Art, Science, and Sacrifice in the *Experiments* of Joseph Wright and Shelagh Stephenson

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Shelagh Stephenson's *Experiment with an Air Pump,* a play first produced in 1998, prompts a number of comparisons. In alternating between one family group at the turn of the eighteenth century and another at the turn of the twentieth, it recalls Tom Stoppard's *Arcadia* (1993), which juxtaposes family groups from 1809 and 1993 and also—like Stephenson's play-- features a female character whose passion for science began when she was just thirteen. Besides re-deploying the structure of *Arcadia,* Stephenson's play coincides with two others that explore the history of science by juxtaposing the present with the distant past: Timberlake Wertenbaker's *After Darwin* (1998) and *Oxygen* (2001), by Carl Djerassi and Roald Hoffmann, who are both renowned chemists. Just as importantly, Stephenson's *Experiment* belongs to a class of plays that dramatize the moral dilemmas of modern science,

plays that "raise questions," as one critic notes, "about the responsibility of the scientist and the nature or his or her pursuits" (Shepherd-Barr 3).[1] Had I world enough and time, I might consider Stephenson's play within the context of all these other plays about science. But since the purpose of this volume is to consider how the artists and writers of our time have been re-presenting the culture of the eighteenth century, I will focus on what Stephenson does with the painting so conspicuously featured in her play: Joseph Wright's *Experiment on a Bird in the Air Pump,* first exhibited in 1768.[2].

To compare the play with the painting is first of all to see two kinds of translation. One is the shift from painting to language epitomized by the opening speech of the play, a striking specimen of theatrical ekphrasis in which Ellen, a geneticist of our own time, vividly explains how this eighteenth-century painting has captivated her ever since she first saw it as a girl of thirteen. For her it reveals the godlike power of science. Given its ring of candlelit chiaroscuro, its cast of

[1] They include Frederic Dürrenmatt's *The Physicists* (1962), Howard Brenton's *The Genius* (1983), and Caryl Churchill's *A Number* (2002).
[2] For a link to the painting on the website of London's National Gallery, see Wright. This site offers close-up views of all the details I discuss here.

characters ranging from the grey-haired lecturer to the anxious little girl beneath him, and its englobed white bird literally fluttering between life and death, the painting is inherently dramatic. But for Ellen, its drama springs from "the process of experiment and the intoxication of discovery," the daring of a scientist who spurns both "the dead hand of caution" and the quivering lips of sentiment, "the two small girls . . . terrified he's going to kill their pet dove." For Ellen, the essence of the painting is "the drama at the centre of it all," the shadows broken by "a stage set moon" and "flickering" candlelight, the glory of the *en*lightenment brilliantly revealed. "Who could resist," she asks, "the power of light over darkness?" (Stephenson, Prologue).

To read or hear this speech, however, is also to realize that its ekphrastic translation of the painting into words also entails another kind of *translatio* whereby the painting is borne across the centuries from Wright's era to ours. Unlike art historians, Ellen has no interest in recovering the original context of the painting or even in accurately identifying the imperiled bird, which is actually not a dove but "a luxury pet, a rare white cockatoo" (Daniels 40). She does not seem to know —

or care — that the air pump was invented by Otto von Guericke at Magdeburg in 1650, first built in England for Robert Boyle a few years later, and first used for animal experiments in 1659 (Schupbach 341). In other words, she does not know or care that the "experiment" depicted here is not a test of a hypothesis, not a daring venture into the unknown, but a demonstration of what had been known about air—and especially about its indispensibility to life—for nearly a hundred years.[3] By the 1760s, in fact, the air pump was commonly used as a means of entertainment.[4] But rather than ruminating on the cultural context of the painting or of the science it represents, Ellen reads it through the eyes of her own time, when feminism has liberated and empowered

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[3] The OED defines "experiment" in the scientific sense as "an action or operation undertaken in order to discover something unknown, to test a hypothesis, or establish or illustrate some known truth." While the very last part of the definition fits a mid-18th-century "experiment" with an air pump, none of the passages cited from before the date of Wright's painting uses the word in this sense.

[4] As a schoolmaster in Cheshire in the late 1750s, Joseph Priestley taught his students to use an air pump (among other instruments) "and by entertaining their parents and friends with experiments . . . I considerably extended the reputation of my school." (*Memoirs* [1710] qtd. Nichloson 112).

women to do things inconceivable for any of the three females Wright depicts. None of them radiates anything like Ellen's passion for scientific discovery. While the young woman at left looks back at the face of the young man next to her, one of the two young girls at right hides her face, and though the other looks up at the bird, her face reveals nothing but fear and pain. In dismissing their anxieties about the fate of the bird and wholly identifying with what she takes to be the investigative heroism of the scientist, Ellen defines her character as one devoted to the advancement of science above all else. Though she briefly hesitates to take a new job in genetic research because her husband has moral qualms about experimenting with embryos, or pre-embryos, she ends up taking the job because it is"too exciting" to resist. It literally makes her heart. "beat faster" (Stephenson II:4).

Yet if Ellen seems to idolize science, the play as a whole is hardly indifferent to the ethical questions raised by Wright's painting—to questions about the sacrifices that science may demand, even for the sake of simply dramatizing a long-established truth. While juxtaposing one set of characters from 1799 with another from 1999, the play also

contraposes--within each group-- two views of science. In the Prologue, an experiment just like the one Wright depicts is conducted by Fenwick, who is both a scientist and the father of twin girls, Maria and Harriet, in the family group of 1799. Having named the bird for her fiancé Edward, who is off in India, Maria weeps with dismay at the prospect of its imminent suffocation. But she is mocked by Harriet, who thinks Edward has the brain of a bird ("they do have a similar intellectual capacity," she says) and scorned by Armstrong, a young medical student who tells Fenwick that women should be kept "away from science" (Stephenson, Prologue). When the bird flutters out unharmed at the end of the experiment, Maria's fears are made to seem irrational as well as irrelevant. In Wright's painting, the father points upward to show his anxious little girl that the scientist's left hand is about to turn the stopcock at the top of the glass bowl and thus admit the air that will revive the bird.[5] Stephenson's Prologue likewise seems to say that we have nothing to fear from experiments such as this.

[5] This "at least . . . seems to the message of the horrified girls' father's comforting gesture" (Daniels 40).

On the other hand, the play as whole stops far short of endorsing such optimism. In a radical switch of gender roles, the voice of resistance to unbridled scientific research in 1999 is that of Ellen's husband Tom, a newly unemployed lecturer on English literature. When Ellen tells him that the prospect of a new job in genetic research makes her heart "beat faster," he observes that her heart is "not just a pump," which tellingly blurs the line between human beings and machines (the heart *is* a pump, after all) even as it implicitly questions the notion that science transcends all human feeling and moral qualms. Ellen herself disbelieves that science is "morally neutral" (Stephenson II: 4). While Kate—a younger scientist representing a medical firm—wants her to conduct genetic experiments on pre-embryos, Tom's misgivings about the project lead Ellen into "an ethical crisis" that Kate cannot understand because, as Ellen says, Kate has "a limited imagination" (Stephenson I:2). Kate cannot imagine anything wrong with using discarded embryos to identify genes for various diseases like cancer and schizophrenia, for such diseases might be eradicated by "gene therapy in the womb". But whether or not these therapeutic gains can justify

working with embryos, would the findings of foetal diagnostics justify terminating a pregnancy, as Kate suggests? Schizophrenia, Tom argues "is not a finite quantifiable thing" but a state of mind that can range from great creative power to paralyzing confusion (as in Joyce's daughter Lucia) and that cannot just be "swat[ted] like a fly" (Stephenson II: 4). Furthermore, while scientific research ranges all the way from studies of fruit flies to the genesis of nuclear weapons, Tom's question about whether or not Kate would have worked on "developing the atomic bomb" -- a question she does not answer – reminds us that the science of our own time has played a major part in the sacrifice of human beings. In November 1947, two years after the bomb that he and his team developed at Los Alamos, New Mexico killed over 200,000 people in Hiroshima and Nagasaki, J. Robert Oppenheimer declared: "In some sort of crude sense which no vulgarity, no humor, no overstatement can quite extinguish, the physicists have known sin; and this is a knowledge which they cannot lose." (Oppenheimer)

Killing hundreds of thousands of people is a long way from experimenting with embryos or with the life of a single bird – even a rare cockatoo. According to one leading moral philosopher of the eighteenth century, in fact, there was nothing wrong with the latter. While Adam Smith firmly believed that everyone feels "pity or compassion . . . for the misery of others," he thought shooting a bird the "most innocent" act conceivable, while shooting a man was "the most blameable" (Smith 11, 109). Since this point comes from a book first published in 1759 and probably known to Joseph Wright by the time he painted *Air Pump*, [6] can we then infer that eighteenth-century morality—insofar as it can be homogenously reified—wholly condoned the killing of birds? If so, how can we explain the opinion of James Ferguson, the travelling scientist whose demonstration of the air pump in 1762—in Wright's own town of Derby —may well have inspired his painting (Egerton 1990, 58)?[7] In the *Lectures* he published in 1760, Ferguson did not even condone *endangering* the life of a bird. For

[6] On the likelihood that Wright knew Adam Smith's *Theory of Moral Sentiments* as well as other works of the Scottish Enlightenment, see Graciano 92-98.
[7] On the promotion of science in Derby in the decades leading up to 1760, see Elliott.

demonstrations of the air pump he recommended a bladder or "lungs-glass" in place of a living animal because, he wrote, ,the possible suffocation of the latter "is too shocking to every spectator who has the least degree of humanity" (Ferguson 200). It is hard enough to reconcile this statement with Smith's, and harder still to reconcile it with Ferguson's admission that he himself used a bird in some of his experiments (Ferguson 206).

Possibly, therefore, the key to the moral meaning of Wright's painting may be found in a book published shortly before Ferguson's *Lectures* by a fellow scientist. In *The Young Gentleman and Lady's Philosophy* (1759), Benjamin Martin offers a dialogue between a university student and his younger sister, who—just like the girls in Wright's painting – cannot bear to see any living creature harmed by an experiment. Asked how she would feel to see her favorite linnet—a songbird-- killed by electric shock, she says, "I would not see it, nor suffer it for the World. . . . Why should you take Delight in such cruel Experiments?" (Martin 311). Her brother replies with an argument very

like the one that Stephenson's Kate uses to justify experiments with embryos. Were it not for such experiments, the brother says,

> Mankind would not be informed how far the Power of Nature could operate, and consequently, in many Cases, what could, or could not be done. Nay, the life of a Bird, or a Mouse, might probably save that of a Man, and therefore the Experiments tend rather to a good, than a bad End; tho' in Appearance they seem incompatible with our Reason, and more delicate Passions. Accordingly, therefore, I have prepared this little Titmose [a small bird] to be a substitute Victim for your Linnet, and you must not flinch to see it sacrificed on this Altar by electrical Fire. – I shall call my Servant in to be the Executioner." (Martin 311-12)

This is a much harder lesson than the one taught by the father in Wright's painting. While the father tries to comfort his girls by pointing up to the hand whose turning can—and presumably will—revive the suffocating bird, the brother asks his sister to *accept* the death of the bird for the sake of what may be learned about Nature for the benefit of humankind. But she is hardly persuaded. Dismayed by the

electrocution of the bird, she wants to see no more of such experiments (Martin 311). She can hardly bear to watch dispassionately as a bird is "sacrificed on [the] Altar" of science.

This chilling metaphor is just one of the things that complicates the tutorial here. While the dialogue implies that girls are too sentimental to be scientific, it also invests science with something like the power of religion. Shelagh Stephenson finds this happening in our own time. "I think because there isn't religion any more" she has said, " . . . people look to science for answers" (qtd. Fleming 26). Though religion actually remains very much alive among the Muslims, Orthodox Jews, and evangelical Christians of our time, Stephenson has a point that leads us—as it led her-- back to Wright's painting. Like the older brother's sacrificial trope, Wright;s painting subtly shows us how, in the age of Enlightenment, science began to usurp the aura as well as the authority of religion.

To see how Wright makes the aura and authority of religion inform his representation of a scientific experiment, we must first consider the artistic traditions he conflates. As Ronald Paulson has observed, his

"original contribution is to combine the English conversation piece with the Caravaggist and candlelight tradition" (Paulson 190). A conversation piece was a group portrait of identifiable figures, typically members of an aristocratic family gathered for conversation in a well-furnished room or on the lawn of a country estate. Well before Wright painted the *Air Pump,* Hogarth produced such conversation pieces as *The Cholmondely Family* (1732) and *The Western Family* (1738), and the very first paintings that Wright exhibited in London -- at the Society of Artists Exhibition of 1765 -- included what he called "a Conversation Piece" that was probably his portrait of *James and Mary Shuttleworth with One of Their Daughters* (Egerton 1990, 44-45). But *Air Pump* is certainly not, as Egerton notes, " a conventional conversation piece" (1990, 58). It offers generic types rather than identifiable faces,[8] and in place of domestic décor such as teacups and silver trays, it features scientific instruments.

[8] The young couple at left have been identified as Thomas Coltman and Mary Barlow, who were married in 1769 and whom Wright portrayed as Mr and Mrs. Coltman in 1771 (Egerton 1990, 61, 72). Philip Bell thinks the meditative man seated at right resembles John Whitehurst, the Derby clockmaker whom Wright knew well and whose portrait he painted in 1782-83 (Egerton 1990, Plate 147; email to the author of 30 January 2013). Otherwise, as Nicholson notes, "we are quite at sea regarding the personalities in the *Air Pump*" (Nicholson 117).

The instruments command our attention, for they are depicted almost as carefully as the engraved pump in Benjamin Martin's guide to science (*Philosophy*) for young people (Martin Plate X). On the right side of the gleaming table rests a pair of hemispheric cups which are made to fit together and which—as first shown by Otto Guericke in 1657—cannot be pulled apart once the air is pumped out of the globe they form. Just under the right hand of the lecturer is the handle of the pump he has used to remove the air from the glass "receiver" containing the bird, and on top of the receiver –as already noted--is the stopcock used to let air re-enter the receiver. At left, the seated young man holds in his left hand—resting on the table-- a pair-cased verge watch with hour and minute hands visible.[9] In the center foreground, a large glass bowl glowing with the flame of the candle hidden just behind it holds a dark, irregular lump that is usually identified as a skull but has yet to be named or known for certain.[10] The stubborn indeterminacy of an object placed right before the candle in the very center of the foreground is just

[9] For information on these and other details on the instruments depicted here, I am grateful to Richard Kremer and Philip Bell (emails of 25 and 30 January 2013).

[10] In the audio commentary on the painting that can be heard on the National Gallery website, Jenny Uglow suggests that the lump may be a lung (Wright).

one example of the way in which this painting drapes the light of science—the light of empiricism and technology--with the shadows of mystery.

Why does Wright show the air pump lighted by no more than a candle and a bit of the clouded moon shining through the small window at upper right? Apart from alluding to the Lunar Society, so called because this provincial group of scientifically-minded men met "monthly on the Monday nearest the full moon" (Farrar 15), why did he did he not bathe the pump in daylight, as did (for instance) Charles Amédée van Loo just a few years later in his *Pneumatic Experiment* (1777)?[11] Egerton suggests that he used candlelight for the sake of "heightened drama" (Egerton 1998, 342). Quite apart from lighting, drama springs from the multiplicity of reactions stamped on the faces in this painting, as I shall more fully consider below. But given the way it had been used in earlier paintings, candlelight lends a religious aura to this one.

[11] Egerton notes that Wright used candlelight for his earlier painting of a scientific demonstration, *A Philosopher Giving a Lecture on the Orrery* (1766) because he needed shadows to depict a model eclipse (Egerton 1998, 342).

To be sure, candlelight had already been used for secular subjects. As Benedict Nicholson has suggested, Wright may have drawn the pose of the lecturer from Thomas Frye's *Figure with Candle,* a mezzotint of 1760 (Nicholson 43-44), and Wright himself had been painting "candlelights" since the early 60s, when—just about the time of George Romney's *The Artist's Brother James Holding a Candle* (1761)--he produced *A Girl Reading a Letter by Candlelight* (Egerton 1990, 49-50). But in *Three Persons Viewing the Gladiator by Candlelight* (1764-65), Wright begins to evoke the candlelit aura of such sacred paintings as Crijn Volmarijn's *Christ at Emmaus* (1631) and Georges de la Tour's *Nativity* (1644) (Nicholson 1968: 40, Paulson 190). In using candlelight for his scientific paintings—from the *Orrery* of 1764-66 to *The Alchemist* of 1771—Wright visually implies that the wonders of modern technology rival the miracles of Christianity. In these paintings, Nicholson observes, "the demonstrator's face is transfigured by light as though he were one of Christ's disciples witnessing the Breaking of the Bread" (Nicholson 1968, 52).

Besides evoking the candlelit aura of sacred paintings, the *Air Pump* reconstructs the traditional iconography of the bird. In secular paintings, birds commonly signify love, as in Jean-Baptiste Greuze's *Girl with Dead Canary* (1765), which Diderot construed as a the painting of a girl symbolically mourning the death of a love affair (Heffernan 53-54). In Wright's own *Mr. and Mrs William Chase* (ca. 1762-63), the pet parrot perched on the hand of the lady recalls the bird perched on the hand of the nubile young woman in Philip Mercier's *Air* (1756) -- a bird meant to signify courtship (Daniels 40-41). When Shelagh Stephenson's Maria names her pet bird after her fiancé, she likewise links a bird with love, and while the anxious young girl in the *Air Pump* is too young to have a lover, the bird is evidently her beloved pet -- taken from its cage at upper right.

The "shocking" possibility that this bird might be sacrificed on the "altar of science"—to use the very words of Ferguson and Martin, Wright' s scientific contemporaries--becomes still more shocking when we consider what Wright does with the Christian iconography of birds. It has long been recognized that in juxtaposing the lecturer with a man

pointing up at the bird, *Air Pump* recalls a kind of early Netherlandish painting in which God the Father, standing by Christ, points up to a dove representing the Holy Spirit (Fraser 20). Likewise, illustrating the Gospel story of Christ's Baptism, when "the Holy Spirit descended upon him in bodily form like a dove" (Luke 3: 21-22),. Piero della Francesca's *Baptism of Christ* (1448-50) shows a pure white dove with outstretched wings hovering over the head of Christ and the upraised hand of John the Baptist.

In Wright's painting, the place of the dove is taken by a pure white cockatoo with a single wing extended. Resting on the bottom of the glass receiver, the bird is level with the head of the lecturer and directly beneath the hand that controls the stopcock and thus the flow of air that determines whether or not the bird will live. Insofar as this bird recalls the dove of the Holy Spirit, whose very name—*spritus*—means breath, its precarious condition is almost literally breathtaking. In the opening lines of the Book of Genesis, we are told that creation began when "the Spirit of God moved upon the face of the waters" (Gen. 1:2),

and in the invocation to *Paradise Lost,* his epic re-writing of Genesis, Milton seeks the guidance of this Spirit because, he writes,

> thou from the first
> Wast present, and, with mighty wings outspread
> Dove-like sat'st brooding on the vast Abyss
> And mad'st it pregnant. . . . (*Paradise Lost* 1: 19-22)

It may be argued that the Christian iconography of the dove has nothing to do with the fate of a canary in an experiment that eschews both chicanery and superstition in favor of demonstrable facts. According to Barbara Stafford, the demonstration Wright depicts is a genuinely scientific alternative to the resurrection trick performed by eighteenth-century charlatans. The trick was explained and thus unmasked by a French writer named Henri Decremps, who showed how a dead bird could be "revived" by the substitution of living one covertly thrust up through a trap in the demonstrator's table (Stafford 96-99). Since charlatanism was linked with superstition of all kinds, with "the artifice of priests, both ancient and modern," Wright's painting seems to offer an enlightened antidote to both trickery and religious mystification,

for here the onlookers closely observe an apparatus mounted on a table "without false bottom" (Stafford 16, 102).

Yet in spite of its scientific authenticity, and in spite of the clarity with which Wright depicts both the pump and the table, the painting casts the lecturer in the role of God. "[I]n demonstrating his expertise for his own profit and for the benefit of his audience," writes David Solkin, "he also assumes a power over life and death, a power that he cannot control with certainty, and that is not rightly his, but God's" (Solkin 238). The lecturer may not be quite so deranged or "Laputan" as Paulson claims (186), for in my opinion, his look signifies not so much a monomoniacal obsession as a keen concentration on the state of the bird.[12] But as Solkin says, the lecturer cannot absolutely control that state. Neither he nor the man with the watch on the table—a watchman in every sense of the word—knows exactly how much air the bird can lose without suffocating. Likewise, we ourselves have no way of knowing for certain that the bird will revive. This is what makes

[12] Paulson 186. While the candlelit face of Wright's lecturer may owe something to Thomas Frye's *Figure with Candle,* as Nicholson suggests (44) the narrowed gaze and barely parted lips of the lecturer differ sharply from the open mouth and wide open stare of Frye's figure.

Wright's *Air Pump* – in Paulson's words – truly "a history painting for his time " (Paulson 192).

In traditional history painting, which might be called "story painting" since it represents a well-known story of mythological, biblical, or heroic characters, the artist typically represents what G. E. Lessing called the "most suggestive" or most pregnant ("pragnantesten") moment of an action—the moment that most clearly implies what has already happened and what it is to come (Lessing 78). In Titian's painting of *Venus and Adonis* (c. 1553), for instance, Venus' clutching of Adonis as he resolutely strides away tells us that she has tried in vain to keep him from boar hunting and also that he is irrevocably bound to be fatally gored. But we can infer these things only if we already know the full story of Venus and Adonis, especially its ending. Likewise, in the well-known engraving commissioned by the Earl of Shaftesbury for the title page of his *Judgment of Hercules* (1713), the hero stands between the alluring figure of Vice, who invites him to lie down beside her, and the stern figure of Virtue, who points to the winding, arduous path up the hill behind them (Cooper). In turning away from Vice and

listening to Virtue, Hercules reveals that he will heed her counsel and take the path plainly indicated by her pointing finger. But the raised finger of the father in the *Air Pump* points only to a hand that may or may not turn the stopcock in time. This not only makes the ending of Wright's "story" impossible to predict but also undermines its pedagogical message: that father knows best, that his superior understanding of science will gradually help his daughters see beyond their impulses.[13] What happens to his lesson if the bird dies?

In that case, it would indeed be sacrificed on the altar of science, in which case the father's relation to his anxious daughters would signify something quite different from benign pedagogy. In hiding the face of one of the daughters, Wright evokes –no doubt unwittingly-- a lost depiction of the sacrifice of Iphigenia by the ancient Greek painter Timanthes. Acclaimed by a succession of ancient writers as well as by some of Wright's contemporaries (including Joshua Reynolds in his Eighth Discourse of 1778), Timanthes' painting was verbally reproduced in Alberti's *De Pictura* (1435), where we are told that in

[13] As Solkin suggests, the father's comforting gesture may be read as exemplifying Joseph Priestley's precepts on the role of "paternal affection" in the education of children (qtd. Solkin 1993, 235).

representing various reactions to the sacrifice of Iphigenia, Timanthes covered the face of her overwrought father because the intensity of Agamemnon's grief could not be signified by any other means (Alberti 82). Is it a stretch too far to see the ghost of Timanthes' lost painting haunting the shadows of this one? I think not. Wright hides the face of a daughter instead of a father, but in asking his girls to witness an experiment that may kill their pet canary, the father sacrifices their feelings—even as the painter makes us see that one of them finds the plight of the bird too shocking to witness.

This is the crucial point finally dramatized by Stephenson's play, which begins by saluting the quasi-divine power of scientific investigation and ends by mourning the death of a young woman sacrificed to its demands. In the opening speech of the Prologue, as we have seen, Ellen recalls that she loved Wright's *Air Pump* because it deified science: "it has a scientist at the heart of it, a scientist where you usually find god." In the scene that follows Ellen's speech, where the 1799 family re-enacts the air pump experiment, Maria's fear for the life of her pet bird is mocked by her twin sister Harriet and then dissolved

entirely when "the bird flutters out, unharmed." (Stephenson, Prologue). But at the end of the play, Wright's painting is once again "realized" with a crucial difference.[14] With the 1799 family gathered "to the chiaroscuro effects of the very first montage," the bird in the pump is replaced by a corpse in a coffin. The corpse is that of Isobel, the humpbacked servant whose grim conviction that no man could ever love her is overcome when Armstrong courts her with kisses, a book of Shakespeare's sonnets, a gold chain, and passionate professions of love. But Armstrong loves only science, more precisely anatomical freaks. As he reveals to Roget in a would-be private conversation that is overheard by Isobel while she stands unnoticed in the doorway, Armstrong courts her only in order to get her into bed so that he can "examine her beautiful back in all its delicious, twisted glory, and frankly that's all I'm interested in" (Stephenson II: 3).

Armstrong thus embodies the heartlessness of science. While Roget—father of the thesaurus-- denounces him as "amoral, corrupt and depraved," Isobel runs off to write a suicide note ("Now my mouth

[14]Commonly featured on the nineteenth-century English stage, a theatrical "realization" translated a painting into a "more vivid, visual, physically present medium" in three dimensions (Meisel 30).

is full of ashes") and hangs herself, which finally explains why Tom has found a "box of bones" beneath the kitchen of the expanded house in 1999 (Stephenson I: 2). As a result, the play concludes with a scene of mourning that all but negates the promise of renewal; it darkens the mood of expectation generated by the advent of what is not just a new year, but a new century.[15] In the just preceding scene of New Year's Eve 1999, Ellen reveals that she has decided to take Kate's offer of a lucrative job in embryo research and thereby pursue all its exciting "possibilities." But Tom skewers Kate's faith in the salvific power of science. "One of the things we know," he says, "is that the messiah's not coming" (Stephenson 72). In the final scene of New Year's Eve 1799, as the chimes of midnight reach the family gathered around Isobel's coffin, Fenwick toasts the future in terms that encapsulate both the ambiguity of the play and the radical indeterminacy of the painting it dramatizes: "here's to uncharted lands . . . here's to a future we dream about but cannot know . . . here's to the new century . . ." (Stephenson II: 5). To consider what science has done in the more than two

[15] I feel bound to say, however, that I stand with those who believe that a new century does not begin until the first day of the year ending in 01.

centuries since 1799 is to recognize its extraordinary achievements, to ponder the price we have paid for them, and to wonder what new sacrifices it will ask from us.

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