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# THREE MILE ISLAND: FACT, FRAME, AND FICTION

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SINCE MARCH 30, 1979, "THREE MILE ISLAND" HAS REFERRED TO FAR MORE THAN a small island in the Susquehanna River. Few Americans, at least, have any difficulty calling up an image of Three Mile Island's cooling towers in the bucolic middle landscape of central Pennsylvania, now the icons of a dramatic encounter with the machine in the garden. Indeed, the abstracted forms of those particular towers are nearly as recognizable as the first icon of the nuclear age, the mushroom cloud. Six years after a plant malfunction which caused the recommended evacuation of pregnant women and children and the voluntary evacuation of thousands of other area residents, tourists from all over the world visit the site, doubtless a striking contrast to their visit, perhaps a day before, to the Amish of Lancaster County. "Remember Harrisburg," like the euphonious "Remember Hiroshima," is a rallying cry for the antinuclear movement both in the United States and abroad, and expunging the symbol from the usually short historical memory of the American people or, barring that, restructuring its meanings is the daily concern of a small army of public relations specialists.<sup>1</sup>

The fundamental meanings of Three Mile Island as a widely shared symbol were constructed rapidly, under stress, and although they have undergone refinement, have changed little. An exploration of the social processes which transformed "Three Mile Island" from a place name to a prototype of contemporary American experience both clarifies the meanings of this particular symbol and reveals some of the influences of mass media on individual and group strategies for interpreting experience and determining appropriate situational behavior.<sup>2</sup> To study Three Mile Island from a cultural perspective is

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to study how people in a mass society create meanings essential to projection and, thus, to rational decision making.<sup>3</sup> A more complex process than it may appear, it is, as the anthropologist Clifford Geertz has suggested of symbol making in general, a "social event like any other . . . as public as marriage and as observable as agriculture."<sup>4</sup>

Immediate, widespread and continuing public response to mass media coverage of Three Mile Island's emergency made clear that the event offered a unique, if not happy, situation for research. In general, emergencies and disasters provide a valuable perspective on human behavior because unlike "the recurrent crises and accidents of everyday life [which] tend to be isolated, random events that produce private human troubles . . . [disasters] affect all [proximate] persons indiscriminately, and therefore produce a temporary" but significant shift in patterns of behavior and thought.<sup>5</sup> In response to extraordinary events a process of "normalization" leads individuals and groups to attempt to apply "an existing scheme—or a derivation or a new one . . . by placing unusual and unfamiliar events within a meaningful framework that permits understanding and adaptation." As Jon W. Anderson elaborates: "the emergent pattern is an amalgamation of the known and familiar within the unknown and unfamiliar. . . . [People] experiencing crises are not responding just to the events of disaster but to what those events mean and represent to them within their interpretive schemes."<sup>6</sup>

Such interpretive schemes are, of course, among the forms which constitute culture as a shared system of meanings, and particular schemes brought to bear in particular societies express central categories of cognition and interaction. Yet just how the schemes are used by individuals and groups is not clearly understood.<sup>7</sup> Common popular assumptions about the irrelevance of fictional materials to real life, as well as the obvious difficulties in gaining access to cognitive processes under stress, have often led to both oversimplification and underestimation of the ways in which a cultural inventory, including shared fictions, is drawn upon in decision making.<sup>8</sup> John Caughey's work on *Imaginary Social Worlds* has begun to make sense of an array of models drawn upon in contemporary interpretation and decision making. Following models developed by E. I. Hallowell, he has argued that generally Americans live in two related, but normally distinct, social worlds: the first, a world of actual, face-to-face relations; the second an artificial social world which includes "all those beings that are known to the individual via television, radio, movies, books, magazines and newspapers."<sup>9</sup> Caughey has particularly been interested in the fact that "despite complete lack of face to face contact, people become emotionally oriented toward artificial beings in something of the same way they are oriented toward persons in their actual social world," and he infers from current thinking among communications scholars that "media experience is probably particularly important when a person anticipates situations that he has not previously encountered first hand."<sup>10</sup> Caughey's arguments about the cognitive interpenetration of these two social worlds, the one imaginative, the other "actual," are directly tested in this field investigation of the public response to the events at

Three Mile Island. The texts used in this analysis are those of more than four hundred interviews conducted in Carlisle, Pennsylvania, twenty miles from the plant, during the six months following the emergency.<sup>11</sup>

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After initial warnings from the Three Mile Island plant, the most pressing practical question for many central Pennsylvanians was whether or not to evacuate.<sup>12</sup> By March 31, three days after the reactor went out of control, substantial numbers of students at Carlisle's Dickinson College had left the area, either on their own initiative or at the urging of relatives who had followed news of the accident through mass media. Many more left after the College suspended classes in response to both partial evacuation and parental concern. In contrast to students and residents of communities closer to the plant, other residents of Carlisle did not evacuate in great numbers. Although a few left in the early warning stages of the emergency and a few others never considered evacuation at all, to stay or to leave proved a conscious and complex decision for most of this marginal population. It was also a contingent decision: many of those who did not leave packed their cars and kept gasoline tanks "topped off." In a number of respects, then, the emergency at Three Mile Island was more an extended warning situation than a full disaster, at least for those twenty miles from the plant.<sup>13</sup> As a result, normalization processes were at work and observable for a considerable period of time.

At one level, normalization took the form of seeking more information. People were exceptionally attentive to television and radio both for reports on events and for concepts (a "new scheme") which might help them understand and interpret events. Cognitive stress was evident as large numbers of people, at first self-consciously, began to use a vocabulary (and a corollary, often vague imagery) previously unknown to them. Terms like "reactor," "cooling towers," "containment building," "milirems," "hydrogen bubble" and "meltdown" were acquired, while others like "release," especially when qualified by the adjective "unscheduled," took on new meanings. Part of the technical jargon of nuclear power plants, this vocabulary constituted a rapidly developed situational dialect, the symbolic artifact of a massive public education program which reporters and news commentators were forced to organize even while they gathered "facts." As the situational dialect became usable, it immediately formed the core of a rich variety of joking, another and important adaptive response to stress.<sup>14</sup>

People recognized that they were experiencing unprecedented and, for many, unimaginable circumstances. "There was an air in the town of . . . ah . . . just disbelief" one informant said, and another suggested that it was like "being in a bad movie." The disbelief "in the air" can be explained, in part, by reference to the denial of danger commonly observed by disaster researchers.<sup>15</sup> In emergencies, even public officials responsible for detecting threat are often unwilling to issue warnings until they become "reasonably" certain that the

predicted danger will materialize. After a warning, it seems, the public tends "to seize on any vagueness, ambiguity or incompatibility in the warning message that enables them to interpret the situation optimistically."<sup>16</sup> At Three Mile Island, this tendency to delay warning was further aggravated by the less-than-candid behavior of the Metropolitan Edison Company. Since vagueness, ambiguity and inconsistency characterized early messages about Three Mile Island's plant, tendencies toward denial were probably significantly enhanced.

However, informants testify that other and quite different sources of "disbelief" distinguished Three Mile Island from other emergencies. For example, a thirty-two-year-old woman reported that she thought about "outer space movies just because its out of my—that I didn't think—of nuclear power as—like *Star Trek* and them. I think, 'That's not going to be my day.' I just kind of put it with space and I don't know why . . . I have no idea why." Several aspects of this halting report of imaginative response are important. Spontaneously, this informant connected "outer space movies . . . like *Star Trek* and them" and nuclear technology. Both had an unreal quality for her, and framing both as part of some future world—"That's not going to be my day"—ordinarily keyed her to an associated cultural inventory of science fictions and allowed her a generalized denial of the relevance of either to her daily life. Yet Three Mile Island's emergency disrupted daily life and forced her to face the fact that nuclear power is part of an all-too-immediate present. Her final comment, "I don't know why," rephrased for emphasis, "I have no idea why," is an implicit recognition that logical distinctions normally maintained between the two worlds of the actual and the fictive or vicarious have, at least temporarily, broken down.

Many informants reported a wide-ranging search for analogies. In this search the individual sorted through the cultural inventory of experience, both actual and vicarious, both historical and fictive, as if these various models of thought and behavior were of the same kind in terms of their relevance and reliability. In other words, at least temporarily, they did not frame a fantasy, say *War of the Worlds*, as "unrealistic" and therefore irrelevant as they might ordinarily. Such "loose" thinking is a continuous source of creative adaptation and is also characteristic of the mind at play, a fact which may in part explain why some informants only reluctantly admitted to the activity: emergencies are not regarded as suitable occasions for such "irrational" thinking. Nonetheless, science fictions and images, historical narrative and images, and previous actual experiences came to mind and were used in attempts to normalize the situation. In imagination, people turned to analogs like *On the Beach*, *Fail Safe*, *Dr. Strangelove*, *Hiroshima Mon Amour*, and *Canticle for Liebowitz*. They thought of the Nevada tests, the Cuban Missile Crisis, and the Cold War (bomb shelters, air raid drills and the like). Most important of all, informants drew upon their understanding of the World War II bombings of Hiroshima and Nagasaki. Even where particular fictions were not cited and there was little sophistication, mushroom clouds and fire ball imagery dominated imaginations: "The bomb . . . what was that bomb called? Yeah, that's what I was thinking about. [My

roommate] and I were talking about it with the ladies at work." Describing a meeting of evacuation planners, a public official noted that

people had the attitude that all of a sudden there's going to be a big mushroom cloud and we're going to relive Nevada all over again. They just thought it was going to blow up like an atomic bomb. And when [a physicist] explained there would not be the explosion—the danger may be there, the radiation will be there, but not the blast and the fallout as we expected, he singlehandedly reduced three-quarters of the fears of people involved in Cumberland County [emergency] planning.

Some people took the atomic bomb as a precise analog of what might happen. A seventeen-year-old male reported that he "always kept expecting to see, during the time, this big red mushroom cloud arising on the horizon." And a forty-three-year-old woman "envisioned it happening similar to the atomic bomb. . . . You wouldn't see it, but you could visualize this large mushroom of, of movements . . . spreading as it moved just like a rolling cloud or tumbleweed. . . . I felt that there would be no life." Yet the struggle to imagine was often complicated by the recognition that the bomb image is not entirely accurate because "you wouldn't see it." Other informants were better prepared to dismiss the bomb image, at least in retrospect: "You think about what happened in Japan, about Hiroshima. But then you immediately say, well, that can't happen here, because it's impossible to have that situation."

Media coverage of events at the plant attempted to dispel the bomb analogy from public consciousness, but by Saturday, March 31, widespread reports of the possibility of a hydrogen explosion (verbally associated with the hydrogen bomb) confused the issue. Another public official asserted:

I think everybody was picturing the mushroom cloud going up and they were tying that same thing to TMI 'cause I talked to so many people and I tried to point out (and I didn't know anything), "You're not talking about a big explosion, where you have the big blast and the mushroom." [They answered] "Oh no? Well, what are you talking about?" And I don't know how right or wrong I was. I was picturing this big boom and then you stand there and watch the big cloud. Now which way is it going to go? And all this and all that. I did a little bluffing sometimes, but it seemed to give some people some answers for the moment anyhow.

Although they may have found answers "for the moment," very few people were able to dismiss images of the bomb in a decisive way, and those who did either were fairly sophisticated about nuclear technology or knew and trusted someone who was.

When projections of explosions were dismissed, use of the bomb analogy to anticipate the aftermath of the potential disaster persisted, and upon reflection seemed to meet rational criteria for the "realistic" projection:

I thought of Hiroshima . . . I wondered how people feel now who have survived that and what the effects of radiation are on families and generations. And I felt real

ignorant. I realized how little I know: I didn't think it would work that way (like the explosion of the bomb), but it would be like an odorless, colorless kind of invasion. . . . We would just start falling over.

While it is important to emphasize that events at Hiroshima and Three Mile Island were not similar except in the sense that both dangers materialized suddenly and their technological source was nuclear, it is equally important to indicate the degree to which the Hiroshima experience informed responses to Three Mile Island. Certainly this might have been expected, since Hiroshima was the prototype of human experience with nuclear disaster prior to the Three Mile Island emergency. Robert Jay Lifton, in exploring the effects of the Hiroshima experience and nuclearism in general, has argued insistently that the death immersion represented by Hiroshima was both quantitatively and qualitatively different from that of other forms of disaster.<sup>17</sup> The dropping of the bomb, he contends, destroyed the traditional "boundaries of destruction," and in doing so, eroded conventions of literal or metaphoric immortality. This damage to symbolic structures fundamental to social bonding, he further argues, has placed human beings in a difficult psychohistorical situation even if the threat of nuclear disaster were never again to materialize. Three Mile Island was, at least in prospect, a rematerialization of that threat. It forced individuals to remember the bombing of Hiroshima and its death immersion and led them to confront, if not resolve, their fears of human extinction and the destruction of all nature. Informants spoke of half-projected, half-experienced sadness and grief, a powerful emotional sense of impending tragedy. For many, the tragedy was of classical form, stemming from human pride and folly. Their testimony is clear verification of Lifton's contention that modern consciousness is latently informed by the Hiroshima experience.

Not only did the historical event of Hiroshima directly inform interpretations of events at Three Mile Island, but fictions created in response to Hiroshima were also employed as people projected the aftermath of nuclear disaster. Such fictions as *Night of the Living Dead*, *Invasion of the Body Snatchers*, *The Last Man on Earth*, *Omega Man*, *Alas Babylon*, *Planet of the Apes*, *Twilight Zone*, and various Japanese monster films became a relevant part of the cultural inventory. Informants projected bizarre biological changes: giantism (the worms or rats had grown to enormous proportions) or change in color (grass was greener or people had become green). They spoke of "limbo" images and projected a general landscape that was either totally devastated or physically intact, but devoid of all life. In such fantasies Harrisburg or Carlisle stood, silent artifacts of a former society. As in many science fictions, the individual had somehow survived to face a sort of life in death in a transformed or contaminated world. Most of these fictions, except where they summoned images of evacuation and panic, did not directly alter behavior, apparently because they failed to meet criteria of rationality, but, metaphorically linked to radiation in general and the bomb in particular, they expressed deep-seated anxiety and a fundamental, but regretted, ignorance.

One twenty-year-old male's description of a group discussion during the emergency indicates how the cultural inventory imaginatively came together:

I could imagine all kinds of fantastic things like, not realistically, but kind of humorously. Not humorously, but . . . nuclear type holocausts, that type of thing, being the last few people, just left in an area during evacuation . . . imagining what an evacuation would be like . . . I have never been in one and I have never seen one except we could joke around, some of us, about seeing *War of the Worlds* where people were all fleeing the invading Martians or whatever. They are all fighting each other for cars and all this. How funny that would be to see, sort of sickly kind of humor. . . . Basically that's all people talked about, a week or so . . . one night . . . we were trying to think of a slogan (for a T-shirt) and somebody said, "And you were worried about the bomb?" And we thought that was pretty good because the big discussion—the big debate about nuclear power and energy from nuclear reactions in the forties was that the bomb was going to devastate the world. . . . And here we are and the bomb hasn't really affected us to that great an extent and then all of a sudden nuclear reactors, which was the positive side of atomic energy back then, has turned around and bitten us.

In dealing with Three Mile Island, then, normalization was particularly puzzling and difficult for several reasons. First, the actual situation was unprecedented for both the individual and the entire group. People could not turn, as they might in more common emergencies, either to their own past experience or to the experience of others for precise analogs. All the "talk that was going on," although it produced momentary comfort and social solidarity, did little to help people develop firm and, to them, reliable interpretations of their circumstances. Second, failure to develop a shared model drove people to imaginary models of experience that were suspect to them by virtue of their fictive (in the narrow sense of the term), fantastic or futuristic quality. Finally, the process of free exploration which led them to these suspect models was itself suspect by virtue of its "irrationality" which, in turn, cast further doubt on the reliability of the models themselves. Yet people had little choice but to employ whatever interpretive context they could establish. And while fictions having to do with Hiroshima or invasion and contamination formed only the background of interpretation and behavior, other analogs which emerged were widely employed and, for many, fully met "rational" criteria of relevance. Informants cited a number of disaster fictions which they used for projection and prediction: World War II films, the *Airport* series, *The Towering Inferno*, *Jaws*, *The Swarm*, *Earthquake*, *Fire in the Sky*, *The Birds*, *Poseidon Adventure*, *Panic in the Year Zero*. A ten-year-old boy said that he imagined that "everybody was panicky and the highways were all crowded like in *The Swarm*." A twenty-year-old college student

had pictures of all these people leaving, evacuating. My mental picture was of everybody in the whole state of Pennsylvania leaving and I just thought, I imagined myself trying to get out of the parking lot behind Allison Church and not being able



to because all the roads were jammed. And people were getting freaked out and doing really crazy things like driving up sidewalks . . . total chaos.

The real possibility of mass evacuation on an undetermined scale was clear throughout the most tense weekend of the emergency. Pennsylvania's Governor Thornburgh had advised the evacuation of children and pregnant women from an area within a five-mile radius of the plant, and emergency agencies throughout the area were belatedly planning for the movement of a large population. For informants, media-derived models of mass evacuation were invariably bound up with images of panic and chaos, and such images were taken as representative of the forms of behavior that one might actually expect. As one informant stated quite unequivocally, "Oh, you are going to have panic; that's just human nature. People are going to panic."

This projection led some people to early evacuation: "I did not think it would be possible to orderly evacuate. . . . So I feared massive traffic jams and . . . the impossibility of getting out. . . . I had to make a decision before . . . I might no longer be a free agent." It led to continuing assessment on the part of others: "I was monitoring as I jogged. . . . If the roads were becoming too crowded I was going to leave. I didn't want to be caught in a panic later if an evacuation was called." And it informed the decisions of public officials working closely with emergency planning. As one County official noted:

There was a tendency throughout the operation from the very inception and right through the worst part of it to avoid panicking the public. That was such a tremendous concern that it caused hesitancy, and I kind of bucked that because I've always been a great believer in letting the public know what's going on, bring the public into your confidence, and doing what has to be done and letting them know what you're doing. However, time and time again . . . there would be a tremendous concern as to what impact it would have on the public, panicking them. . . . It was a factor that weighed too heavy in the early stages.

"Bucking" the tendency to understate for fear of public panic was very difficult, however, for both officials and the general public regarded panic as a likely reaction, a reaction associated with the mass media in particular. A County commissioner reported that "we wanted to keep panic off the highways and the national media proceeded to incite panic several times . . . which in hindsight may have been a blessing since it inspired a lot of people to voluntarily evacuate."

As the commissioner suggested, the national media were widely seen, especially in official circles, as less reliable than local media. Yet reporters working within the local news networks were constantly frustrated in their attempts to report responsibly; one reporter described his situation:

It started to be kind of crazy, and then somebody denied [that the situation was serious]. And then some other scientist said, "Yes, there's a chance [for a meltdown]." And then somebody denied it, and it finally came to where Friday

night we were caught sitting around the TV set watching Walter Cronkite to find out what was really going on.

Network news coverage of the emergency was also thought to be more "sensational." This attitude may be due in part to the fact that even during a crisis network coverage tends to be summary in style, leaving far more to the imagination than detailed coverage at local levels. Moreover, those remote from the scene of a crisis, including journalists, tend to construct events in more dramatic form, indeed probably latently informing coverage with the same sort of narrative structures evident in the fictional analogs drawn upon by the more immediate public.<sup>18</sup>

Yet the knowledge that public officials would be concerned about creating panic brought for many a reframing of the information they received from official sources through the "more reliable" local media. As one informant stated: "I don't know if they released to the media what they thought could really happen. . . . I think they kept it covered up for a few days [because] . . . the panic comes more or less if they do anything." The dilemma that people faced, therefore, was a dilemma of frame. Individuals had to decide whether or not (and at what levels) the information they received was free or controlled, accurate or distorted, true or false. They had to determine whether network coverage "overstated" the potential dangers of the situation or local coverage "understated" those dangers by virtue of Metropolitan Edison's concern for public relations or official concern for "public panic." Attempting to resolve this dilemma, people sought redundancy by switching the television channel or turning the radio dial; yet they found, at least during the first three days of the emergency, only the redundancy of contradictions. That this dilemma remained unresolved for some time points up the fact that the Three Mile Island emergency was, for anyone not immediately associated with the plant, a mass-mediated experience. As one local reporter has testified, journalists themselves relied on other journalists, and even the emergency agencies of the counties in the area more often than not received information about developments at the plant from radio and television broadcasts before they received word through official channels, a fact which came to public light only after the emergency was over.<sup>19</sup> Into this dilemma, then, fed all of the prior judgments of individuals concerning the reliability of three distinct institutions, any one of which could have been falsifying, distorting or controlling information: industry, government, the media organizations themselves or a collusion of any combination.

Under such conditions, where it is impossible to establish redundancy, and when the trustworthiness or even competence of those in charge is questioned, individuals attempt to assess their situation independently, often resorting to the senses. In a different type of emergency people might have looked for changes in the weather, a rise in the river or bombers overhead. But sense-based redundancy was also impossible to achieve in this instance because of the nature of radioactivity itself. Individuals could monitor wind direction (which they did), but, because radioactivity cannot be sensed, they could not independently

verify imminent or actual exposure. It was this knowledge that informants cited as making Three Mile Island "more frightening" than other types of threat. As one suggested: "Flood, you can go someplace or there is always an answer for it. In a hurricane you can run to the basement at least. But something you can't see, that's what you don't have no control over."

It would be difficult deliberately to design a situation more conducive to "irrational" response: because of perceived danger, response was seen to be compelled; messages were contradictory or conflicting; independent efforts to establish redundancy were blocked; and, because information was mass-mediated, metacommunication was impossible. For all practical purposes, the residents of the area found themselves in a classic double bind.<sup>20</sup> Informants needed, therefore, some extrasituational means to achieve consistency and "rationality" in their projections and decision making. Despite the fact that panic is a highly dubious model of human behavior under emergency conditions, for informants it became the most "rational" projective model. Disaster researchers have not been able to explain the tenacity of this popular model, but the Three Mile Island data offers some clues to its power.<sup>21</sup> As popularly understood, the state of panic includes all the contrafunctional activity commonly a part of "good" disaster fiction (or "bad movie"): rumor spreading, "hysterical" emotional response, "irrational" flight, disorganized or antisocial behavior. As one informant observed, "I would imagine masses of people just going almost berserk to get out. And maybe I would have been one of them. But you just don't know." Even in the aftermath of the emergency the panic model was used as a scheme for interpreting what had actually happened; informants insisted that other people had, indeed, panicked. Yet the same informants testified time and time again to powerful commitments "not to panic," to "keep cool," to be "rational" and "calm," and the like and they were overwhelmingly successful in their efforts. In prospect, then, the panic model served as a negative ego ideal and as a projection of what others would almost certainly do. In retrospect, its use as description, however inaccurate, served to maintain for individuals a positive ego evaluation since they were able to "keep their heads" while others lost theirs.

Most significant of all, however, the panic model of disaster fiction permits normalization to proceed when other avenues of interpretation are blocked. It does so by allowing an imaginative reconstruction of the situation which implies that the real source of danger is not a complex, little understood technology, but an inherent characteristic of "human nature." The model is then used to transcend immediate information dilemmas. For if the real source of danger is "human nature," disaster could occur no matter what was happening at the plant. Once accomplished, this reconstruction in turn provides for redundancy based in the cultural inventory and, thus, a consistency and "certainty" desirable for decision making when much is at stake. The panic model, then, permits a "rational" response to danger, any danger, even when the underlying threat is difficult or impossible to assess. Or rather, it permits people the illusion

of rationality in a situation where full rationality, that is adequate and reliable assessment of danger, is precluded.

There was, however, at least one possible form of projection available from disaster fictions which informants consistently refused to engage. When asked whether or not they had imagined their own deaths, informants overwhelmingly responded that they had not. Yet that response, in light of the two dominant projections, must be regarded as only partly accurate. Probably individuals did not directly confront the possibility of personal death for at least three reasons: first, Americans have a long-standing cultural pattern of death denial; second, it is very difficult to do psychologically since the consciousness imagining its own cessation persists in the act of imagining; third, for most, if not all, direct confrontation of the possibility of personal death would have been contrafunctional in that it might have stimulated the behavior most feared by informants, namely panic. However, taken with the overwhelming association of Three Mile Island with Hiroshima, the primary prototype of nuclear death immersion, disaster fictions must be seen as the indirect expression of repressed fears of personal death, and they surely functioned, as Susan Sontag has suggested of science and disaster fictions in general, to allow individuals imaginatively to survive their own deaths as well as "normalize the psychologically unbearable."<sup>22</sup> Such indirection permitted individuals both to control deep-seated anxieties and fulfill their desires to behave in appropriately "rational" ways.

In addition to providing the analogic context for the normalization of evacuation, panic, and fear of personal death, disaster fiction offered other analogs which became functional. Two particular fictions were more often cited than others as emerging in primary process: *The China Syndrome* and *War of the Worlds*. That *China Syndrome* had opened in Harrisburg the week of the emergency was a coincidence of note to many informants. The film was mentioned invariably by those who had seen it and often by many who had not. The actual emergency led some, who might not otherwise have done so, to see the film and others to suggest that they "did not need to" because they had "lived through it." For those who had seen it prior to the emergency, *The China Syndrome* was a reasonably precise analog to the emergency. As one informant stated:

the . . . problem that came up for me was, I had taken my wife to see *The China Syndrome*. Three days before. So then when it happened, I was really suspicious. . . . As it turns out, it followed the sequence of the movie so, right down the line. Did you see the movie? You have to see it! You wouldn't even have to live here. Just go see the movie, it follows it. And that's exactly what happened. . . . Misleading information and all. . . . People thought that they were withholding information. In my opinion anyhow, they didn't say much, or what they said they contradicted five minutes later. . . . Oh, that *China Syndrome* was right to a T, right to a T. Absolutely.

Of course, the breakdown of the plant at Three Mile Island, the particular failures which produced uncontrolled radiation releases and an overheated reactor were not "exactly what happened" in *The China Syndrome*. The "heroes" of *The China Syndrome* are a scientist (nuclear plant supervisor) and a television reporter who attempt to inform an unwitting public about a dangerous nuclear plant. The scientist, with an intuitive sense of the plant, "knows" that there is something seriously wrong, but cannot produce clear evidence of malfunction. At first, plant managers portray him as overly concerned; later, and more cynically, they portray him as crazy. Collusion between industry and media managements prevents public exposure of the problem, but a female reporter develops faith in the scientist. Eventually, ruthless industry personnel use all means, including murder, to suppress the information. Forced to take action, the "good" (socially concerned) scientist locks himself in the control room of the plant and calls in the press. Police storm the control room and the film ends with the scientist dying on the floor, the plant rumbling ominously. This final scene has taken place before television cameras, and it is clear that the reporter, aided by another plant operator, will tell the tale.

The failure of analogy between many elements of the film's plot and the events at the Three Mile Island is, at one level, altogether clear. But the power of *The China Syndrome* as analogy for informants lay not in the film's melodrama of murder and mayhem, but in its presentation of the power nexus of information control: "They were withholding information, in my opinion anyhow." At the time of the emergency, this particular informant recognized that his interpretation of events in light of the film was a "problem," that is, he recognized that this collapsing of normally maintained distinctions between the fictive and actual worlds was possibly inappropriate. It made him "really suspicious." Yet his use of the analogy "as it turned out," in retrospect, was fully vindicated for him because "that's exactly what happened."

*The China Syndrome* figured in direct ways in normalization for at least four different reasons. First, an unsafe nuclear plant was the central problem of the film; in fact, informants, probably prompted by media reporting, often referred to a meltdown as "the China Syndrome." Second, the film's portrait of nuclear management resonated to public fear that Metropolitan Edison was cynically protecting its own interest and relatively unconcerned about public safety. Such fears were heightened by the Company's initial handling of information. Third, the film directly addressed questions concerning the responsibilities of scientists and journalists to a normally inattentive public. Finally, there can be little doubt that the coincidence of the film's proximate opening, uncanny for some informants, ironic for others, made its use as analogy almost irresistible.

*War of the Worlds*, on the other hand, simply does not compare to actual events in these rather direct ways, yet it was the second most mentioned fictional analog. As an earlier cited informant suggested, this particular fiction came to consciousness in part for the same reasons as other fictions of evacuation and panic. Metaphorically, *War of the Worlds* also expresses a generalized situation:

the population is suddenly assaulted with a deadly, little-understood technology by a coldly calculating, but in *War of the Worlds*, alien force. Social systems disintegrate under threat; science and government, including the military, fail to understand or deal with the threat. The narrator of the story (a scientist and sometime journalist) survives to report each stage of the annihilation. Only nature can stop this force; in the end the aliens succumb to the earth's bacteria. Both *War of the Worlds* and *The China Syndrome* also dramatize a fearful public powerlessness analogous to that of the Three Mile Island situation. Yet these metaphoric elements do not sufficiently distinguish the *War of the Worlds* from other disaster fiction to explain its prominence as a particular analog.

However, *War of the Worlds* is a science fiction with a social history.<sup>23</sup> In 1938, Orson Welles's broadcast of a radio adaptation of the H. G. Wells novel caused a public "panic." The radio script simulated the style of contemporary radio reporting in sufficient degree, at least for those who tuned in late to Mercury Theatre on the Air, to cause a misframing of the science fiction script as a report on actual developments in New Jersey. A significant number of people reacted in ways consistent with expectable behavior in the warning stages of actual disasters. In short, because they misframed a fiction which, for dramatic purposes, had been coded to mislead, they reacted "irrationally." Of course, American audiences were far less experienced with mass media forms in 1938 than they were in 1979, and the social history of Orson Welles's *War of the Worlds* is a part of the cultural inventory now used to normalize media reports of extraordinary events. The broadcast is a well-known prototype which provides a projection of the consequences of responding to mass media in an insufficiently skeptical way. Moreover, it alludes to the problems which arise when individuals allow the collapse of ordinarily maintained boundaries between fiction and actuality. Together, then, *The China Syndrome* and *War of the Worlds* provide a complex analogy not so much to the events of the Three Mile Island emergency as to the information dilemmas of actual social life in mass-mediated society.

There is one final way in which disaster fictions provided analogies directly employed to interpret events at Three Mile Island. As John Caughey has argued, in a mass-mediated society people are required to develop cognitive and affective orientations toward others with whom they have had no prior experience, let alone face-to-face contact.<sup>24</sup> This demand requires that the public develop a cultural code to determine just who is trustworthy and appropriately "in charge." During the emergency our informants established a powerful emotional orientation toward Harold Denton, the Nuclear Regulatory Commission official who came from Washington to the plant site. As one informant put it, "I think Harold Denton was everybody's hero." Initially, Denton's trustworthiness was much enhanced by the contrast he made to Jack Herbein, Metropolitan Edison's spokesman prior to Denton's arrival. Herbein provoked particularly vehement reactions from informants. A county official's evaluation is indicative: "This idiot Herbein, that's for the record, *idiot*

Herbein, trying to cover his own butt. The confidence of the public had gone to zero as far as Met. Ed. was concerned, because of him." Given a failure of public confidence in Metropolitan Edison, the fact that Denton came representing government and, it was assumed, from the outside, was extremely important.<sup>25</sup>

Yet it was Denton's style that was probably most important. He was described by informants as "cool" and "calm" and "rational," and he adopted the, albeit mediated, informal style of relationship which people expect under emergency conditions. Unlike "that turkey" Herbein, whom informants ("I couldn't believe it") remember speaking, even in the earliest warning stages, of rate hikes and the like, Denton identified himself with public safety; he "seemed to understand." Although his actual command of conditions at the plant was as limited as others', including its operators, he did not try to "bluff it." He admitted that the situation was unclear; he was "frank" and "open." In addition, as a physicist, he brought a mantle of expertise. But what Harold Denton actually did had nothing to do with physics or the condition of the plant itself. On the contrary, Denton dealt almost exclusively with the communications situation by centralizing information flow from the plant. In controlling not radiation but press releases he introduced the redundancy sought by a public attempting to make important decisions. For the people of central Pennsylvania, Harold Denton became a combination of the valorized scientist and journalist routinely and formulaically represented in disaster fiction. Informants recognized him as the "hero" immediately. Disaster fictions, therefore, also provided formulas by which individuals made judgments about the people they would trust in this emergency.

\* \* \*

Three Mile Island was not just a local or regional event; an international media community joined central Pennsylvanians in their dilemmas. Evidence of massive emotional identification with area residents abounds, and it was not just those who had family or friendship ties in the area who responded. Total strangers from all over the world jammed telephone lines attempting to get more information or offer whatever help they could. As one state policeman put it, "people just seemed to want to talk." Interest abroad was so high in one case that a foreign student at Dickinson College was flown from Carlisle to her own country for a television interview. Within a matter of days, Three Mile Island became a worldwide symbol, its towers the "tangible formulation," the "abstraction from experience," the "concrete embodiment" of the "ideas, attitudes, judgements, longings or beliefs" of a worldwide nuclear and media community.<sup>26</sup> The cooling tower became the second icon of the nuclear age, representing the relationship of nuclear power to social institutions and indivi-

dual identity, at least insofar as those are socially constructed by mass-mediated experience.

Popular culture drew upon the new symbol and its related fictions almost immediately. In a Superman comic appearing the following fall, the hero was seen flying over those towers to save the day. Alfred E. Newman from *Mad* magazine posed in front of the towers and stated, "Yes, me worry!" Posters in Europe, towers in the background, admonished "Remember Harrisburg!" Microcomputer companies quickly marketed home video games that simulate reactors. Popular singer Billy Joel's "Close to the Borderline," a song of social disintegration and loss of personal control, predicted "we'll all go to hell with the next meltdown." John Updike's Rabbit sees the out-of-control reactor "down the road" as part of the configuration of general American collapse. Anne Tyler's *Dinner at the Homesick Restaurant*, set in Baltimore, downstream from Three Mile Island on the Chesapeake Bay, provides an ironic solution to nuclear anxieties:

Nuclear accidents! Atom Burns![sic] Just look at the facts; those folks in Hiroshima didn't get near so many side effects as expected! Want to know why? It was all that Japanese food with soy sauce. Keep a case of this around and you'll have no more worries about Three Mile Island.

The Homesick Restaurant, of course, does not serve Japanese food. The soy sauce salesman who delivers the pitch is part of a system that is capable of either ignoring or cynically exploiting public fears of radiation.

All symbols are created out of shared experience, either actual or vicarious, but four characteristics of the emergency now known simply as "TMI" assured its status as a new prototype, as a model of future experience. First, Three Mile Island was unprecedented, a marginal situation *par excellence* which engaged people in an active process of interpretation; it challenged common assumptions and understandings. Second, Three Mile Island was a nuclear emergency and the technology itself is uncanny to those who hold the common materialist assumptions of day-to-day life in America. Third, Three Mile Island was a demonstration of the "ambiguities and uncertainties in social relationships" in modern America, for Three Mile Island challenged directly the taken-for-granted relationships "of managers to operators; of managers to government regulators; of utility companies to the communities that surround the plant; of federal, state and local officials to each other and to the private utility; and of the press to their readers and viewers."<sup>27</sup> For many informants, the fact that this nuclear threat came from within was of considerable importance. As one suggested "and here it was not a military confrontation with another country; it was something we put there. And yet it could have been as challenging and as devastating as if there would have been a nuclear attack." Finally, Three Mile Island, at many different levels, was a widely shared, mass-mediated, artificial



social experience, even for those within the immediate area of the plant. It has become, therefore, not only a prototype of nuclear danger, but one of a growing inventory of models for mass-mediated interaction.

In retrospect, the meaning of Three Mile Island for the economics and politics of nuclear power in the United States is not altogether clear. Certainly the emergency has caused industrial and government agencies to proceed with at least the appearance of more caution than in the past. Safety concerns, or at least the costliness of "safe" plants, have slowed, perhaps even brought to an end, the construction of new plants. Yet much of the public remains convinced that the need for electrical power dictates a continuing use of nuclear generation. As our informants indicated in the six months after the emergency and as other researchers have demonstrated in wider and later sampling, Three Mile Island had very little effect on people's opinions on the appropriateness of the technology itself; "opponents of nuclear power viewed the accident at Three Mile Island as proof that nuclear reactors are unsafe, and proponents saw it as a demonstration of the effectiveness of the multiple safety and containment systems."<sup>28</sup> In other words, while virtually all the supporting social systems of the technology were stressed and challenged in fundamental ways, a serious and sustained questioning of the technology vis-a-vis its social costs and benefits both by the general public and by those who have the power to act in behalf of the public has yet to occur. As Robert Jay Lifton has suggested, such avoidance is characteristic of a general tendency to avoid contemplating directly the consequences of a full-scale nuclear disaster no matter the source, bomb or plant. But it is also revealing of two more generalized American tendencies: to regard social costs as routine, unmeasurable or unimportant and to see technological failures not as stemming from the complexity of the systems in question, but as a result of the fallibility of the human beings tending those systems.

Three Mile Island has, however, changed the cultural inventory which individuals use to interpret events. Three Mile Island now has the cultural status of both symbol and fiction within that inventory, and it is already used as a prototype of both nuclear emergency and, less importantly because not primary, mass-mediated interaction. In one respect, the social construction of this prototype of nuclear threat has positive value, for people will have less difficulty normalizing any future nuclear mishaps; their symbolic world will be subject to less stress, even should their physical world be more devastated. Yet the fact that this "near miss" has become the second nuclear prototype may have some less desirable consequences. It may be used in such a way as to interpret future nuclear plant emergencies as potentially less hazardous than they actually are, further aggravating a general tendency both to delay and deny warnings. That this may be the case can only be viewed as ironic in face of increasing consensus that the actual dangers of Three Mile Island were greater than anyone was willing to admit publicly at the time of emergency.

## NOTES

<sup>1</sup>Metropolitan Edison's public relations personnel at Three Mile Island alone went from one full-time employee prior to the emergency to 34 full-time and 4 or 5 part-time employees as of February 1982. Twelve of those employees are dedicated to public information while the others serve mostly as tour guides. See "TMI's PR Staff Has Mushroomed," *The Guide*, 19, No. 6 (10 Feb. 1982), 1.

<sup>2</sup>I use the term "prototype" here to mean an original form which serves as a model for later similar forms. A prototype is, therefore, part of the cultural inventory of the group which shares it, a model of experience which, by analogy, is employed to interpret subsequent similar experience.

<sup>3</sup>"Culture" is to be defined here in Clifford Geertz's sense, as a semiotic system, a context of interlocked social forms through which individuals interpret both speech and behavior. See "Thick Description: Toward an Interpretive Theory of Culture," in his *Interpretation of Cultures* (New York: Basic Books, Inc., 1973), 28. Both Richard Beeman in "The New Social History and the Search for 'Community' in Colonial America," *American Quarterly* (hereafter *AQ*), 29 (Fall 1977), 428-43 and Karen Lystra in "Clifford Geertz and the Concept of Culture," *Prospects*, 8 (1983), 31-47 have suggested the value of Geertz's theories for American Studies.

<sup>4</sup>Geertz, "Religion as a Cultural System," *Interpretation of Cultures*, 91.

<sup>5</sup>Charles E. Fritz, "Disasters," *International Encyclopedia of the Social Sciences* (1968), 206.

<sup>6</sup>Jon W. Anderson, "Cultural Adaptation to Threatened Disaster," *Human Organization*, 27, No. 4 (1968), 29.

<sup>7</sup>Most disaster research has been focused on social organization, but valuable insight on symbolic processes under stress is also developed here.

<sup>8</sup>Fiction in Geertz's sense that "they are 'something made,' 'something fashioned'—not that they are false, unfactual, or merely 'as if' thought experiments." "Thick Description," *Interpretation of Cultures*, 15. Such a conception of fiction emphasizes the constructive characteristics of all narrative or analysis, collapsing common literary, indeed even common sense, distinctions between fiction in the narrower sense of "made up" and, say, history or biography or journalism. As Gordon Kelly has suggested in "Literature and the Historian," *AQ*, 26 (1974), 141-59, such a conception of literature is valuable for cultural analysis precisely because it emphasizes the expressive and functional.

<sup>9</sup>John Caughey, "Artificial Social Relations in Modern America," *AQ*, 30 (Spring 1978), 71. This detailed discussion, especially of mass media theory, is most relevant to the questions raised by the events at TMI. Caughey's general arguments have been most fully developed in *Imaginary Social Worlds: A Cultural Approach* (Lincoln: Univ. of Nebraska Press, 1984).

<sup>10</sup>Caughey, "Artificial Social Relations," 77.

<sup>11</sup>All interviews were conducted and taped for subsequent transcription by a research team with a variety of interests. Since the team was concerned with social interaction and institutional response as well as the interpretive activities discussed in this essay, informants were selected not randomly, but by virtue of their positions in local networks of association. Represented in the sample are: students (grammar school, high school, and college), teachers, faculty, and administration; local government officials and members of their support staffs (borough and county); policemen (local and state), National Guardsmen, firemen, doctors and hospital workers; members of the Red Cross, Salvation Army, and the Chamber of Commerce; workers at the local telephone company, newspaper, radio stations, and banks; other businessmen; members of various religious organizations; members of various senior citizen groups, and members of a group of pregnant women then meeting at the local YWCA. As far as the research team is aware, these interviews constitute the only extant systematic record of reactions to Three Mile Island which was both timely and comprehensive. Interviews began the week of the emergency and, in contrast to those administered for other research done in the area, permitted informants to say all they wished to say about Three Mile Island. Thus, in addition to eliciting information about matters of interest to researchers, the interviews permitted the expression of the deepest concerns of the informants themselves. In fact, a number of informants found the interview therapeutic in the sense that it permitted them to think matters through and to put events "in perspective."

The research team which both supervised and conducted interviewing included Daniel R. Bechtel (Religion), Julius Kassovic (Folklore), Melissa Kassovic (Anthropology) and myself (American Studies).

<sup>12</sup>An estimated 144,000 people evacuated the greater Harrisburg area and remained absent for approximately a week. Allan Schnaiburg, "Who Should be Responsible for Public Safety?" in David L. Sells, C. P. Wolf and Vivian B. Shelanski, eds., *Accident at Three Mile Island: The Human Dimension* (Boulder, Colo.: Westview Press, 1982), 126.

<sup>13</sup>David M. Rubin, "The Public's Right to Know: The Accident At Three Mile Island," *ibid.*, 137.

<sup>14</sup>Julius Kassovic, "I'm OK—You're Nuked," paper delivered at the American Studies Association Eighth Biennial Convention, Memphis, TN, 1 Nov. 1981.

<sup>15</sup>Fritz, "Disasters," 204.

<sup>16</sup>Rubin, "The Public's Right to Know," 133.

<sup>17</sup>Robert Jay Lifton has discussed these issues in a series of books spanning a fifteen-year period and including *Death in Life: Survivors of Hiroshima* (New York: Random House, 1968); *Boundaries: Psychological Man in Revolution* (New York: Simon and Schuster, 1969); *History and Human Survival* (New York: Random House, 1970); *The Broken Connection: On Death and the Continuity of Life* (New York: Simon and Schuster, 1979); and *Indefensible Weapons: The Political and Psychological Case Against Nuclearism* (New York: Basic Books, Inc., 1982).

<sup>18</sup>Ithiela De Sola Poole and Irwin Shulman, "Newsman's Fantasies, Audiences and Newswriting," *Public Opinion Quarterly*, 23 (1959), 145-58.

<sup>19</sup>During emergencies and disasters networks of communication are often stressed beyond their limits. In this case, however, at least one network operated very effectively. The State Police Headquarters in Cumberland County was informed of the "hydrogen bubble" (a problem which later proved to be a technical red herring) by a stockbroker friend of one of the state policemen. The New York Stock Exchange was kept better informed about conditions at the plant than the state police.

<sup>20</sup>Gregory Bateson, "Double Bind," *Steps to An Ecology of Mind* (New York: Ballantine Books, 1972), 271-78.

<sup>21</sup>Disaster researchers have time and again established that people do not panic under these kinds of emergency conditions (Fritz, "Disasters," 203). One study is of particular interest here. Karl Rosengren, Peter Arvidson, and Dahn Sturesson investigated a mass media report that people had panicked when a fictitious radio broadcast suggested disaster at a local nuclear plant ("The Barseback 'Panic': A Radio Program as a Negative Summary Event," *Acta Sociologica*, 18 [1975], 303-32). They found that no widespread panic occurred even though such was feared as well as reported in the aftermath.

<sup>22</sup>Susan Sontag, "The Imagination of Disaster," *Against Interpretation and Other Essays* (New York: Farrar, Straus and Giroux, 1966), 225.

<sup>23</sup>Hadley Cantril, Hazel Gandet and Herta Herzog, *Invasion From Mars* (Princeton: Princeton Univ. Press, 1947), 41.

<sup>24</sup>Caughey, "Artificial Social Relations," 77.

<sup>25</sup>Harold Denton actually had a long previous association with Three Mile Island, having participated in earlier NRC deliberations concerning the plant.

<sup>26</sup>Geertz, "Religion as a Cultural System," *Interpretation of Cultures*, 91.

<sup>27</sup>Sells et al., *Accident at Three Mile Island*, 16.

<sup>28</sup>Paul Slovic, Baruch Fischhoff and Sarah Lichtenstein, "Psychological Aspects of Risk Perception," *ibid.*, 16.