Harmonizing Cars and Humans in Japan's Era of Mass Automobility □□日本の大量自動時代において車と人の調和をはかるには

Joshua Roth

Harmonizing Cars and Humans in Japan's Era of Mass Automobility

Joshua Hotaka Roth

In the aftermath of the Fukushima nuclear disaster, one cannot help but ask why Japanese authorities long promoted an ambitious nuclear program that included over fifty reactors spread all over one of the most seismically active geological zones in the world, vulnerable not only to earthquakes but also to devastating tsunamis. However, other technological systems have been adopted in Japan and elsewhere despite their inherent dangers and high cost, and have come to be taken for granted as intrinsic to modern life. A comparison of nuclear power and the system of automobility raises the question of how people come to embrace different kinds of technological and social systems, and what sort of event or tipping point may push people in new directions. No one ever asks why the Japanese government has promoted the system of mass automobility. Yet since the 1960s, more than 500,000 people in Japan have died in traffic accidents (National Police Agency 2011). This is far more than the number of those who have died as a result of natural disasters over the same period of time. The number of Japanese injured in traffic accidents over those decades reaches almost 40 million (ibid.).

Oe Kenzaburo highlights the particular tragedy of Japan's embrace of nuclear power in light of the history of Hiroshima, Nagasaki, and the fallout from the Bikini testing of the hydrogen bomb (Oe and Minear 2011; also see Wittner 2011). In these cases, many Japanese were able to mentally compartmentalize the civilian use of nuclear energy from its military use in the form of bombs, with the help of the US-promoted "Atoms for Peace" campaign (Tanaka and Kuznick 2011). In the case of automobiles, where the byproduct of death, injury, and pollution was quite evident from the very start, the allure of individualized mobility, and of profits for automobile manufacturers and construction companies, proved irresistible. Although the fatality rate has declined from 21 per 100,000 population in 1970 to 4.5 per 100,000 by 2009, the total number of fatalities remains substantial at 5,772 in 2009 (IRTAD 2010). How has this level of fatalities come to be considered acceptable collateral damage to the system of automobility in Japan and elsewhere?

There was little movement anywhere in the world towards fundamentally rethinking the system of automobility in a way that would bring the accident rate into line with that of rail or aviation until the Swedish Parliament introduced a "Vision Zero" policy in 1997 (Whitelegg and Haq 2006). This policy set the goal of zero traffic fatalities by 2020 and was based on a fundamental rejection of the cost benefit analysis that underlies decisions not to lower speed limits, regulate bumper heights, restrict licensing, or take any other measure necessary to eliminate fatalities. "Vision Zero" involves an ethical stance privileging human life and health over the economic benefits of one form of mobility. We may conclude that, as

it is predicated on the absolute primacy of the automobile, Vision Zero is utterly utopian. From the modest progress in accident reductions since 1997, it appears that the goal of zero accidents will not be achieved on its own (ibid.). Perhaps policies that prioritize mass transit and the bicycle will prove to be more radical critiques of the system of automobility. However, these alternatives are still largely limited to certain urban centers, and, in the best of cases, infrastructure will be necessary to ensure safety by the provision of more substantial separation from car traffic. In order to understand the possibility of radical change in the system of automobility, it may be helpful then to consider the dynamics of change underway in the area of energy policy following Fukushima. But first it is first necessary to understand the ways in which automobility established itself as intrinsic to modernity.

Harmonizing Cars and Humans

Concerned about the grim toll of traffic accidents in the 1960s and '70s, early commentators writing in Japanese automotive magazines discussed the need for the "harmonization of cars and humans" (*kuruma to hito no chowa*) (Kuruma no techo 1970f). The very high numbers of fatalities involving children who had used the streets as playgrounds until the 1950s and '60s led planners to construct more dedicated play areas in Japanese urban environments, one step towards "harmonization." School children were trained to walk on designated routes between home and school (*tsugakuro*) (figure 1).

Figure 1
Figure 2

In 2007, elementary schools in Kawagoe (Saitama Prefecture) and other cities had children make neighborhood maps that indicated all kinds of danger, many focusing on car traffic. The map above (Figure 2) reads: "Be careful of cars! Dangerous places are all around!" Competitions are held in which school children make traffic safety posters, many of which are displayed in city halls or police stations all over the country.

In urban centers, sidewalks have been gradually installed to replace the standard painted lines along the edges of roads, providing much-needed separation of pedestrian and automobile traffic. In the insurance advertisement below (Figure 3) from

the back of a 1963 Japan Automobile Federation magazine, the officer appears to instruct a child to ride on the sidewalk rather than in the street. The next image (Figure 4) from the same magazine is probably more typical of the pedestrian situation of the 1960s and the wording reads, "no sidewalks." Many Japanese streets, even in major cities, still lack sidewalks, as shown in the third image below (Figure 5), and even as the overall number of fatalities has dropped, pedestrian and bicycle fatalities were still almost 50% of traffic-related deaths in 2009 (National Police Agency 2009, 128).

Figure 3
Figure 4
Figure 5

The idea that cars and humans needed to be "harmonized" acknowledged that heavy metal objects propelled at high velocities had the potential to do great damage to human flesh. The trick was to find a way to allow them to co-exist without undue harm to humans. Harmonization did involve some urban planning. But more often than not it involved training pedestrians, and also attempts to develop a mature culture of driving which emphasized driving manners.

Articles in the Japan Automobile Federation's monthly magazine *JAFNews* in the 1960s suggest a widespread breakdown of traditional Japanese etiquette of the road (May 1963). One article criticized Japanese motorists for

practicing a kind of "scary surprise driving" (*okkana bikkuri unten*) (JAFNews 1967), for being impatient (*sekkachi*), and for having a misplaced sense of privilege that led to "terrible driving manners" (*doraibu mana- no warusa*) (JAFNews 1969) (Roth 2012).

The critique of Japanese driving appears in comparisons with other countries. In an article describing the visit of several JAF staff members to Australia, New Zealand, Tahiti and New Guinea (Feb 1970, p. 45-47), the author describes the Japanese group's impatience at the local drivers' very relaxed manner (esp. in Tahiti and New Guinea). In so doing, the author effectively critiqued what he portrays as the obsessively hurried quality of Japanese driving. The author of another article portrays Japanese driving as immature (*mijuku*), and reflecting a shallow history. He criticizes Japanese disdain towards the old rust buckets that foreigners drove around the U.S. military bases, noting that Americans understood cars as a functional part of daily life. The author criticizes Japanese drivers as being consumed by the immature desire to show off their cars and their driving (JAFNews 1969).

The remarkable cartoons of Umeda Hidetoshi, which appeared regularly on the pages of the monthly car magazine *Kuruma no techo* in 1968, express more than just ambivalence towards the new culture of automobiles and driving. In his surreal depictions, cars run amok in a world full of antipathy. The caption for Figure 6 (Feb 1968) reads, "Cut it with the noisy wild driving!" The caption for Figure 7 (July 1968) reads, "Just earned license, and driving with little progress." Perhaps the driver is nervous that his car has stalled while climbing a mountain road and enraged that other cars have passed him.
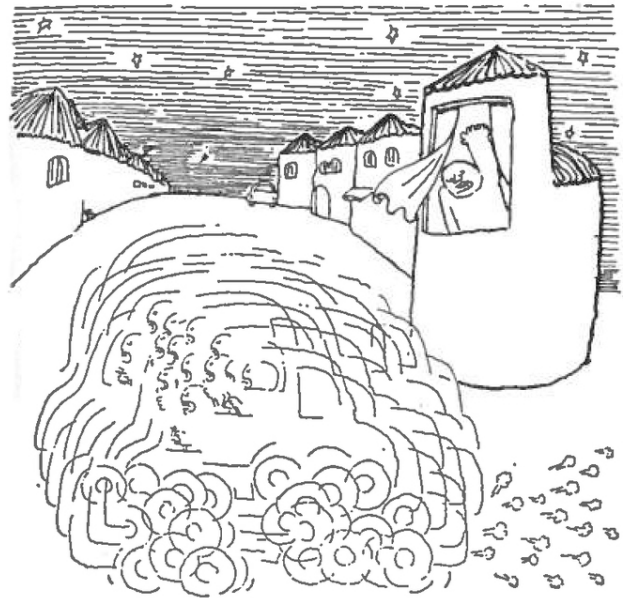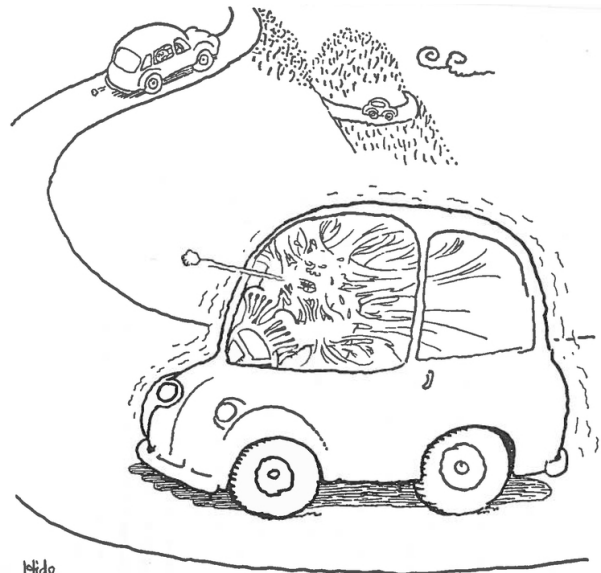
Figure 6
Figure 7

In Figure 8 (April 1968), the caption is somewhat more enigmatic: "He's carrying around our entire car histories." One of the figures in the background seems to be saying this to another about the driver in the center of

the monstrous amalgamation of cars. One's "car history" may refer to all the cars that a person has owned, as well as to his/her driving record. The image suggests the monstrous consumption and waste involved in automobile transport, and perhaps also the aggressive attitude of one who has a long driving history. The caption for Figure 9 (June 1968) reads, "Unbalance." In this illustration, the headlight tears through the darkness while the candle lightly twinkles, suggesting the imbalance between cars and humans.
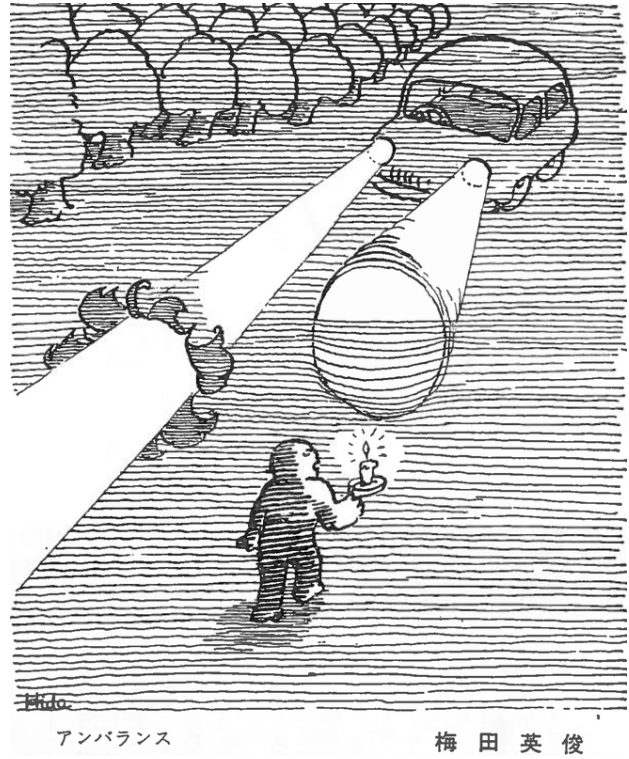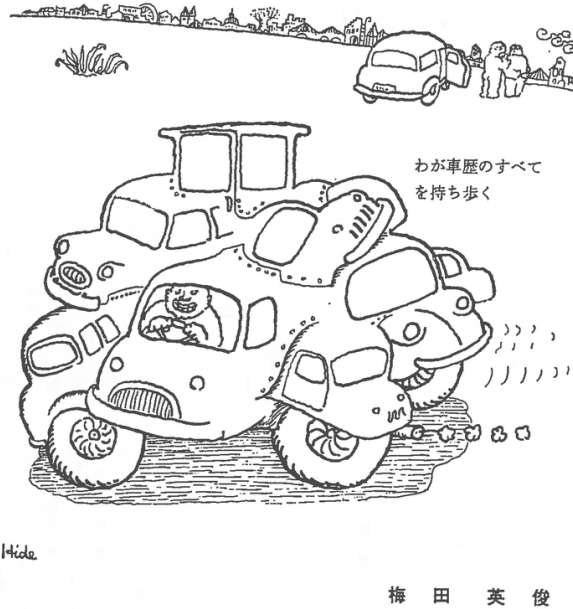

Figure 8
Figure 9

More stalled cars are depicted in Figures 10 and 11. The woman pushing the car in Figure 10 (Nov 1968) says, "It moved a bit, didn't it, dear?" Rather than pushing the car forward, the woman crumples the car, but is still contained within the black void that remains in the shape of the car. This may represent the shadow cast by the emerging car culture that has captured and contained society in all its dysfunction. The mechanic walking away from the car in Figure 11 (Oct 1968) says, "This is beyond my abilities." To the dismay of the furious driver, the rear of his car is filled with overheated biological intestines rather than a mechanical engine.
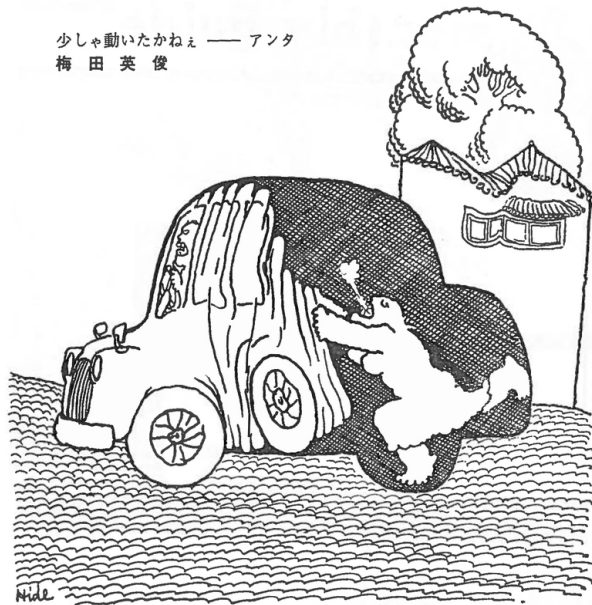
Figure 10
Figure 11

Of course, Umeda's dark vision was counterbalanced by the enthusiasm and excitement that surrounded cars in the early years of Japan's mass automobility. But it is clear that in the early years, people did not rush headlong to embrace automobility. Many were shocked by the carnage and the lack of civility on the roads.

Perspectives gradually shifted, however, in a more positive direction towards the proliferation of cars/mass automobility. While many authors in the 1960s and '70s depicted Japanese drivers as caught in an unfortunate middle ground between a more easy going pre-modern etiquette and a more mature driving culture, by the late 1970s, authors start to use international comparisons in favor of Japan. One 1979 article notes that China was still in an era "before the harmonization of cars and people" (車と人の調和以前 *kuruma to hito no chouwa izen*) (JAF 1979a), the implication being that while a mutually beneficial system of interaction had not yet developed in China, it had been largely accomplished in Japan. When a critique emerges of Japanese drivers it is in the context of a domestic rather than an international comparison. In another 1979 article summing up the proceedings of the eighth annual general meeting of the Kansai JAF committee for the realization of traffic safety (第８回JAF関西交通安全実行委員会総会 *Dai hachikai JAF kansai koutuu anzen jikkou iinkai soukai*), one committee member describes how smoothly traffic flowed in Tokyo compared to that in Osaka. He attributed this to a difference in driving manners. He associated Osaka's traffic jams with the way locals there constantly shouted or honked at each other whenever traffic merged (JAF 1979b).

By 1989, a regular column appeared in *JAF Mate* called "Car reports from around the world" (世界車だより*sekai kuruma dayori*). Many of these were critical of conditions in foreign countries. The report from Mexico City described the people as exceedingly courteous and friendly until they got behind the wheel of a car, whereupon they failed to respect any rule of priority (優先権なるルール *yuusenken naru ruuru*) (April 1989, p. 28). Another report notes the high rate of traffic accidents in Islamabad, Pakistan, and describes Pakistani drivers' love of passing, and unwillingness to use turn signals (Nov 1989, v. 27, n. 10, p. 28).

Another report from the U.S. describes the very high rate of auto theft and vandalism there, describing the U.S. as a "criminally advanced country" (犯罪先進国 *hanzai senshinkoku*). The author describes the signs Americans put in their car windows: "radio already stolen, nothing left to take." While an article two decades earlier suggested that American lack of care for the appearance of their cars indicated the maturity of American car culture (Dec 1969, p. 8-9), the author of this later report sees the decrepit condition of American cars as the pitiful strategy of owners who have no other recourse, yet another indicator of America's decline, and of Japan's relative gains (Oct 1989, v. 27, n. 9).

The growing perception in these articles of the relative maturity of Japan's car culture rests in part on the fact that the accident rate had declined to an "acceptable level". Rates per unit population and per unit distance driven had lowered substantially from their peak in 1971. However, in 1979 there were still almost 10,000 fatalities and 600,000 injuries (National Police Agency 1980), the numbers, of course, being far higher than they were prior to mass automobility. These figures suggest that the process of "harmonization" may also have involved the normalization of a certain level of accidents and human suffering.

In their excellent review of disaster research in anthropology, Anthony Oliver-Smith and Susanna Hoffman suggest that by focusing on crisis situations, anthropologists can move beyond the discipline's entrenched bias towards normality. Disasters allow researchers to see the ways in which societies change and adapt (or maladapt) (Oliver-Smith and Hoffman 2002, 9). Oliver-Smith and Hoffman's overview starts with a useful definition of disaster as the impact of a destructive event/agent on a group of people in a "socially and economically produced condition of vulnerability" resulting in a perceived threat to their way of life (Oliver-Smith and Hoffman 2001, 4). We may amplify

this definition and say that the destructive event may actually threaten life itself, and not just be perceived to threaten a way of life. This definition highlights vulnerability as socially produced, which suggests a political economy of mal/adaptation. But later their discussion of adaptation implies that very high costs may be acceptable as long as they are sustainable, that is, as long as they are spread over a population or over time and people appear willing to go about their lives assuming a certain margin of risk, without calling for radical change. By contrast, a perspective that focuses on normalization processes suggests that not all forms of sustainability are alike, and questions whether those that take a very high toll are acceptable. The normalization perspective questions the acceptability of a way of life, in this case, of automobility, which may have come to be taken for granted.

Compared to nuclear disasters, traffic accidents may be understood as normal tragedies in some sense because they occur in an ongoing trickle of separate incidents that typically involve individuals rather than entire communities. The annual accumulation of death and injury somehow does not pack the impact of singular disasters that occur all at once, despite the fact that the cumulative deaths and injuries of the former are far greater. Disasters are by definition out of the norm, and thus more likely to provoke attempts to achieve a more transformative response, at least as long as action is taken quickly before the impact fades.

Of course, the victims of traffic accidents do not experience their losses as normal. Debilitating injury or the loss of a loved one is no less tragic today than it was for people fifty years ago. Yet the system of automobility has been normalized for victims of accidents as well, in that, more often than not, they blame other drivers (or themselves), rarely questioning the place of the automobile within society. Along with scholars such as Raymond

Williams (1977) and James Scott (1986), anthropologist William Roseberry has critiqued the notion that hegemony can ever be absolute. Here, we see what he means when he suggests that hegemony should not be used to examine consent, but rather forms of struggle: "the ways in which the symbols that subordinate groups use to resist their domination are shaped by the process of domination itself" (Roseberry 1989, cited in Gordillo 2002: 271). Daniel Linger's study of a Brazilian rebellion also suggests that while hegemonic common sense may provide some of the tools for a rebellion, it rarely goes beyond the hegemonic discourse in a way that could produce a revolution, or a radical reconceptualization of the system itself (Linger 1993).

The system of automobility has come to encompass such a great part of contemporary society that many people find it difficult to imagine life without cars. Yet, in the early years of the automobile, prior to achieving its current hegemony that makes radical change difficult to imagine, the toll of accidents had a shock value that could not be ignored, and which in fact threatened disillusionment.

Normalizing automobility

In the 1960s and '70s, several mechanisms facilitated the normalization of automobility and its negative byproducts as an integral part of Japanese society. The legal and insurance systems, as well as a seemingly innocuous discourse on driving manners played important roles in this process.

By 1970, complex Japanese insurance policies and legal rules for compensation provided crucial support for those injured in accidents, and the families of those killed. Articles in popular car magazines explained the systems of insurance and legal liability to a broad public. A series of articles in the monthly magazine Kuruma no techo entitled "Traffic Accidents and the Law" (*koutsuu jiko to houritsu*) covered such issues as the three year statute of

limitations for compensation following accidents (Figure 12), mandatory and voluntary insurance coverage, and how to calculate compensation for the deaths of women and children in accidents (Figures 13 and 14)(Kuruma no techo 1970a, b, c, d, e).
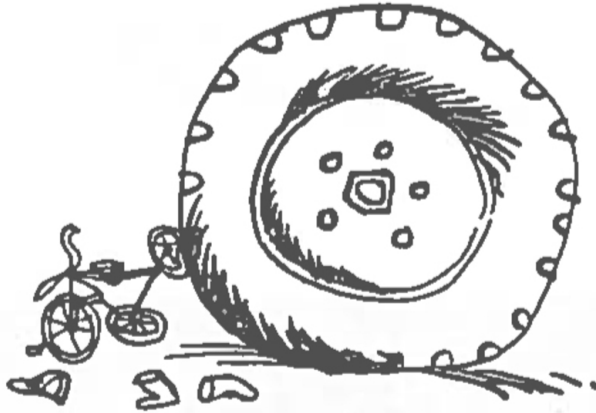
Figure 12
Figure 13
Figure 14

Japanese bookstores carried numerous how-to books on handling accident claims (Ramseyer and Nakazato 1989, 270). If automobility produced victims, it also spawned systems that cared for and compensated the injured, and provided financial compensation for victims, particularly those who died.

In the U.S. context, Sarah Jain has explored early legal cases in which automobiles were established as everyday objects, rather than intrinsically dangerous ones. Negligence was pinned on individual drivers. Jain shows that very early on, lawyers representing victims of traffic accidents made compelling arguments that automobiles should be placed in the same category as firearms, steamboats, and wild animals—as "dangerous instrumentalities" (Jain 2006, 68). Such a designation would have forced owners to be responsible for the careful stewardship of cars as potentially dangerous objects, and made them legally liable if hired drivers, friends or family members driving the car got into accidents. Courts ruled against the plaintiffs in these cases, and responsibility for accidents fell much more squarely on the shoulders of drivers, who often lacked the financial means to provide meaningful compensation to accident victims. Litigation

around traffic accidents has continued to focus on individual driver responsibility even while the consumer rights movement spearheaded by Ralph Nader in the 1960s established certain responsibilities of manufacturers (Jain 2006).

There has been less litigation in the Japanese context. Fault most often has been distributed to all the parties directly involved in traffic accidents in assessments of comparative negligence (Tanase 1990). Yet in cases involving fatalities, when greater financial loss and compensation was at stake, Ramseyer and Nakazato have shown that Japanese have acted "rationally" and asserted their legal rights to compensation more frequently and successfully than have Anglo-Americans (Ramseyer and Nakazato 1989, 272-3). The effects of the legal and insurance systems went beyond just compensating victims and punishing violators of traffic laws. The dissemination of information about the process by which blame for accidents was distributed, and victims compensated, had the effect of sidelining the notion that the system of automobility might be inherently dangerous. Rather, the legal and insurance systems identified, punished, and sometimes reformed "bad drivers," and insurance companies compensated victims for their suffering.

The discourse on driving manners also focused attention on bad drivers. Because they are not officially mandated, manners may indicate better than law or insurance the extent to which the system of automobility has been popularly embraced. In many articles, the term "*yuzuri-ai*" (mutual giving way) most typifies well-mannered driving (JAFNews 1968). Well-mannered drivers are considerate and give way to others while nuisance drivers cut others off. To some extent, the discourse on driving manners in the 1960s in Japan represented the imposition of middle class respectability onto the newly emerging context of automobility, much as we can observe going on in China today (see Notar 2010; Hessler 2010).

Yet the discourse on driving manners had a gravity that distinguishes it from other kinds of manners. Early commentators connected bad driving manners with accidents, injuries, and death (JAFNews 1970). Others linked bad manners to traffic congestion (JAFNews 1979). Good manners thus were seen as the key to the reduction in accidents, and the smooth flow of traffic. The interpretation of early commentators resonates with Eiko Ikegami's perspective of civility when she writes that

> civility may be thought of as a ritual technology of interpersonal exchanges that shapes a kind of intermediate zone of social relationships between the intimate and the hostile.... [C]ivility is particularly evident in the case of business etiquette, which provides transactional rules for workplace colleagues, strangers, or even strategic competitors.... (Ikegami 2005, 28)

The relative anonymity of interactions between drivers cocooned within their sound proofed and tinted automotive shells has the potential to lead to far more aggressive behavior than interactions involving face to face contact (Katz 1999), thus making it important for people to negotiate some mutually agreeable code of conduct on the road. Whether or not driving manners were always so effective, it is clear that many people saw them as a means of ensuring safe, smooth flowing traffic (Roth 2012). Manners, like laws, were collectively determined, yet it was up to individuals to live up to them.

Other studies of manners point to how the veneer of civility often serves to mask the interests of those in power—those most invested in the status quo social order (Miller and Bardsley 2011; Kumakawa 1999). Not all drivers adhere to the same set of expectations.

Drivers of Mazerattis and other luxury or sports cars may not feel constrained by the dictates of driving manners (Notar n.d.). Men may have a significantly different interpretation of driving manners than women do (Roth n.d.). It is precisely in the differential expectation of manners that class differences are delineated.

But there is little question that by promoting manners as a means of reducing accidents and facilitating the flow of traffic, authorities promoted the normalization of the system of automobility, diverting attention from its inherent dangers to the responsibility of the inidividual to drive in a controlled and orderly manner. As the years have gone by, few remember a time without cars. While sales of cars may have declined in recent years, the system of automobility continues to be fully embedded as an intrinsic part of modern Japanese society. Given how much it is taken for granted, and the economic interests at stake in sustaining it, what chance is there of any change? The recent shifts in nuclear energy policy, and the ongoing debate, may suggest possibilities for change.

Narrating trauma and envisioning alternatives

In the months since the Fukushima disaster, Japanese policy makers have been pressured to rethink energy policy. On May 6th, 2011, Prime Minister Kan halted power generation at the Hamaoka nuclear plant in Shizuoka (*Nikkei Weekly* 2011). Located just 180 kms upwind of Tokyo, Hamaoka sits atop the intersection of several fault lines, and has long been identified as Japan's most vulnerable nuclear plant (Moret 2004). This stoppage was followed on May 10th by the prime minister's decision to cancel the government's long-range plans to substantially increase nuclear power (Fackler 2011). The government had counted on nuclear power to offset the lack of domestic natural gas, oil, or coal reserves (DeWit 2011a; Kaneko 2011), as well as to help meet goals for

reduction of carbon emissions (Furukawa 2011). In fact, the ruling Democratic Party of Japan's energy policy prior to Fukushima was based on expanding nuclear energy in the next two decades with the construction of 14 new nuclear plants, boosting nuclear as a proportion of Japan's total energy production from the current 30% to more than 50% (DeWit 2011c). Now, real thought is being put into renewable alternatives, which had been long neglected by policy makers (DeWit 2011a; DeWit 2011b; Yasu 2011).

The victory of renewables is hardly a foregone conclusion. We can expect to see a pitched battle between those interests supporting alternatives, and entrenched interests working to restore nuclear power to its position of privilege. Until recently, just ten out of 54 reactors were functioning. One restarted in early November 2011, and pressure is building for others to follow suit. Nevertheless, the overall debate has been transformed and alternatives have the potential to grab a much larger share of the market in coming years. In part, this is possible because the sunk costs of the nuclear and overall urban infrastructure in Tohoku has been lost, freeing local governments to turn to alternative sources of power in a redevelopment effort.

But the shift in the debate also comes in part from the successful narration of the March 11th disasters as "cultural trauma" (Alexander 2004), marking that date as a "hinge of history" (Murphy 2011). It is not just the scale of the disaster that determines whether it will become a cultural trauma—a trauma that is shared, not just by those who suffered directly, but by a larger collectivity. Jeffrey Alexander argues that cultural trauma involves a social process through which specific groups are able to narrate claims of victimization to a wider audience through a variety of institutional arenas—religious, aesthetic, legal, scientific, mass media, state bureaucracy (Alexander 2004: 12-24). He writes:

It is by constructing cultural traumas that social groups, national societies, and sometimes even entire civilizations not only cognitively identify the existence and source of human suffering but "take on board" some significant responsibility for it. Insofar as they identify the cause of trauma, and thereby assume such moral responsibility, members of collectivities define their solidary relationships in ways that, in principle, allow them to share the sufferings of others. (Alexander 2004: 1)

Since almost everyone living in Japan lives in or near an earthquake zone spotted with nuclear plants, they share the vulnerability to disaster that residents of Fukushima and neighboring prefectures are currently experiencing. Moreover, radiation released from one source can easily spread to much wider areas via the air, water, soil, and food chain. This facilitates the widespread adoption of a 3/11 trauma narrative.

Popular mistrust of government policy was exacerbated by the announcement April 19 by the Ministry of Education, Culture, Sports, Science and Technology that the permissible level of radiation exposure could be increased from 1 millisievert per year to 20 (MEXT 2011). Allowing twenty times more radiation exposure essentially raises acceptable risks of cancer and other diseases by twenty times. This factor is multiplied for infants, who are three to four times more susceptible than adults (APJ Editors 2011).

These moves touched off strong protests by groups of parents of Fukushima children, and sympathizers. The protests, especially those by mothers of Fukushima children, identify a particularly compelling type of victim, and have garnered substantial sympathetic attention.

While the Ministry of Education has not formally rescinded its change in guidelines, spokesmen have stated that it has made it a goal of returning to the older 1 millisievert limit. As with any successful narrative, there is a clear attribution of responsibility, in this case to the nuclear industry and government regulators. The shared societal assumption about the superiority of nuclear power, so striking in the only nation to be the direct victims of nuclear weapons, has been transformed into a story of collusion between industry and government that has lined the pockets of special interests and put the health of children at risk.

Alexander emphasizes that his theory of cultural trauma is about how people understand, rather than how they experience suffering. Yet knowledge can transform material experience and social relations. When a population is able to share in the suffering of others, they will be compelled to help resolve the situation, forging a new ethic of volunteerism or one based on an older ethic of neighborliness (Sayre n.d.), demanding safer alternative sources of energy or at least much more stringent oversight of current sources, and demanding that victims be compensated and perpetrators brought to justice.

Despite the longstanding efforts of the nuclear industry to construct a positive narrative for itself (Sumihara 2003) as providing a low cost, low pollution, safe, and limitless supply of energy, the industry faces a real challenge following the Fukushima disaster. It cannot distract attention from itself since it concentrates all forms of expertise and power, unlike the system of automobility which distributes expertise among millions of individual drivers in addition to automotive engineers, safety designers, and urban planners. I suggest that several processes have helped to normalize accidents in the case of automobility. A focus on individual responsibility and "voluntary" risks rather than

the responsibility of technical experts or the government dissipates the impact of individual tragedy, the accumulation of which is not narrated as cultural trauma. The Fukushima nuclear meltdown cannot easily be normalized, for in addition to the concentration of expertise in the nuclear industry, disaster involves a concentrated time frame that shocks in a way that the everyday accumulation of accidents does not.

Early nuclear accidents have produced a surge in anti-nuclear movements but were more or less managed because the magnitude of the accidents were relatively small and produced few deaths. Similar efforts to manage the Fukushima nuclear disaster point to the fact that it has produced just one documented death in comparison to the 25,000 who were lost in the earthquake and tsunami. The difference after Fukushima is that the anti-nuclear movement has more successfully elaborated a trauma narrative and there is a widespread and justified fear that unmeasured radiation has contaminated the food supply and has already affected children, newborns, and those in utero.

Conclusion

Throughout the twentieth century, an entire culture of automobility has developed in the U.S. and shaped the very landscape we live in. What would our lives be like without suburban developments, strip malls, drive-thrus or road trips? I own a car, as does my wife. Together, we log about 15,000 miles per year. We couldn't drive any less unless one of us gave up our present jobs. One of the consequences of normalizing automobility in New England, where we live, was the eradication of the extensive network of trains and trolleys that linked so many small towns in the region in the early part of the twentieth century. This had the further effect of creating circumstances so dependent upon cars that life without them has become impractical for many people. The

hegemony of the automobile functions not only at an ideological level, but is embedded in the very landscape itself. Ultimately it is the inscription of ideology onto space that gives it a degree of stability even when it is contested (Gordillo 2002).

Japan has maintained an extensive rail network, even if certain rural lines have been pared back as those areas lost population to the cities and since the national rail system was privatized in the 1990s. That, plus geography, explain why Japanese drive far fewer miles on average each year than do Americans, and why Japanese suffer far fewer fatalities and injuries per unit population, even if the accident rate per unit of distance driven is very similar in the U.S. and Japan. We may conclude that, by maintaining a viable system of mass transit, Japanese have not normalized automobility to quite the extent that Americans have, particularly in major cities. The efforts taken in Portland, NYC, and some European cities to reduce automobile use in favor of bicycles and public transportation suggest that attitudes towards automobiles are changing incrementally. The decline in domestic Japanese auto sales points in this direction as well, although rural areas will continue to be heavily reliant on automobiles far into the future (discussion with Trent Maxey).

The technology for auto-piloted cars eventually may make possible a form of automobility with much lower accident rates than is possible with human drivers. Yet automobility in the U.S. has been so premised on the ideology of individual freedom (Seiler 2008) there will be great resistance to the implementation of fully automated automobility. Will such a transformation be more likely in Japan?

Currently, traffic deaths are narrated as "accidents"—unfortunate occurrences resulting from driver error or bad luck. What will it take to narrate them as statistical certainties produced by the system of automobility, which could be deprioritized in favor of some combination of public transit and bicycles? What will it take to bring about these transformations and normalize them in such a way that we may look back on the current era with incredulity?

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