicuous absence from modern history textbooks and from the oeuvres of the great American writers in the 1920s. John Dos Passos, F. Scott Fitzgerald, Gertrude Stein, Ernest Hemingway—none of these authors treated the flu in any detail in their work (315). “It is especially puzzling,” says Crosby drily,

that among those Americans who let the pandemic slip their minds were many members of that group of supposedly hypersensitive young people who were to create some of the greatest masterpieces of American literature, i.e. the “lost generation” for so many of whom World War I, the other great killer of the era, was the central experience of their lives. (315)

In his account, by the end of the decade the pandemic seemed destined to become a mere footnote in literary history.

In the 1930s, however, a few authors began to look back on 1918 in a different light. John O’Hara, only thirteen years old during the pandemic, published “The Doctor’s Son” in 1935, a short story fictionalizing his own experiences during the flu

outbreak. William Maxwell was also a child in 1918, when his mother died of the flu. In 1937, he published *They Came Like Swallows*, a novel about a Midwestern family that falls ill when the flu reaches their town. Finally, in 1939 Katherine Anne Porter's short novel *Pale Horse, Pale Rider* was published. The story closely follows an account of Porter's own illness and recovery during the pandemic, when she was working as a reporter in Denver. Within a five-year span, then, three fairly major American writers revisited their memories of the Spanish flu through their fiction.<sup>1</sup> The "forgotten pandemic" had returned to the literary imagination.

This resurgence of interest in the flu during the 1930s may have been influenced by new developments in virology and influenza research. The field of virology was then in its infancy, having been created in 1926 when Thomas Rivers defined the difference between bacteria and viruses (Barry 417). After a long debate within the scientific community about whether influenza was caused by a bacterium known as Pfeiffer's bacillus or a filterable virus, Richard Shope laid the question to rest in 1931. He published a paper demonstrating that it was, in fact, a virus that caused influenza in swine, though various bacterial infections could and did exacerbate the illness. During a minor 1933 outbreak of flu in humans, a group of British researchers proved the same was true of human influenza (446). From that point, the race was on to develop an effective flu vaccine—a challenge that made front page news in the *New York Times* when a 1933 American Medical Association convention discussed the problem. They concluded that effective preventive measures would attack the virus rather than the

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<sup>1</sup> Thomas Wolfe also wrote about the 1918 pandemic in a chapter of *Look Homeward, Angel*, published in 1929 (Crosby 317).

bacteria that tended to be associated with it (Laurence 1). In the 1940s, US military researchers finally developed an influenza virus vaccine to protect troops (Suddath).

O'Hara, Maxwell, and Porter were better situated than Hemingway's generation to address the pandemic because of their greater distance from the war. O'Hara and Maxwell were too young to join the military in 1918, and Porter, as a woman, could not enlist as a combatant. While Hemingway, Dos Passos, and Stein were in Europe during the fall of 1918, and could readily assimilate the pandemic's destruction into the general senselessness and violence of the war, people living an ocean away inevitably experienced the flu as a crucial event. Porter says of her illness, "It just 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, ready" (Davis 12). For Maxwell, too, his mother's death from influenza and pneumonia marked a major turning point in his life, one that he revisited not only in *Swallows* but in *Ancestors*, *So Long*, *See You Tomorrow*, and *Time Will Darken It* as well (Voigt 152; 159). O'Hara, Maxwell, and Porter all wrote about the flu in highly autobiographical works, and the importance of the pandemic in their personal histories is surely a factor in their choice of subject matter.

During the 1930s Americans experienced a wave of reinvigorated interest in the pandemic tied to medical breakthroughs in influenza research; and the first decade of the twenty-first century marked the beginning of another wave of renewed fascination with the Spanish flu. In 2005 researchers completed a sequence of the virus's genome, using preserved tissue samples from 1918. This breakthrough precipitated further developments: scientists used the recreated flu virus to investigate the particularly

virulent nature of this strain and to search for antibodies in survivors' blood.<sup>2</sup>

Meanwhile, new outbreaks of some flu strains in humans have led to greater public concern over the possibility of another pandemic. Since 1997, there have been multiple cases of humans contracting different strains of avian flu, though so far these strains have not been particularly contagious among humans (CDC Key Facts). In 2009, a new H1N1 virus of swine origin was detected; this virus resembles the 1918 strain in that an unusually large percentage of those affected are young people. "Swine flu" has elicited apprehension in the general public and health organizations alike because it is not yet clear how serious the epidemic will be. The outbreak has prompted many to draw parallels with 1918, recalling the destructiveness of that year's virus (*New York Times*). Now, as in the 1930s, the Spanish flu looms large in both medical research and cultural memory.

"The Doctor's Son" offers a distinctive perspective on the pandemic because its narrator acts as a sort of doctor's assistant, and thus is aware of influenza not as a personal or familial crisis but as a community affliction. O'Hara's story thus differs markedly from the novels of Maxwell and Porter, who write about influenza from the point of view of sick people rather than well people. *They Came Like Swallows* and *Pale Horse, Pale Rider* adopt a progressively narrower focus. *Swallows* examines a single family's ordeal with the flu, each of its three sections focalizing a different family member through third-person limited perspective. *Pale Horse, Pale Rider* centers on only two characters, with the bulk of the novel relating Miranda's interior states. The pandemic's impact in these works consists not only of its material effects, but also of its

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<sup>2</sup> See Taubenberger et al. "Characterization of the 1918 influenza virus polymerase genes,"; Kash et al. "Genomic analysis of increased host immune and cell death responses induced by 1918 influenza virus"; Kobasa et al. "Aberrant immune response in lethal infection of macaques with the 1918 influenza virus"; and Yu et al. "Neutralizing antibodies derived from the B cells of 1918 influenza pandemic survivors."

metaphoric potential. Influenza provides an entry into modernist discourses across disciplines—literature, science, industry, medicine—that are concerned with reconceptualizing bodies of all kinds. So the high modernists, such as T.S. Eliot, shored up fragments of the literary corpus to create a new body of works; so the pioneers of such divergent sciences as quantum physics and population genetics detected discrete elements of categories once thought indivisible; so assembly line mechanics broke down the artisan’s creations into separate steps in the age of mass consumption. As an illness, the flu defamiliarizes and fragments the human body; as a virus, it offers a vision of a different kind of body or composite body. Its figurative role, then, is as a parallel for other facets of modernity that cast doubts the integrity of units—the community, the family, the human subject—once considered natural.

### **“The Doctor’s Son”**

“The Doctor’s Son” examines the flu pandemic primarily through its impact on a community, rather than a single family or a few individuals. This focus provides a panoramic view of the situation in 1918 while limiting the story’s ability to delve into the personal or psychological consequences of the illness. The difficulties of organizing a public health response to the epidemic are particularly evident in the story: the shortage of doctors, dangers of public assemblies, and inadequate supply of drugs all contrive to make it impossible for O’Hara’s physician characters to treat their patients adequately. Crosby describes old doctors coming out of retirement to work 20-hour days, and quotes Senator John Weeks of Massachusetts: “‘My family doctor,’ he said, ‘told me he was out 21 hours of the previous 24, and that if he had twice as much time he could not have

performed his duty” (50, 52). The shortage of nurses was an even more dire problem: cities bid against one another for Red Cross nurses, and some towns, such as Bath, Maine, could not recruit any nurses at all (51). Even people without any nursing experience were called to fill this much-needed role, and medical students left classes to attend on emergency hospitals (51; Barry 226). Part of the reason for this shortage was the war. Philadelphia, about a hundred miles from Pottsville (O’Hara’s model for the fictional Gibbsville), was one of the cities hit hardest by the pandemic. Crosby reports that

twenty-six percent of Philadelphia’s physicians and a large proportion of its nurses were away on service with the military. Seventy-five percent of the medical and surgical staff of the Pennsylvania Hospital on Eight and Spruce streets was overseas. (71)

Yet the shortage was also a result of the sheer number of patients: in a little over a month, more than 12,000 Philadelphians died of the flu, and the total number of cases proved impossible to measure (Crosby 86). In Schuylkill County, home to Pottsville and other mining towns, 17,000 cases had been reported by October 14, with no signs of abatement for another two weeks (Madara 17). With numbers like these, even fully staffed hospitals would not have been able to keep up with the demand.

Tensions were, understandably, running high in this moment, as flu victims often could not get sufficient access to health care, and doctors could not meet the demand for their services. In “The Doctor’s Son,” narrator Jimmy Malloy recalls his father’s attempts to find time for sleep during the worst days of the pandemic:

At first he would get it by going to his office, locking the rear office door, and stretching out on the floor or on the operating table. He would put a revolver on the floor beside him or in the tray that was bracketed to the operating table. He had to have the revolver, because here and there among the people who would come to his office, there would be a wild man or woman, threatening him,

shouting that they would not leave until he left with them, and that if their baby died they would come back and kill him. The revolver, lying on the desk, kept the more violent patients from becoming too violent, but it really did no good as far as my father's sleep was concerned; not even a doctor who had kept going for days on coffee and quinine would use a revolver on an Italian who had just come from a bedroom where the last of five children was being strangled by influenza. So my father, with a great deal of profanity, would make it plain to the Italian that he was not being intimidated, but would go, and go without sleep. (3-4)

Jimmy's matter-of-fact tone in this passage belies the panic and fear of the situation he is describing. The potential for violence is apparent in the presence of the revolver, the "wild" people's threats, and the mutual desperation of client and doctor; but this potential is minimized by James's acknowledgement that his father could not actually use the gun, and by Dr. Malloy's show of bravado. Yet Dr. Malloy's exhaustion becomes quite serious, requiring him to take a hiatus from administering to patients. As Jimmy relates,

The State stepped in, and when a doctor got sick or exhausted so he literally couldn't hold up his head any longer, they would send a young man from the graduating class of one of the Philadelphia medical schools to take over the older man's practice. This was how Doctor Myers came to our town. (6)

As this passage and Crosby's account attest, a doctor's collapse from exhaustion was not unusual during the pandemic, but merely another contingency to prepare for.

"The Doctor's Son" also dramatizes another major public health risk: the gathering of crowds, which was difficult to curtail despite its known danger. Philadelphia, like other major U.S. cities, imposed restrictions on public assembly, but they were too little and too late. On September 28, the Fourth Liberty Loan Drive went on as planned, kicking off with a parade that drew 200,000 people to the streets. A few days later, on October 3, the city belatedly closed all schools, churches, theaters, and other "places of public amusement" (i.e. pool halls, saloons, and the like) (Crosby 72-74). A *Philadelphia Inquirer* editor criticized these measures, saying, "Since crowds gather in

congested eating places and press into elevators and hang to the straps of illy-ventilated street cars, it is a little difficult to understand what is to be gained by shutting up well ventilated churches and theatres” (quoted in Crosby 74). Bruce C. Madara reports that Schuylkill County adopted similar precautions, prohibiting the gathering of crowds; but such restrictions were often flouted, sometimes quite openly. “A Gilberton saloon,” he relates, “was said to have a sign on the front door that read, ‘Come to back door same like Sunday’” (36).

In “The Doctor’s Son,” saloons become makeshift doctors’ offices for the miners and their families. Irish and Hungarian women crowd into the bar, describe the symptoms of their absent family members, and receive prescriptions from Dr. Myers. It is an anonymous, assembly-line kind of medical practice, but the ratio of patients to doctors makes individualized care impractical. Though Jimmy and Dr. Myers are aware that crowds of people are an ideal place for an airborne disease to spread, they become inured to the danger out of necessity:

Doctor Myers at first wore a mask over his nose and mouth when making calls, and so did I, but the gauze stuck to my lips and I stopped wearing it and so did the doctor. It was too much of a nuisance to put them on and take them off every time we would go to a place like Kelly’s, and also it was rather insulting to walk in on a group of people with a mask on your face when nobody in the group was wearing one. I was very healthy and was always glad to go in with the doctor because it gave me something to do. (33)

It would be insulting to acknowledge that public gatherings could and would make people sick when, for many of these people, the public gathering was their only chance to see a doctor and help their sick family members. The overstrained health care system created a paradoxical situation in which seeking medical attention meant exposing oneself or others to the flu. One saloon in particular becomes a breeding ground for the

flu when Wisniekwski, a sick barkeeper, passes around a bottle of liquor for all the men to share; at least one man dies after catching the disease from this bottle.

The inadequacy of drug supplies also interferes with the doctors' ability to care for their patients. Madara describes the situation in Schuylkill County as follows:

Drugstores could not handle all the customers demanding prescriptions to be filled, and the stores soon sold out of castor oil, camphor, and quinine. [...] There were no antibiotics, and the price of drugs was much too high for the poor. Quinine in pill form arrived in large sugar barrels. As quinine and other drug supplies ran low, the doctors began to urge the drinking of whisky. (36)

In reality, few of these drugs could have alleviated the illness. Antibiotics would have prevented many bacterial infections that tended to accompany influenza, but it would be another ten years before penicillin was discovered, and years after that before antibiotics were commercially available. As for quinine, it worked to treat malaria, not flu; it was one of many desperate attempts by doctors to find some drug that would help (Barry 352-353). Nevertheless, some drugs could provide pain relief, and most could at least alleviate some patients' anxiety. In "The Doctor's Son," Jimmy describes the shortage:

The flu doctor would ask each person three or four questions and then pretend to prescribe for each case individually. Actually they gave the same prescription to almost all of the patients, not only to save time, but because drug supplies in the village and city pharmacies were inadequate, and it was physically impossible to druggists to meet the demand. They would make up large batches of each doctor's standard prescription and dole out boxes and bottles as the patrons presented the prescriptions. (49-50)

Physicians and patients had to make do with limited supplies of mostly ineffective drugs.

The en masse practice of medicine in "The Doctor's Son" also points to the modernization of the medical profession. Dr. Malloy's old style of making house calls and developing personal relationships with his patients is impossible to maintain in the pandemic climate, when emergency hospitals and visiting doctors provided a more

anonymous but wide-scale kind of health care. Like most trades, medicine changed in the era of mass production and consumption. Though the assembly-line treatment of patients in “The Doctor’s Son” is perhaps a more extreme example of this than would be typical in non-epidemic times, the story nevertheless marks the end of an era. Influenza calls for a modernized, even Taylorized style of medicine, and this perhaps reflects the sense that flu is itself a modern disease. The scope of the pandemic depended on urbanization, which placed large crowds of people in relatively small spaces in which airborne germs could move freely; and it also depended on travel, both among continents and within regions and cities. Without the global motion enabled by railroads, ships, trolleys, and other modern modes of transportation, the virus would probably not have spread as rapidly or as far. The pandemic certainly was not the sole cause of the medical profession’s modernization, but it does bring this process into a sharper focus.

### ***They Came Like Swallows***

In Maxwell’s novel, the Morison family acts as a case study for the links among contact, sympathy, and contagion. *Swallows* has been praised for its “expert use of foreshadowing and suspense,” and there are two major sources for this suspense: first, the way innocent encounters become potential vehicles for spreading the flu; and second, the way mental and emotional states manifest themselves physically (Bawer 30). Every moment of contact seems fraught with the possibility of transmitting the contagion. The women in the family, particularly Elizabeth and her sister Irene, are constantly kissing each other. Robert seeks shelter in his father James, “who did not subject him to these humiliating displays of affection,” but Bunny kisses his mother good-morning not twenty

minutes before he is stricken with fever (108). Later, when Bunny is confined to bed, Elizabeth enters his room despite the doctor's prohibition against it (for Elizabeth is pregnant and therefore considered especially vulnerable). Before Robert can stop her, she is "on the edge of Bunny's bed, holding him" (119). The affectionate contact between mother and child contributes to a sense of foreboding, for the reader knows as well as Robert does that Elizabeth is putting her life in danger. She does not contract the flu until much later, however, when she enters a crowded train car. And though Robert and James both feel guilty, James realizes that "neither Robert nor anyone else was responsible for Elizabeth's death" (265). This conclusion, however, does not lessen the portentous tone of the preceding scenes.

Physical responses to intellectual or emotional stimuli in *Swallows* often resemble potential flu symptoms and contribute to the ominous tone of the first two-thirds of the novel. Elizabeth reacts to a newspaper article about influenza by sneezing and complaining facetiously of "fever, pains, and depression" (24). Bunny, observing her discomfort, responds similarly—he too feels that "suspension" that occurs just before a sneeze, and "his nose tickle[s]" just as hers does (23). When Robert reads in the newspaper that the schools have been closed, he feels "very small prickles in the region of his spine"; jealousy manifests itself as a "queer tightness in his side"; and when Bunny catches him reading Aunt Clara's dictionary, he becomes red in the face (128; 135). These signs of emotional discomfort or pain are always dangerously close to the fever, aches, and pains that are signs of influenza.

The body is not just a tablet for the inscription of emotions and flu symptoms in *Swallows* but also a site of fragmentation, sickness, and incomprehensibility. For

influenza is not the only threat to the body in this novel. Most notably, Robert has lost a leg in a childhood accident, and every morning he must strap on a wooden prosthetic. Despite his relative prowess in sports and games, Robert cannot help fantasizing about a medical breakthrough that could make bones grow, and make him whole again. When Bunny accidentally breaks Robert's toy soldiers, Robert takes it particularly hard. Even though the soldiers and horses are just toys, not real bodies, he feels "pity" for them as if they were alive—he imagines that they are going through the same thing he went through in his own accident. His attempts to repair the soldiers parallel the attempts to repair his own body. Just as his wooden leg is barely discernible to his friends when they play football but obvious to Robert all the time, so are the cracks in the soldiers invisible from a distance but impossible for him to ignore. Since the broken toys are soldiers, this scene also reflects the proximity of World War I, which has just ended. *Swallows* does not explicitly deal with the violence visited upon human bodies during the war, or the veterans returning home with injuries and amputated limbs and shell-shock, but the war is a constant undercurrent in the novel.

Elizabeth's pregnancy is presented as a state of bodily vulnerability linked to her bout with the flu, since she gives birth while sick with influenza and dies shortly thereafter. The two conditions parallel one another, and the language characters use to speak of pregnancy sounds like the language with which one might speak of an illness. James tells Robert that Elizabeth had a "pretty difficult time of it" when he was born, and again when Bunny was born; so for this third child, Elizabeth must be placed in the care of a doctor in Decatur who has "developed a new treatment in dealing with childbirth" (145). Some of the ordinary effects of pregnancy also resemble illness, such as the

nausea that diminishes Elizabeth's appetite. In the Morison household, pregnancy is a mysterious and somewhat embarrassing condition. Robert notices his mother's expanding waistline: "He didn't mean to look, but sometimes he did, anyway, and it embarrassed her" (108). Later, when Elizabeth and James have left for Decatur, Robert turns to an old dictionary to try to understand pregnancy and childbirth. Though he looks up "child," "fetus," and "womb," it is to no avail: "The meaning was there, but he could not get at it. It was inside the words" (178). The dictionary's language contains meaning that Robert cannot access, and the effect is to suggest there is something secret and incomprehensible about the female body, and the pregnant body in particular. Pregnancy and influenza can be read as strange doubles: both involve another living being hidden inside the body, and both induce "illnesses"; but whereas one produces new life; the other causes death.

The female body and feminine behaviors are signs of danger and sickness in *Swallows*, and so Elizabeth's affectionate bonds with her family must be recuperated from these negative connotations if they are to signify sympathy and family harmony as well. That is, the novel insists that she did not catch flu from her maternal behavior toward Bunny so that it can finally affirm her openness in relationships with other people (albeit in a qualified way). But physical contact and sympathy work differently for James. His physical demonstrations of affection are decisively more masculine than the kisses and hugs Elizabeth and Irene are so fond of bestowing, and they are accompanied not by mutual understanding and sympathy but by misunderstanding and miscommunication:

[He] put his arm rather awkwardly around Robert's shoulder. Together they paced, slowly, and without reason, from one end of the library to the other. After

a time Robert began to feel the weight of his leg. He had only to say something about it and his father would stop, of course. But that would have meant giving in—admitting that there was something the matter with him. [...]  
And so long as neither of them spoke, Robert could imagine that he knew what was going on in his father's mind; that they understood each other. But to have his father turn on him and say, 'These things happen to everybody, sooner or later. We have to expect them,' was altogether shocking. (145-147)

Here, physical proximity only emphasizes the emotional distance between father and son—James does not even notice Robert's discomfort, and Robert contrives to keep it that way. The codes of masculinity, which require Robert to stifle his complaints and downplay his disability, prevent rather than foster sympathy between males. Only in silence can they imagine a bond of sympathy between them; as soon as James speaks, Robert realizes how little they understand each other. In this scene, however, the source of the sense of foreboding is not the possibility of contracting influenza, but the possibility of Elizabeth experiencing complications during childbirth. The barriers that James and Robert put up prevent real communication, but they also push the risk of communicating flu germs into the background.

Elizabeth's death changes the relationship between James and Robert, as becomes apparent in the final section of the novel when a similar moment is narrated from James's perspective:

But there was comfort at least in Robert's company, and in resting his arm on Robert's shoulders. Robert belonged to him. James could feel that in the way they walked together. They were of the same blood. (265-266).

James imagines that they are "of the same blood" in more than just the sense of being biologically related—he means that they are constitutionally similar to one another, a relation he does not share with Bunny. The image of shared blood also suggests a bodily sort of intersubjectivity between James and Robert, similar to that exhibited by Elizabeth

and Bunny when they both feel the urge to sneeze. It is not sympathy in the sense of a shared understanding—James knows that he cannot make Robert understand what he has been through since Elizabeth’s death, and he also knows that Robert is “growing up in a later and more complicated world” that James cannot fully comprehend (266). Even the physical contact between them is not mutual—by “resting his arm on Robert’s shoulders,” James seeks support and solace from his son, rather than trying to provide those things for him. The father/son relation momentarily reverses itself—though both men are physically weak, recovering from influenza, and both are grieving, it is Robert who displays the greater resiliency. The kind of intersubjectivity imagined in this scene is one in which people may share blood and strength without necessarily sharing experience or consciousness. The boundary between James and Robert does not disintegrate, but it is permeable—though they cannot fully inhabit each others’ minds through a sympathetic bond, they can derive comfort from their unspoken exchanges, and for James at least, this is enough.

### ***Pale Horse, Pale Rider***

While *Swallows* envisions a process of exchange across clearly bounded bodies, *Pale Horse, Pale Rider* allows us to imagine a more radical kind of exchange in which these boundaries break down and bodies are no longer distinct from one another. All bodies, sick and well, male and female, fragmented and whole, are potentially hybrid; all are “monstrous” and already marked by death; such is the constitutive condition of modernity. The modern body is abject in the Kristevan sense—it “does not respect borders” but is “the in-between, the ambiguous, the composite” (*Powers of Horror* 4).

*Pale Horse, Pale Rider* expresses anxiety about those elements—such as war and disease—that threaten to break through the borders of the body and to dismantle the human subject, but ultimately it envisions the modern body as a product of these threats. Miranda's body becomes a composite of organic and inorganic fragments, located in the liminal space between life and death. This resistance to the myth of the whole, coherent body is especially critical given that *Pale Horse, Pale Rider* was published in 1939, on the eve of World War II, in which the body becomes a site of ideological as well as physical violence.

Influenza is a more apt trope for exploring these different conceptualizations of the body than Porter could have known in 1939. Virus biology lends itself particularly well to images of hybridity and liminality. For viruses occupy a liminal state between living and non-living: composed primarily of the same nucleic acids found in our own cells, they nevertheless cannot reproduce without the help of a host organism. Lacking ribosomes, mitochondria, and all other organelles, they require the complex cellular machinery of their host to synthesize their proteins and replicate their DNA or RNA. Viruses insert their own genes into the DNA of the host cell, effectually creating a hybrid genome (Barry 98-100). The virus, then, is a kind of being that is both within and alien to the body. By enmeshing themselves within a host organism and co-opting its components, viruses erode the distinction between self and other as separate bodies.

The pathology of the 1918 strain of influenza also makes it especially apt for examining fragmented bodies and divided subjects. H1N1 tended to strike young, healthy adults the hardest, while a typical flu strain is most dangerous for infants, the elderly, and people with weak immune systems (Barry 238-39). One explanation for this

pattern is that the flu tended to spread quickly in military camps, in which close quarters led to a rapid transfer of germs. Yet the flu pathology itself also played a role—the 1918 strain triggered cytokine storms, an overreaction of the immune system that can cause death. Thus, young, healthy people could potentially experience a stronger immune response upon exposure to the virus; this sheds light on their increased susceptibility and higher death rates (Barry 246-50). The 1918 flu, then, also serves as an illustration of how an apparently healthy, coherent body could become fragmented and internally divided—the previously-integrated immune system ends up destroying the body it is designed to protect.

Researchers in the 1930s had a much more limited understanding of the flu virus and only a Mendelian understanding of genetics, so Porter would not have had access to this kind of knowledge about virus biology or flu pathology. Nevertheless, her work displays a prescient sense of the complexity, multiplicity, and liminality that characterized not just medical understandings of biological systems, but also other modernist discourses in the twentieth century. Though she wouldn't have known how viral infection hybridizes a cell's genome, she would have been aware of modernist conceptualizations of the human subject as a fragmented, hybrid, and self-contradictory being. And she might have been aware of a similar trend in scientific discourse, which began to see complexity and liminality in place of autonomous wholes. Max Delbrück recalls, in a 1980 interview, the impact of quantum mechanics on twentieth-century biology, the realization that “you could look at a living organism either as a living organism or as a jumble of molecules.” Niels Bohr wrote in 1933, “We cannot even tell which atoms really belong to a living organism, since any vital function is accompanied

by an exchange of material” (458). In the 1930s scientists and writers alike belonged to a culture that was gradually beginning to imagine internal division, exchange, and shifting borders in place of organic, bounded wholes.

Adam, twenty-four years old, healthy and golden and strong, initially appears to be such an organic, bounded body, and is thus an ideal victim for both the flu and the war. He seems to be the quintessentially stable subject whose body has no disarticulated parts: he is “all olive and tan and tawny, hay colored and sand colored from hair to boots” (196). Adam claims that he has “never had a pain in his life that he [can] remember” (198). He is the foil to Miranda: her body, unlike his, has always been compromised. From the beginning of the story Miranda suffers from early flu symptoms, and her life up to this point has had no shortage of the pains, illnesses, and injuries that Adam has thus far dodged. Physical descriptions of Adam are far more prevalent in the novel than those of Miranda—we learn that he is “tall and heavily muscled in the shoulders, narrow in the waist and flanks,” that Miranda tells him “how squish he [is] looking in his new soldier suit,” that “his eyes [are] pale tan with orange flecks in them, and his hair [is] the color of a haystack when you turn the weathered top back to the clear straw beneath” (197-99). This relentless masculine health and good looks are an important part of what attracts Miranda to Adam—she finds this wholeness desirable, if incomprehensible.

Even at the peak of good health, however, Adam has already been claimed by death—Miranda cannot even conceive of him surviving the war. Listening to him speak casually about sapping parties, she thinks that he is “pure [...] all the way through, flawless, complete, as the sacrificial lamb must be” (224). Miranda describes him as a “monster”—for even purity is monstrous, indelibly marked with death. But “instead of

being horrified at this monster, she approved his monstrous uniqueness” (198). After her illness and recovery, Miranda uses the same term in reference to herself, thinking, “The body is a curious monster, no place to live in, how could anyone feel at home there? Is it possible I can ever accustom myself to this place?” (257). The repetition of this word suggests that Adam and Miranda are not only foils, but also doubles, much more alike than they initially appear. The difference between Adam’s whole, integrated body and Miranda’s frail, illness-prone one is not absolute, for both bodies are mutable, unfamiliar, and vulnerable.

The flu virus itself is one point of exchange between Miranda and Adam. Unlike *Swallows*, which ultimately absolves the family of any responsibility for Elizabeth’s illness and death, *Pale Horse, Pale Rider* implies that it is contact with Miranda that causes Adam to fall ill. His affectionate behavior, holding and kissing her during her bout with the flu, has far more dire consequences than similar behaviors do in Maxwell’s novel. The transmission of the virus is figured in one of Miranda’s fevered dreams: she sees herself stepping between Adam and a whizzing arrow, and over and over again the arrow passes through her body and kills him. This dream has been interpreted by some critics as expressing Miranda’s sense of guilt over exposing Adam to the illness that will eventually kill him,<sup>3</sup> but in fact I think this dream is important for establishing Miranda’s innocence, rather than guilt. The arrow, like the virus, passes from her body into his, and it leaves her alive while killing him. Yet the perpetrator of the violence is clearly not Miranda, but some unknown, invisible archer. Without this dream, one might be tempted to read the novel as a story about sexual contamination, in which a wholesome young man becomes romantically involved with an unwholesome young woman, with tragic

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<sup>3</sup> Cf. Thomas Walsh, “The Dreams Self in ‘Pale Horse, Pale Rider’”

results. The arrow image, however, suggests that contagion is not a moral issue and that its vector is not female impurity. Adam's name invites us to read his illness and death as a retelling of the fall from a prelapsarian paradise, but this retelling evacuates the fall of its moral and traditionally gendered implications.

Other moments in which the boundaries of bodies are crossed are equally troubled. One particularly violent example of this would be the mechanics of battle—the bayonet or bullet, acting as an extension of one soldier's body, enters another soldier's body, injuring or killing him. Another occurs early in *Pale Horse, Pale Rider* when Miranda goes to the hospital to visit the wounded soldiers. Meeting one who is particularly bitter and quiet, Miranda thinks, "It is like turning a corner absorbed in your painful thoughts and meeting your state of mind embodied, face to face... 'My own feelings about this whole thing, made flesh'" (193). The idea that another person might embody one's own interior state, that another body could manifest one's own feelings, might seem to be a promising moment of communion. But Miranda is troubled by the encounter, vowing not to return to the hospital. Contagion, battle, and even the kind of sympathy that elicits a physical response (which signaled communion and shared strength in *Swallows*) all suggest an invasive and even violent boundary-crossing in *Pale Horse, Pale Rider*.

Despite this anxiety over bodily exchanges, however, the novel imagines a kind of modern body that is hybrid, markedly fragmented, and purposefully incomplete. Illness renders Miranda's own body strange and unfamiliar to her, a disarticulated inventory of parts. At the most critical stage of her illness, she is surprised to recognize the body close to death as her own:

Pain returned, a terrible compelling pain running through her veins like heavy fire, the stench of corruption filled her nostrils, the sweetish sickening smell of rotting flesh and pus; she opened her eyes and saw pale light through a coarse, white cloth over her face, knew that the smell of death was in her own body; and struggled to lift her hand. (255)

Miranda returns to her body from her dreams in bits and pieces: first her veins and nose, then her eyes, and only then does she realize that the “rotting flesh” from which this smell emanates is her own. It is a direct confrontation with death, with her own abjection. When the nurse gives her another injection of medicine, Miranda tries to say, “Let me go, let me go,” but hears “only incoherent sounds of animal suffering” (255). In this moment, the categories of human and non-human, subject and abject, collapse<sup>4</sup>. Even when she is out of danger, Miranda finds it difficult to perceive her body as anything but fragmented and alien: ““Can this be my face?’ Miranda asked her mirror. ‘Are these my own hands?’ she asked Miss Tanner, holding them up to show the yellow tint like melted wax glimmering between the closed fingers” (257). The body is no longer a natural manifestation of the self, but something more unfamiliar and inassimilable.

Preparing to return to her old life after her recovery, Miranda makes a list of clothing, makeup, and other items she will need in order that, as she phrases it, “no one need pity this corpse” (263). The list includes lipstick, perfume, cold cream, and apricot powder, and Miranda anxiously asks if she will need eye shadow too. Tim Armstrong has suggested that while war and commodity capitalism in the modernist era produce, and depend upon, a fragmentation of the body, this fragmentation is always accompanied by the promise of a “restored integrity” in the future (58). *Pale Horse, Pale Rider* rewrites

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<sup>4</sup> See Barbara Creed, *The Monstrous Feminine*, p. 8, on abjection. “In general terms, Kristeva is attempting to explore the different ways in which abjection works within human societies, as a means of separating out the human from the non-human and the fully constituted subject from the partially formed subject.”

this narrative, revealing the hollowness of such a promise. For Miranda's plan to restore her own bodily integrity through clothes, makeup, and a walking stick represents only the weakest and most perfunctory of attempts. Mary Titus points out that many of Miranda's clothing requests invoke the term "without"—gauntlets *without* straps, stockings *without* clocks—a preference Miranda's friends gently mock. This preference is significant, Titus argues, because even when Miranda re-enters the world costumed as a whole body, her appearance will "remain marked by an absence; she is incomplete, external lack pointing to internal lack" (166). Miranda's stockings without clocks, her walking stick, and the makeup she will use to make lips look like lips and eyes like eyes create the impression of a body reconstructed through fragments of clothes, limbs, and features.

The body is not only fragmented, but also poised on certain borders—between life and death, or human and non-human, or home and alien territories. This borderline quality is evident in one of Miranda's dreams, when she is closest to death:

Silenced she sank easily through deeps under deeps of darkness until she lay like a stone at the farthest bottom of life, knowing herself to be blind, deaf, speechless, no longer aware of the members of her own body, entirely withdrawn from all human concerns, yet alive with a peculiar lucidity and coherence; all notions of the mind, the reasonable inquiries of doubt, all ties of blood and the desires of the heart, dissolved and fell away from her, and there remained of her only a minute fiercely burning particle of being that knew itself alone, that relied upon nothing beyond itself for its strength; not susceptible to any appeal or inducement, being itself composed of one single motive, the stubborn will to live. This fiery motionless particle set itself unaided to resist destruction, to survive and to be in its own madness of being, motiveless and planless beyond that one essential end. Trust me, the hard unwinking angry point of light said. I stay. (253)

This "point of light" clearly represents of Miranda's "will to live," but problems arise when we pursue this meaning. For Miranda *doesn't* want to live—not consciously, as is evident from her grief at waking up, and not unconsciously either. In her dream, she resists leaving the world of the dead, saying, "Oh, I must go back!" (255). The difficulty,

then, is locating this will to live—is it part of Miranda’s psyche, or does it lie somewhere outside of it?

The image of a particle calls to mind the microscopic vectors that caused Miranda’s illness—the virus itself. If it is difficult to conceive of a complex being such as Miranda, full of ambivalent and contradictory emotions and desires, as essentially being composed of “one single motive, the stubborn will to live,” this might not be a bad way to describe the virus. Essentially a capsule of nucleic acids, the virus’s sole purpose is to ensure the continued existence of its genome by replicating itself. The particle, with its insistence on life at all costs, corresponds to the evolutionary (and non-human) “will to live” that characterizes all life forms in a post-Darwinian understanding of biology. A particle that is “motiveless,” “planless,” and governed by “madness” sounds like a non-human germ, and readers need not be familiar with the specifics of virus propagation to recognize their resemblance. The image places subjectivity to the side, locating within the human a non-human, non-rational, and even ruthless biological impulse toward survival that it shares with this microscopic almost-life form. Of course, the similarities between the fiery particle and the virus are not limitless—the virus is not nearly so autonomous as the particle is described, requiring as it does the host body. The dream image is a complex one, and its symbolic value cannot be pinned down to either the essence of Miranda or the essence of the flu, but instead occupies a liminal state, oscillating between these two beings.

The world of the living seems unfamiliar to Miranda when she recovers, and she sees it

with the covertly hostile eyes of an alien who does not like the country in which he finds himself, does not understand the language nor wish to learn it, does not mean to live there and yet is helpless, unable to leave it at his will. (257-258)

Miranda sees herself as a hybrid, neither fully dead nor fully alive but instead with “one foot in either world,” and as such she does not belong in the living world but must attempt to “pass” in it anyway. This liminal state, between life and death, parallels the virus’s liminal state between living and non-living. The resemblance is, of course, a limited one, for “dead” and “non-living” are two distinct, non-equivalent categories. But the point remains: the body is a hybrid thing, inhabited by multiple and sometimes contradictory states of being. Miranda is an ineluctably human character, a dreaming, feeling, struggling, sympathetic human being. But she is also inhabited by something excess, something outside the human subject, outside life itself, the abject within her.

The hybrid bodies envisioned in *Pale Horse, Pale Rider* take on a new political valence when read in the context of the National Socialist Party’s rise to power in Germany in the 1930s. During this decade, Porter spent several years in Europe, including about five months in Germany (Unrue 132). It is difficult to determine exactly how sophisticated her political consciousness was at that point: while a couple of her later works—*Ship of Fools* and “The Leaning Tower”—seem to be clearly anti-Nazi (and, less promisingly, rather anti-German as well), some critics suggest her professed anti-Hitler sentiments are more a retrospective construction of the 1940s than an astute contemporary reading of 1930s politics (Austenfeld 31-2). Nevertheless, Porter’s letters from the 1930s seem to indicate some nascent opposition to Nazi ideology and awareness of the potential for war. In a 1933 letter to her father, Porter writes:

Did I tell you I met Goering, Hitler’s right hand man, at a dinner party in Berlin last year, and he talked with me a whole evening about what Hitler was going to

do, and I was skeptical, and thought, it is just politician's boasting. But it is all coming true, frightfully. Here, people go about saying that America may go to war with Japan, and if so, maybe to war with England, too, and it is too plain that this would be pleasant news to a great many people. (Bayley 93)

In other letters, Porter's response to Nazi Germany seems to be a primarily affective one—she expresses distaste for “a city with Hitler flags waving from every window—by order—a nasty picture of Hitler glaring at us from every taxi and shop and hotel window” (Bayley 115). It seems clear, in any case, that early in the 1930s Porter was aware of the dangers of Nazism and was already beginning to formulate her own anti-fascist position. Hence it is reasonable to consider *Pale Horse, Pale Rider* in light of the impending world war.

Physical integrity and purity represent a profoundly integral part of Nazi ideology. Harold B. Segel, in *Body Ascendant: Modernism and the Physical Imperative*, has linked this ideology to what he calls “the modernist cult of the physical,” and through the rhetoric of Hitler and other Nazi writers he traces an obsession with creating a mythology of the whole, strong, Aryan body. This mythology relies on an opposition between the Jew, portrayed as weak, effeminate, and parasitical, and the German, who is physically fit, manly, and pure of blood (242-251). The German body, in this mythos, is the site of contestation: in Hitler's writing, Jews present a sexual threat to these bodies, and physical training and sports serve as the means of warding off this threat (245-257). The importance of athleticism for the Nazis also lay in its translatability to battle—it was perceived as “a form of preparedness for combat” (249). Thus, anti-Semitism, the cult of the physical, and the glorification of battle became intertwined in 1930s Nazi discourse. Given this context, I suggest that *Pale Horse, Pale Rider* undermines the myth of the whole, coherent, and bounded body not just for the myth's generally pernicious effects in

excluding people who are ill, injured, or in some other way deviant from this ideal, but also for its very specific role in Nazi ideology. The novel exposes the violence that lies at the heart of this ideology—for the supposedly whole, masculine bodies are condemned to death in battle, while the bodies deemed fragmented or incoherent are condemned to death by massacre. Porter rejects this dichotomy by representing the body as always fragmented and incoherent; and though this may be cause for anxiety, it is not cause for demonizing or stigmatizing some bodies.

### **Influenza Then and Now**

Though O’Hara, Maxwell, and Porter all revisited the Spanish flu pandemic within the same five-year period (1935-1939), each envisioned influenza in a different way. In “The Doctor’s Son,” flu is a harbinger of modernization; in *They Came Like Swallows*, it provides an entry into family dynamics and relationships among bodies and selves; and in *Pale Horse, Pale Rider*, illness and the pathogens that cause it call for a reevaluation of the human body and the human subject. For all their differences, however, the three texts all imagine the pandemic in terms of the problems of modernity. The temporal overlap of the armistice and the pandemic makes it impossible to dissociate these two events from each other, and if one had to pick a single point in the twentieth century as definitive of the transition from residual Victorian idealism to modernist anxiety, 1918 would be a good candidate. “The Doctor’s Son” imagines a modern era in which the old values and mores disintegrate with questionable replacements. Personal relationships give way to anonymity and mechanical efficiency in the health care system, and this is emblematic of most trades in the heyday of Fordism. Maxwell’s novel ends

with an acknowledgement that it is “a later and more complicated world” than those who grew up before the war have known. But it imagines the post-1918 era in a more optimistic light—when James moves away from Elizabeth’s coffin in the novel’s final sentence, the image suggests that people might be able to step away from the massive destruction and death of the war and pandemic, and restore life to the modern world. *Pale Horse, Pale Rider* is closest to, and most anticipatory of, World War II, and its modern landscape is a bleak and grey one: like Eliot’s waste land, the street into which Miranda steps out in the novel’s concluding passage is marked by “dazed silence” and “the dead cold light of tomorrow” (264). If modernist writers before O’Hara, Maxwell, and Porter had not explicitly dealt with Spanish flu, these three nevertheless convincingly demonstrate that the pandemic had an inescapable impact on the modern era and on modernist understandings of the world.

The flu acts as metaphor for the dehumanizing and denaturalizing aspects of modern life, which take on many forms. In “The Doctor’s Son” it is the boundary between human community and faceless crowd that is at stake, as mass illness occasions a depersonalized kind of medical practice. Individuals and families become anonymous and undifferentiated in the age of mass production and consumption, and the public health procedures during the pandemic are a microcosm of the larger dehumanizing trends of industrialization and urbanization. *They Came Like Swallows* is more invested in affirming humanism, but it can only do so by deflecting certain anxieties about relationships among people in modern times. The novel acknowledges the parallels among sympathy, affection, and contagion, suggesting that human contact is perilous or untenable at this moment in history. These are precisely the concerns that the novel must

bracket off to end optimistically, even in the wake of the flu and the war. Finally, in *Pale Horse, Pale Rider*, the flu appears as a metaphor for the constitutive liminality of the body itself, which is inhabited by the human and non-human, subject and object, self and other. The story undermines the idea of human subject as a natural category by revealing how the concept fails to account for the internal division and excess present in every conventional body. Influenza is a trope for the dehumanizing, denaturalizing, and disjunctive forces of modernity that elicit conflicted responses from modernist writers.

The Spanish flu pandemic haunts the twenty-first century imagination too: memories of 1918 echo in our collective fears over infectious diseases, such as SARS and swine flu, and over the specter of bioterrorism. The past five years have witnessed major breakthroughs in flu research. In 2005 researchers completed the DNA sequence of the 1918 virus, registering evidence that the strain was derived from an avian flu (Taubenberger 889). Scientists used the reconstructed virus to infect mice and macaques, investigating the virulence of this particular strain. They produced evidence that a combination of genes, rather than a single one, contributed to the virus's lethality, and that the virus triggered an atypical and dangerous immune response in the host, characterized by the sustained expression of chemokine and cytokine genes (Kash 578; Kobasa 321). In 2008 researchers discovered antibodies in the blood cells of pandemic survivors ninety years after their exposure; these antibodies "could serve as potential therapeutics for a re-emergent 1918-like virus" (Yu 535). These developments offer a promising entry into better understandings of viruses and potential ways to combat the next pandemic, but they also pose their own dangers. Critics of this kind of research have pointed out the danger that the reconstructed virus might escape a lab and spread, or that

bioterrorists might take the published gene sequence and recreate the virus themselves (Bubnoff 794-5). In the age of biological weapons, the fears voiced by characters such as Uncle Wilfred of *Swallows*, who insists that the flu was purposely spread by Germans in U-boats, seem eerily prescient. The 1918 flu, which probably emerged in the U.S., was not the result of intentional wartime maneuvers, but the next pandemic might be.

Reading the works of O'Hara, Maxwell, and Porter, one is struck by the insistent links between flu and war, but none of these stories lend support to the tendency to use warlike discourse to talk about the global spread of disease. The 2009 emergence of "swine flu" is a case in point: because the virus was first detected in Mexico, fears over its spread have become intertwined with racist ideas about Mexicans and intolerance of illegal immigrants (Alexander). But fictional representations of the 1918 pandemic give the lie to this kind of ideological undercurrent, because it presumes purity where there is none, and conflates infectious disease with moral contamination in a way that authors like Porter have exposed and dismantled. Reactionaries might respond to the epidemic by closing borders and demonizing sick people, but such a response creates artificial polarities and relies upon a myth of pure, bounded individual and national bodies—a myth that is neither scientifically nor ethically sound.

## WORKS CITED

- Alexander, Brian. "Amid swine flu outbreak, racism goes viral." *MSNBC*. 1 May 2009. <<http://www.msnbc.msn.com/id/30467300/>> Accessed 21 May 2009.
- Armstrong, Tim. *Modernism, Technology, and the Body: A Cultural Study*. Cambridge: Cambridge University Press, 1998.
- Austenfeld, Thomas Carl. *American Women Writers and the Nazis*. Charlottesville: University Press of Virginia, 2001.
- Barry, John M. *The Great Influenza: The Epic Story of the Deadliest Plague in History*. New York: Penguin Group, 2004.
- Bawer, Bruce. "States of grace: the novels of William Maxwell." *The New Criterion* 7:9, 1989. 26-38.
- Bayley, Isabel, ed. *Letters of Katherine Anne Porter*. New York: Atlantic Monthly Press, 1990.
- Bohr, Niels. "Light and Life." *Nature* 131. 1933. 457-459.
- Bubnoff, Andreas von. "The 1918 flu virus is resurrected." *Nature* 437. 2005. 794-795.
- Centers for Disease Control and Prevention. "Key Facts About Avian Influenza (Bird Flu) and Avian Influenza A (H5N1) Virus." <<http://www.cdc.gov/flu/avian/gen-info/facts.htm>> Accessed 20 May 2009.
- Creed, Barbara. *The Monstrous-Feminine: Film, Feminism, Psychoanalysis*. New York: Routledge, 1993.
- Crosby, Alfred W. *America's Forgotten Pandemic: The Influenza of 1918*. Cambridge: Cambridge University Press, 1989.
- Crowe, James. "2009 Flu Lecture." PowerPoint presentation. Vanderbilt University. 12 March 2009.
- Davis, Barbara Thompson. "Katherine Anne Porter." *Paris Review* 29. 1963. 1-30.
- Delbrück, Max. Interview by Carolyn Harding. Pasadena, California, July 14-September 11, 1978. Oral History Project, California Institute of Technology Archives. Retrieved 29 May 2009 from the World Wide Web: [http://resolver.caltech.edu/CaltechOH:OH\\_Delbruck\\_M](http://resolver.caltech.edu/CaltechOH:OH_Delbruck_M)

- Fussell, Paul. *The Great War and Modern Memory*. New York: Oxford University Press, 1975.
- Kash, John C. et al. "Genomic analysis of increased host immune and cell death responses induced by 1918 influenza virus." *Nature* 443. 2006. 578-581.
- Kobasa, Darwyn et al. "Aberrant innate immune response in lethal infection of macaques with the 1918 flu virus." *Nature* 445. 2007. 319-323.
- Kristeva, Julia. *Powers of Horror: An Essay on Abjection*. New York: Columbia University Press, 1982.
- Laurence, William L. "Common Cold Laid to 2 Agents United." *New York Times*. 17 June 1933: A1.
- Madara, Bruce C. "Recollections of the Flu Epidemic of 1918" *John O'Hara Journal* 2:1, 35-40. 1979
- Maxwell, William. *They Came Like Swallows*. New York: Harper & Brothers, 1937.
- O'Hara, John. *The Doctor's Son and Other Stories*. New York: Harcourt, Brace and Company, 1935.
- Porter, Katherine Anne. *Pale Horse, Pale Rider: Three Short Novels*. New York: Harcourt, Brace and Company, 1939.
- Segel, Harold B. *Body Ascendant: Modernism and the Physical Imperative*. Baltimore: Johns Hopkins University Press, 1998.
- Suddath, Claire. "A Brief History of the Flu Vaccine." *Time*. 8 December 2008. <<http://www.time.com/time/nation/article/0,8599,1864920,00.html>> Accessed 20 May 2009.
- "Swine Flu (AH1N1 Virus)." *New York Times*. <[http://topics.nytimes.com/top/reference/timestopics/subjects/i/influenza/swine\\_influenza/index.html?scp=1-spot&sq=swine%20flu&st=cse](http://topics.nytimes.com/top/reference/timestopics/subjects/i/influenza/swine_influenza/index.html?scp=1-spot&sq=swine%20flu&st=cse)> Accessed 20 May 2009.
- Taubenberger, Jeffery et al. "Characterization of the 1918 influenza virus polymerase genes." *Nature* 437. 2005. 889-893.
- Titus, Mary. *The Ambivalent Art of Katherine Anne Porter*. Athens: University of Georgia Press, 2005. 161-66.
- Unrue, Darlene Harbour. *Katherine Anne Porter: The Life of an Artist*. Jackson: University Press of Mississippi, 2005.

Voight, Ellen Bryant. "Angel Child." *A William Maxwell Portrait: Memories and Appreciations*. Ed. Charles Baxter, Michael Collier, and Edward Hirsch. New York: W.W. Norton & Company, 2004.

Walsh, Thomas. "The Dreams Self in 'Pale Horse, Pale Rider.'" *Katherine Anne Porter*. Ed. Harold Bloom. New York: Chelsea House Publishers, 1986.

Yu, Xiaocong et al. "Neutralizing antibodies derived from the B cells of 1918 influenza pandemic survivors." *Nature* 455. 2008. 532-53