Prosecuting professional mistake: Secondary victimization and a research agenda for criminology

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Abstract

This paper investigates a largely unexplored area in criminology: the secondary victimization of professionals whose mistake has been turned into a crime. It presents the criminal prosecution of professional mistake as something that is seen a growing problem in a number of safety-critical domains such as healthcare, aviation, shipping and construction, as it may seriously threaten safety initiatives in these fields. Secondary victimization of professionals accused of crime is then explored as a possible research topic in its own right, but seen to meet obstacles related to the field of victimology, as well as the epistemological propensities in both criminology and many safety-critical domains. The paper also presents some of the possible social factors behind increasing criminalization of professional mistake, a fruitful area for social-constructionist criminology.

Key Words: Professional mistake, second victim, criminalization, prosecution, accountability;

Introduction

> Why are we so hard on ourselves as a professional over drug errors? In spite of a no-blame policy there is still a lot of guilt and blame attached to mistakes. I have worked in a hospice for ten years in a difficult and demanding job. During the past year my mother has been very ill with cancer and I have struggled to work as her health has deteriorated. As a result of this I have made three errors. After the last error I was suspended from duty and charged with gross misconduct. This heavy-handed action was taken in spite of the fact that the patient was not harmed, required no remedial action, and there was no attempt to cover up the mistake. During my suspension I was told not to contact any of the nurses with whom I worked, so those who could have been most supportive to me did not know what had happened. I felt like a criminal, and I was so disgusted with the way I was treated that I resigned (Moran, 2008).

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Responses to professional mistake (e.g. drug misadministration, pilot error, or other mistakes that are made in the normal execution of professional duties) increasingly include the prosecution of individuals under local criminal statutes (Pandit, 2009; Ter Kulle, 2004; G. Thomas, 2007). Criminal prosecution has in fact become an automatic response to accidental death (or even just risk of death) in many countries (ICAO, 2007). These responses are often seen by those in the profession as unfair, unnecessary, intrusive and "heavy handed" (Moran, 2008) as well as detrimental for safety initiatives aimed at increasing honest disclosure and the free flow of safety information (FSF, 2006; GAIN, 2004; ICAO, 2007). The criminalization of professional mistake may represent a jurisprudential evolution similar to that of "hate crime" in the United States and other countries, for example, which went from a broad, amorphous social concept to a determinate legal construct inside of a few decades through judicial rhetoric and successive jurisprudential meaning-making (Jacobs & Henry, 1996; Phillips & Grattet, 2000).

For professional mistake, markers along this legal evolution can be found; for example Italy has a specific criminal category of causing "air disaster," and recently under this statute two airline pilots were sentenced to 10 years in jail after a crash that killed 19 people off the coast of Sicily (RTE, 2009), This matter is similar even in Sweden, where recently the introduction of the category "patient safety crime" was discussed (Akerberg, 2008). Such initiatives aim at the juridical concretization of a social construct that has itself proven enormously elusive: professional mistake, or "human error" which is more an attribution after-the-fact than a concrete category of uniquely deficient psychological performance (Woods, Dekker, Cook, Johannesen, & Sarter, 2010).

Concern about the prosecution of professional mistake

Most fields of safety-critical practice express concern about the prosecution of professional mistake, for example aviation (Michaels, 2008), shipping (Wallis, 2010), construction (ENR, 1997), chemical processing (Prakash, 1985), and healthcare (Grunsven, 1996; ISMP, 2007; Pandit, 2009; Skegg, 1998; Ukens, 2002). In aviation, prosecution in the wake of incidents and accidents has occurred in the Netherlands (Ruitenberg, 2002), England (S. Wilkinson, 1994), Spain (Brothers & Maynard, 2008), Italy, Greece, Cyprus, the United States and Taiwan, to name a few countries. A crash of a Scandinavian passenger aircraft that killed 118 people at Milan's Linate airport in 2001 led to the conviction of four air traffic control employees for multiple manslaughter (Learmount & Modola, 2004), and there is an ongoing trial for manslaughter of five managers of Helios Airways in both Greece and Cyprus in response to a fatal 2005 accident (Mail, 2009). France also has pilots in jail (Esler, 2009). By no means, however, is criminal prosecution of professional mistake limited to a particular area in the world or domain of practice. Pandit (p. 379) for instance explicitly states how in India "cases of doctors being subjected to criminal prosecution are on the increase" (Pandit, 2009).

The criminalization trend over the last fifteen years has exposed a lack of global uniformity of how and where the line between honest professional mistake and criminalization is drawn. This makes coordinated action very difficult (Esler, 2009). As one result, professionals are trying to become better at making evidence of mistake go away, and not report errors. "Practicing under the threat of prosecution can only serve to hide errors" (Chapman, 2009). Another effect, with possible parallels in other industries, is the practicing of "defensive medicine," which increases the use of unnecessary tests and procedures and fuels the rise in healthcare costs (Sharpe, 2004). A big concern with

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judicial action in the aftermath of accidents and incidents has focused on how it interferes with independent safety investigations, and destroys the willingness of people to voluntarily report errors and violations (Berlinger, 2005; Brous, 2008; Chapman, 2009; S. W. A. Dekker, 2007a, 2009; FSF, 2006; G. Thomas, 2007). The latter is known to be a critical ingredient to the creation of "safety cultures:" organizational cultures that encourage honest disclosure and open reflection on their own practices with the aim to constantly improve quality and safety of their products or services (Lauber, 1993). Such reflection, and the learning from failure that is encouraged (not to say, institutionalized) across industries with independent safety investigations, is hampered when professional mistake is criminalized. Here are two examples:

> While the US National Transportation Safety Board was investigating a 1999 pipeline explosion near Bellingham, Washington, that killed three people, federal prosecutors launched their own criminal probe. They reportedly pressured employees of the pipeline operator to talk. Several invoked the US Constitution's Fifth Amendment, which protects against self-incrimination. They refused to answer questions from Safety Board investigators as well as from the police.

> In the wake of a June 1995 crash of an Ansett de Havilland Dash 8 near Palmerston North in New Zealand, accident investigators turned the aircraft's cockpit voice recorder (CVR) over to criminal prosecutors. The crash killed four persons on the aircraft, but not the pilots, who faced possible charges of manslaughter. Pilots in New Zealand sued to block the police use of the CVR, saying recorders should only be used for safety and educational purposes. Prosecutors prevailed and regained access to the CVR, but pilots soon began disabling CVRs on their flights. Officials have crafted a plan that would permit police use of CVRs in future cases, provided New Zealand's High Court deemed it necessary (McKenna, 1999, pp. 47-48).

Entire professional bodies have proposed to increase their defensive posture in response to the criminalization trend, for example by being more careful with external liaisons, particularly when it comes to sharing safety-related information (ICAO, 2007). In Canada, for instance, some airlines have asked their regulator to sign a non-disclosure agreement before safety inspections are conducted. One of the reasons could be to protect the identity of employees who might, by disclosing information about incidents or violations, offer evidence of what can later be construed as criminal activity (Schmidt, 2009). Jointly, these effects create an adversarial stance that severely reduces openness, and could be counterproductive to longer-term societal efforts to achieve a balance between learning and accountability in safety-critical systems (Anon., 2009; Dekker, 2007; FSF, 2006; ISMP, 2007; Michaels, 2008; Pandit, 2009; Ter Kulle, 2004; G. Thomas, 2007).

There is not yet a coherent program of research into the legal developments and possible social factors behind this trend, nor into the psychosocial or psychological consequences of criminalization for those involved. One likely reason is that communities specializing in disciplines concerned with criminalization and victimization are segregated from those working on risk and safety. In this paper, I explore the largely under-investigated areas of research and possible (policy) intervention that the criminalization of professional mistake has created. The first is the use and evolution of general hazard statutes (mostly derived from road traffic laws) and applying them to professional safety-

critical domains, which has created concerns about fairness, scarce judicial resource usage, and requisite knowledge on part of a country's judiciary.

A second important area is that of secondary victimization (i.e. victimization of the professional involved in the incident/accident by turning him or her into a criminal suspect), a problem that could borrow from research in victimology but that seems hampered by several practical as well as theoretical obstacles. The second is the criminological question of shifting categories and definitions of what constitutes as acceptable behavior, and which societal factors inspire a growing intolerance of professional mistake. I conclude by reviewing alternative responses to incidents/accidents and what can be seen as societal responsibility and ethical reactions to complex failures. This hopefully stimulates debate on professional mistake, safety, and secondary victimization, making it into a topic of criminological research in its own right.

General danger statutes and the fairness and wisdom of criminalizing professional mistake

Over the last fifteen years, doubts have increasingly been voiced about the fairness of criminalizing errors that are made in the course of executing normal professional duties with no criminal intent (Mee, 2007; A. F. Merry & Peck, 1995; Moran, 2008; Reissner, 2009). There is also concern about the capriciousness of criminal prosecution (e.g. one nurse was criminally convicted for a medication administration error of a kind that was reported to the regulator by others more than three hundred times that year alone (Ödegård, 2007). Doubts also exist about the ability of a judiciary to make sense of the messy details of practice in a safety-critical domain (R. E. Anderson, 2005), let alone resist common biases of outcome knowledge and hindsight in adjudicating people's performance (J. C. Anderson, Jennings, Lowe, & Reckers, 1997; Arkes, Saville, Wortmann, & Harkness, 1981; Berlin, 2000; Dripps, 2003; Hawkins & Hastie, 1990; Hugh & Dekker, 2009; LaBine & LaBine, 1996; Laudan, 2006; Roese & Olson, 1996).

Doubts about a judiciary's ability to fairly adjudicate in the wake of professional mistake are amplified by a broad research consensus in safety work—that professional mistake is highly particular and contingent. The mistakes made by professionals in the normal pursuit of their duties are heavily anchored to and embedded in normal contexts in which people perform skilled work under conditions of resource constraints and outcome uncertainty (Woods, et al., 2010). This has raised significant skepticism about whether professional mistakes can be punished or sanctioned away—since they are an inevitable part of the complex system in which they are generated (Amalberti, 2001, 2006; Clarke & Perrow, 1996; Leveson, 2002). "Errors" and other undesired outcomes are the inevitable product of the structural interactive complexity and tight coupling of most safety-critical systems (Perrow, 1984). They occur, not because unreliable people undermine otherwise smooth and well-functioning organizational processes, rather they emerge non-randomly as the side effects of well-organized processes (Pidgeon & O'Leary, 2000). Mistake in complex systems seems inevitable, no matter what sanction it might invite (Vaughan, 1996). For example, as pointed out about drug errors,

> "Dispensing mistakes happen. And even with the introduction of robots and Standard Operating Procedures, the Utopian ideal of a world without errors is closer to fantasy than reality." (Chapman, 2009)

This necessary ubiquity of professional mistake has been matched by the wide interpretability of the laws under which criminal prosecution of professionals occurs. These are mostly derived from general hazard statutes from particular road traffic laws which criminalize the reckless endangerment of other people or property (Esler, 2009; Tingvall & Lie, 2010). The leeway in such statutes considered for acceptable behavior is of course important for any open and democratic justice system. But it has led to very general risk statutes, which can, depending on prosecutorial ambition, criminalize anything from starting an aircraft engine to actually taking off:

> It is prohibited to take part in air traffic or provide air traffic services in such a way that persons or property are endangered or could be endangered (Netherlands Aviation Act, §5.3).

The Aviation Act §5.3, has been used explicitly in the Netherlands for prosecuting cases of "pilot error". Similar laws are on the books in the United States:

> (a) No person may operate an aircraft in a careless or reckless manner so as to endanger the life and property of others.
> (b) No person may operate an aircraft, other than for the purpose of air navigation, on any part of the surface of an airport used by aircraft for air commerce (including areas used by those aircraft for receiving or discharging persons or cargo), in a careless or reckless manner so as to endanger the life and property of others (US Federal Aviation Regulation (FAR) 91.13).

The prosecution of professionals through such wide statutes can distort the allocation of scarce societal resources within the criminal justice system (Jacobs & Henry, 1996) when there are already bodies in place (e.g. accident investigation boards, medical discipline committees) that could be better positioned to deal effectively with the aftermath of failure in those systems (FSF, 2006). In addition, systemic interventions (through new technology) are commonly known to have better safety effects than the prosecution of individuals:

> The addition of anti-hypoxic devices to anesthetic machines and the widespread adoption of pulse oximetry have been much more effective in reducing accidents in relation to the administration of adequate concentrations of oxygen to anesthetized patients than has the conviction for manslaughter of an anesthetist who omitted to give oxygen to a child in 1982 (A. F. Merry & Peck, 1995).

Interestingly, such insights are sometimes expressed by the victims of the results of the professional mistake, which puts them in sharp contrast to the focus of criminal prosecution on the single acts of single people. The mother of a 3-month old killed as a result of a medication misadministration, for instance, stopped seeing the point of the criminal trial against the nurse long before the proceedings had concluded in a guilty verdict (Ödegård, 2007). And after an air traffic controller was jailed in the wake of a 1976 accident over Zagreb that killed 176 people, the father of one of the victims led a campaign to prevent the controller's jailing. His campaign was unsuccessful, but the father joined efforts to free the controller after he had served two years (Geoffrey Thomas, 2002). Jailing individuals after system failure can be seen as unfair and counterproductive

even by the primary victims (Mellema, 2000). By putting the blame on the professional, the organization and other people involved get off the hook. This oversimplifies the complexity of contributory events. Most importantly, it may not give primary victims confidence that a similar incident will be prevented in the future. These results align with the lack of conclusive evidence about the extent to which the purposes of criminal justice (e.g. retribution, rehabilitation, prevention and deterrence—specific or general) are served by the criminalization of professional mistake (Dekker, 2007; Dekker & Hugh, 2009; Merry & McCall Smith, 2001).

Secondary victimization of professionals

For most professionals, a mistake that results in an incident, adverse event or inadvertent death is antithetical to their identities. It militates against their goals of delivering safe and efficient service, alleviating suffering, offering treatment, restoring or promoting health—depending on what world they work in (Berlinger, 2005; Sharpe, 2004; Wolf, 1994). Such errors, and their consequences, are experienced as a devastating failure to live up to the deontological commitment, the duty ethic inherent in the profession, and a betrayal of the trust that patients or passengers have given it. The memory of mistake typically stays with professionals for many years (Serembus, Wolf, & Youngblood, 2001). Having made a consequential mistake in a job whose mandate is in part their prevention, can cause excessive stress, depression, anxiety and other psychological ill-health (Berlinger, 2005; Lerner & Tetlock, 1999). Feelings of guilt and self-blame, are also very common in such instances. Professionals can deny the role of the system or organization in spawning their mistake (Meurier, Vincent, & Parmar, 1998; Snook, 2000), despite the large research base to the contrary (Woods, et al., 2010). For example, Albert Wu (p. 726) related his experience as a junior doctor:

> Virtually every practitioner knows the sickening realization of making a bad mistake. You feel singled out and exposed—seized by the instinct to see if anyone has noticed. You agonize about what to do, whether to tell anyone, what to say. Later, the event replays itself over and over in your mind. You question your competence but fear being discovered. You know you should confess, but dread the prospect of potential punishment and of the patient's anger. You may become overly attentive to the patient or family, lamenting the failure to do so earlier and, if you haven't told them, wondering if they know (Wu, 2000).

One study, based on interviews with over thirty "second victims" in healthcare, defined them as practitioners who made a mistake and felt as though they had failed the patient, second-guessed their clinical skills, knowledge base and career choice (Scott, Hirschinger, & Cox, 2009). The study identified six stages in the second victim phenomenon. These were (1) chaos and accident response, which involved an intense inquiry and verification of exactly what went wrong, (2) intrusive reflections and haunted re-enactments that triggered feelings of inadequacy and periods of self-isolation, (3) restoring personal integrity in part by seeking support from colleagues, friends or family members (something that was often unsuccessful because these other people would lack the experience and insight to understand the impact a mistake had on the professional's identity), (4) an awakening that the organization will respond to the event in a certain way. This is when people typically become concerned about litigation and other legal and

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professional consequences and engage in ways to endure the various inquiries, (5) obtaining emotional first aid, which also became more difficult because by this time it was not certain who could be trusted, whom they could "safely" confide in, and finally (6) moving on after having made the mistake and accepted its consequences.

The study (Scott, et al., 2009) showed how an incident affected the professional in three ways: people dropping out (changing professional role, moving to a different practice location or leaving the field altogether), surviving (practicing at acceptable levels but continuing to be haunted by the event) or thriving (e.g. by changing the way the practiced, becoming an advocate for first or second victims). In the most constructive response, professionals try to process and learn from the mistake, discussing details of their error with their employer, contributing to its systematic investigation and helping with putting safety checks in place (Christensen, Levinson, & Dunn, 1992). The role of the organization in facilitating such coping (e.g. through peer and managerial support and appropriate structures and processes for learning from failure) is hugely important (S. W. A. Dekker & Laursen, 2007). Without such support, professionals are more likely to hide the mistake or its consequences from the organization, and shun other possible sources of succor such as family, friends, or colleagues, leaving them isolated and vulnerable (Moran, 2008). Instead, they might try to get by alone with making atonement to those harmed by the mistake (Christensen, et al., 1992).

Peer support and employee assistance

Research on employee assistance programs has suggested that it is crucial that employees do not get constructed as if they are the source of the problem and treated as somehow "troubled" as opposed to "normal" employees (Cooper & Payne, 1988; S. W. A. Dekker & Laursen, 2007). Aviation, and particularly air traffic control, has instituted critical incident stress management (CISM) programs in a number of countries. These voluntary peer programs have evolved from stress management interventions in particularly fire fighting and rescue services personnel, and were first treated with suspicion by professionals because of the stigma of psychological infirmity its use might attract. It is now accepted and standard procedure in many organizations, however. Management has noticed that CISM helps professionals reenter productive operational life sooner after an incident, which benefits both organization and individual (Leonhardt & Vogt, 2006). Whereas healthcare has recognized the significance of the "second victim," there is a lag in the systematization relative to other industries, leaving the structure and content of post–adverse event responses largely up to the individual (Scott, et al., 2009; Wu, 2000).

Neither CISM, nor people's progress through post–incident phases has been investigated specifically for the influence of (criminal) prosecution. Prosecution affirms feelings of guilt and self-blame and exacerbates their effects, which are the sorts that are linked to poor outcomes in other criminological settings (Christensen, et al., 1992; Friel, White, & Alistair, 2008). At the same time, prosecution could destroy most opportunities for intervention by the employer or peers, because it introduces new equations of mistrust, which can already be a problem after an adverse event (Scott, et al., 2009). If the organization has a risk management function, for example (which most hospitals do), there could be organizational expediency and economy in not combating criminal prosecution of an employee, and in fact termination of that employee becomes easier and sometimes desirable: it legitimately and publicly locates the source of the organization's safety problems in that single individual (though, as said above, first victims do not necessarily

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accept this (Geoffrey Thomas, 2002)). Meaningful access could be cut off entirely when the professional is incarcerated (Learmount & Modola, 2004), and, not surprisingly, the prognosis for psychological health is never very good in that case (Friel, et al., 2008).

Secondary victimization after professional mistake: Research needs and obstacles

Secondary victimization of professionals prosecuted for mistake has hardly been a research topic in its own right. The few studies that have been conducted, focused either on the effects of having been involved in an incident independent of any organizational or legal sanction, or on the effects of civil litigation, and then almost exclusively in healthcare (Sharpe, 2004). It seems that much research has yet to be initiated to address professionals' experience of fatal outcomes and the psychological consequences of their subsequent criminalization. When professional mistake gets criminalized, it can lead to sick leave, divorce, exit from the profession permanently or committing suicide (Chapman, 2009; Meszaros & Fischer-Danzinger, 2000; Moran, 2008; Tyler, 2003; Wolf, 1994). Another response to litigation, though rare, is anger and counter-attack, for example by filing a defamation lawsuit (R. E. Anderson, 2005; Sharpe, 2004). Criminalization can also have consequences for a person's livelihood (and his or her family), as licenses to practice may be revoked automatically (though, perversely, not always (Ödegård, 2007)) which in turn can generate a whole new layer of anxiety and stress. One pharmacist, whose medication error ended in the death of two patients, suffered from depression and anxiety to such an extent that he eventually stabbed his wife to death and injured his daughter with a knife (Serembus, et al., 2001).

An important psychological consequence to be investigated empirically is the link between criminalization, professional identity and ability, particularly the ability to continue functioning as safe and ethical practitioners. Criminalization interferes with honest disclosure, which has ethical consequences for most professionals (and practical consequences for their organizations and industry). Also, accountability demands that are seen as unreasonable and illegitimate (e.g. those imposed by the criminal justice system) can interfere with the conscientious execution of safety-critical work. There is some experimental suggestion that with unreasonable accountability demands, cognitive effort gets deflected into the management of liability risks to the detriment of task-orientation (Lerner & Tetlock, 1999) which in turn could have adverse safety consequences. This could do with more substantive empirical corroboration in safety-critical fields. Further, research on perceived fairness (Menkel-Meadow, 2000), secondary victimization and post-traumatic stress and criminal responsibility (Friel, et al., 2008) should be extended to include professionals charged with a crime.

There are important obstacles faced in developing work in this area. First, victimization research may in part have been hampered by its roots in advocacy and the defense of human rights, sometimes perhaps at the cost of developing victimology as a field of scientific inquiry (Elias, 1988; Fattah, 1992; Parsonage, 1979). This means that interesting tensions and affinities across relevant work are not as clearly visible yet, and that theoretical matters for debate have to be delineated through the sort of dialogue critical to intellectual development. Second, work on secondary victimization has scarcely focused on the "perpetrator" of the alleged crime as second victim, but rather on people in the immediate context of the first victim (e.g. his or her family). Their psychiatric needs have been the object of study, for example (Case, 2004), as has the harm caused to first victims by criminal proceedings against their perpetrator (Orth, 2002). None of these studies allow

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the perpetrator-as-second-victim to even be constructed as such. The dehumanization of possible victims is an additional social process that mediates the responsibility other people will feel toward them and their fates (Cehajic, Brown, & González, 2009), and mild forms of this can be seen when professionals under suspicion are no longer allowed to wear uniforms, badges, entry cards or other in-group insignia (S. W. A. Dekker, 2003). In healthcare, yet another factor is the conversion necessary for seeing the caregiver suddenly as one in need of care, something that can be quite difficult (ISMP, 2007).

These obstacles are consistent with a broader theoretical issue. Criminology has long adhered to a fairly narrow scientific essentialism that sees social facts as stable across observers and observations, as inert and independent from the moment of observation and the language used to describe the observed "fact" (Bjarup, 2005; Rafter, 1990). This aligns with fields such as aviation and medicine, where the nature of professional mistake is often taken as essential and unproblematic (Bosk, 2003; Croft, 2001). Mistakes happen, they can be observed, they have consequences, and have a concrete ethical import (Helmreich, 2000). Such an epistemology is hostile to characterizations of "error" (and, by extension, crime, or the criminalization of such "error") as relative, historically located and observer-contingent constructions. The positivist, engineering- and andro-centric biases that permeate safety-critical fields such as aviation, medicine, shipping or construction make that both the "mistake" and any "criminal" aspects are seen as non-arbitrary empirical facts that must be dealt with by the legitimated authorities.

For instance, responding to the 1996 ValuJet accident in the USA, where mechanics loaded oxygen generators into the cargo hold of a DC-9, which subsequently caught fire, the editor of *Aviation Week and Space Technology* "strongly believed the failure of SabreTech employees to put caps on oxygen generators constituted willful negligence that led to the killing of 110 passengers and crew. Prosecutors were right to bring chargers. There has to be some fear that not doing one's job correctly could lead to prosecution" (David M. North, 2000). Similarly, punitive approaches to non-compliance (e.g. handwashing) are favored by some inside of healthcare (Dekker & Hugh, 2009).

There is, in such commentaries, no room for critical reflection on who constructed the alleged act as a crime, and from what political or social force field this construction may have emerged (Merton, 1938; Summerton & Berner, 2003), nor much need for a thoughtful analysis of the possible post-conditions of creating secondary victims. The resulting theoretical position in much safety research may have sacrificed engagement with the criminalization of mistake as a social-scientific issue, leaving the discovery of any negative side effects to the practitioners themselves. Indeed, such a realization may have moved North (D. M. North, 2002) to rescind his position two years later, when he opined that learning from accidents and criminal prosecution go together like "oil and water, cats and dogs," and that "criminal probes do not mix well with aviation accident inquiries" (p. 70).

Criminology, social constructions and the prosecution of professional mistake

Criminological research has increasingly been taken into social-constructionist territory (Engbersen & Van der Leun, 2001; Rafter, 1990) where the focus is turned away from the putatively inherent deviance of acts and onto how crimes and criminality are socially constituted (Christie, 2004). This could be a profitable direction of inquiry for a criminalization trend, as it aligns with traditional sociological concerns about order/disorder (Michel Foucault, 1967) and the role of social control in policing the

boundary between the two (Merton, 1938; Morrill, Snyderman, & Dawson, 1997). The social-constructionist line of sociological research into deviance has accelerated since Howard Becker (Becker, 1963), who argued that those who draw the lines between acceptable and unacceptable behavior are perhaps more interesting than those who cross them, that "… deviance is created by society … not a quality of the act the person commits, but rather a consequence of the application by others of rules and sanctions to an "offender". The deviant is the one to whom the label has successfully been applied" (p. 9). From this position, culpability arises out of our ways of seeing and describing acts. It is constructed, or "constituted" (Christie, 2004): "Crime is a product of cultural, social and mental processes. For all acts, including those seen as unwanted, there are dozens of possible alternatives to their understanding: bad, mad, evil, misplaced honour, youth bravado, political heroism—or crime." (p. 10).

This has shifted a part of the criminological research problem. If people make rules or draw lines whose transgression constitutes a crime, then the drawing of the rules deserves more sociological attention than their breaking. Indeed, Becker's argument encouraged a considerable amount of research into where these rules came from (Rafter, 1990), like the work of Erikson (Erikson, 1966) and Foucault, who explicitly forced post-structuralist theory into criminal justice history with *Discipline and Punish* (Michel Foucault, 1977), where knowledge doesn't reflect as much as it helps create the categories we see (or are even able to see). This construction is subject to change in part because, for Foucault, it is always an arena for political contest, for the redistribution of power and control through society (Michel Foucault, 1982). Who are likely to become moral entrepreneurs, inventing and applying and imposing new rules, new lines that separate legality from illegality? How do these rules help preserve or upset the status quo, particularly when it comes to the distribution of power in a society? This represents a whole new set of questions for criminology and crime research: away from the perpetrators, and toward the groups that construct them and try to control them (see also Garland (Garland, 1993, 2002) for his post-structuralist follow-ups on the history of crime control). It has also made possible the notion of "over-criminalization" (Husak, 2008), something that people in safety-critical fields would argue is happening with the prosecution of their professionals (ICAO, 2007; ISMP, 2007).

Evolution of social perspectives on accidents and culpability

Although forceful, the social-constructionist or post-structuralist argument does not explain specific criminological trends, or shifts in societal assessments of criminality at specific times in history—only that such shifts occur and that they, in general social terms, are the result of societal renegotiations in what is seen as acceptable behavior. Why professionals are more likely to be criminally prosecuted today as compared to, say, forty years ago, is not in itself explained. One answer, however, can be sought in the relatively modern notion of "accident" itself (Beck, 1992; Green, 2003). Until the scientific revolution in the seventeenth century, societies had little need for a concept like accident. Religion and superstition supplied explanatory models for misfortune, and where misfortune was going to occur was random, uncontrollable, and unknowable. This idea waned throughout the modern period, to be gradually replaced by a late nineteenth-century model that saw accidents as unfortunate but otherwise meaningless coincidences of space and time (Green, 2003); as random physical events that revealed nothing of interest about the human or organizational work behind them.

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Over the last 30 years, however, the societal interpretation of accidents has shifted again. Failures such as the Three Mile Island nuclear accident in 1973 and the collision of two jumbo jets at Tenerife in 1977 moved accidents back onto the center stage of our societies and Western society is said to be much more "risk conscious" (I. Wilkinson, 2001). No longer do they take accidents in stride as meaningless, uncontrollable and occasional events. Accidents today are seen as evidence that a particular risk was not managed well enough. And behind such mismanagement there are people, single persons, or single acts of omission or commission by those persons (Bittle & Snider, 2006; Green, 2003). Accidents are failures of risk management, which opens the door for the search (judicial or otherwise) for someone who did not manage risk well. The accident can go, or even needs to go, on somebody's account (Douglas, 1992)

What seems to have accompanied the transition over the last thirty years, however, is a gradual reduction in the acceptance of risk altogether (Beck, 1992), and the expectation that some safety-critical activities are entirely accident-free, with a zero-tolerance of failure. Some safety-critical systems have their own success to thank for this: their increasingly flawless performance may have sponsored a societal belief in their infallibility and a concomitant political intolerance of failure (Amalberti, 2001). This means that almost of necessity, explanations of residual failure in these systems get deflected toward the vicissitudes of individual culprits (Perrow, 1984). The end of the twentieth century has also seen an increase in the democratization and accessibility of knowledge, as well as consumer vocalism and activism. These can put the failings of complex systems (or alleged failings of individuals in them) on fuller display (Anon., 2005; Pandit, 2009), and animate societal responses to them.

Media, populism and politics

Research into the influence of contemporary media on such responses to human error is underdeveloped, but the media doubtlessly enjoys a strong role in celebrating certain accidents, while being able to ignore others (S. W. A. Dekker, 2007b; Ditton & Duffy, 1983; Ödegård, 2007; Palmer, Emanuel, & Woods, 2001). A recent study links cultural and political populism to the punitive issues of a country's criminal justice system (Miyazawa, 2008), and media coverage of an event has been shown to articulate and animate social reactions to the point of constructing anti-heroes (Elkin, 1955; McLean & Elkind, 2004) and their crimes (S. W. A. Dekker, 2007b; Ericson, 1995; Innes, 2004; Jacobs & Henry, 1996; Tuchman, 1978). There is a strong basis to believe that the coverage of, and discourse surrounding social issues (e.g. hate crime, immigration, and by extension: accidents and human error) can be linked at least in part to political populism, judicial responses and the criminalization of new categories of human action (Blackwelder, 1996; Engbersen & Van der Leun, 2001; Husak, 2008; Jacobs & Henry, 1996; Phillips & Grattet, 2000). This could be seen as amounting to a strong democratic project (which defenders of media sensationalism in the wake of an accident or other undesirable social event likely would (Anon., 2005; M. Foucault, 1975)), where the polity, through its judicial system, responds to and "fairly" represents the concerns of the society in which it operates.

As it seems common in populist responses to perceive societal perils (Kieckhefer, 1976; Miyazawa, 2008), the constructed threat (e.g. human error, hate crime) is often a stand–in for more diffuse social concerns (Becker, 1963; Ben-Yehuda, 1983; Foucault, 1975). Anxiety, or undifferentiated and undirected fear, gets projected onto easily identifiable

symbols normative transgression. Sociology has linked modern society and its anonymity and manifold uncertainties with anxiety—as a response to social processes and cultural experiences (I. Wilkinson, 2001). Disembedding (the decreasing relevance of place or locality), moral fragmentation and secularization, and concomitant fears of anomie (a wholesale erosion of norms and rules and adherence to them) are cited as sources of social anxiety in the late modern age (Giddens, 1991; Karmen, 1994). According to this notion, expressing societal intolerance with pilot errors or drug mis-administrations is related to the management of such anxiety. Enhancing the visibility of deviance by criminalizing it, by putting pilots or nurses on trial, performs ancillary cultural work by highlighting moral boundaries. There is symbolic value in this (Rock, 1998). It assuages society's members by giving them some assurance that lines still exist (Erikson, 1966; Foucault, 1975), consistent with the links between populism, criminalization, and media sensationalism (Anon., 2005; Ditton & Duffy, 1983; Miyazawa, 2008).

An often-used example here is the great European witch hunt, that lasted from the early decades of the 14th century until the mid-17th century (Midelfort, 1972). Although victimization was highly contingent and locally determined and often dependent on which neighbors did what to each other (Kieckhefer, 1976), a broader societal anxiety has been linked to the construction and cultural-symbolic value of a criminal category of witchcraft (Ben-Yehuda, 1983). Europe's transition out of the medieval and into the modern period brought huge societal changes with urbanization, a crumbling of the feudal social order, the rise of new technology and the changing roles of women and families marked (Levack, 1987) as well as the disintegration and fragmentation of the moral center of the Roman Catholic church. There may also have been other (profitable) sources for the construction of witchcraft as punishable crime. For example, Leland Estes suggested that during the 16th and 17th centuries, doctors could have helped fan witch hunts in some cases when they found themselves incapable of explaining—much less doing anything about—afflictions such as pest and cholera. They would have wanted to deflect attention from their own shortcomings (Levack, 1987).

Neo-Durkheimian counter-critique

Such arguments, however, have been critiqued as being too Neo-Durkheimian (Goode, 1994; Rock, 1998): crime and criminality are seen as standing for something else; their social construction is not about the crimes, but about what makes people believe in their existence. "Labeling theory," in which crimes don't have intrinsic or essential criminal properties, but are just those acts which are labeled as "criminal" would, in the limit, mean that simply because people are prosecuted for mistake, they are almost assuredly guilty of a crime (Goode, 1994) in sharp contradistinction to those who were not rounded up (even if it was the same kind of "error" (Ödegård, 2007)). This randomness, however, does not hold up in the case of criminalizing professional mistake. Prosecution always has a clear trigger (an aircraft or bus accident, a death due to a medication overdose) and can link the event to a particular act by a particular person. Also, a Neo-Durkheimian argument could be helped by explicit statements of the judiciary that the conviction of particular practitioners serves as an example for others who carry the duty of care in a safety-critical industry (e.g. a nurse accused of manslaughter in a medication error (Dekker, 2007)). And finally, in a parallel to the elite-engineered witch hunt citing and criminalizing professional mistake in the wake of an accident might have ancillary functions. As Perrow (p. 146) pointed out:

> …if this attribution can be made, that is the end of serious inquiry. Finding that faulty designs were responsible would entail enormous shutdown and retrofitting costs; finding that management was responsible would threaten those in charge, but finding that operators were responsible preserves the system…(Perrow, 1984)

Such ideas have given rise to a Marxist interpretation of criminalizing professional mistake (Goode, 1994). People who are troublesome to the existing social and economic order (e.g. by crashing an expensive airplane that might reveal systemic design shortcomings, or committing a drug misadministration error that might expose shortcomings in hospital funding and routines) get criminalized, but it is actually the existing social order that is illegitimate and repressive, and the ones who have the power to sustain that order (e.g. corporations) are the "real" deviants. The seemingly greater prevalence of prosecuting female nurses for criminal negligence (while male doctors have so far mostly been sued in civil courts (Pandit, 2009)) could be seen as an expression of unequal power and gender distributions along the medical competence hierarchy (Ödegård, 2007; Sharpe, 2004), and thus subject for Marxist or feminist critique (Beaver, 2002; Osborne, Blais, & Hayes, 1999).

The constructionist position on criminality ultimately raises the question of who—in a society or an organization or a profession—gets the power to draw the line between acceptable and unacceptable behavior, to draw moral boundary, and who gets to enforce it (S. W. A. Dekker, 2009; Michel Foucault, 1982; Morrill, et al., 1997; Osborne, et al., 1999). From this point of view, the line is not a location but a judgment, influenced by politics, power, sensationalism, populism.

Conclusion

The secondary victimization of professionals whose mistake is criminalized has been under investigated. Healthcare, leading the field in this regard, has started to research and document the psychological effects of caregivers (particularly nurses) who have been involved in an adverse event over the last fifteen years. These studies, however, have not systematically included an investigation of the psychological effects of criminal prosecution. In the meantime, criminal prosecution of professionals such as nurses, pilots, doctors, air traffic controllers, or ship captains is increasingly seen as a threat to safety. Its effects on willingness to report and disclose safety-related information is well-documented, particularly in a field such as aviation which has also germinated a number of cross-industry initiatives aimed at mitigating the effects of criminal prosecution.

Various industries and countries have moved to different solutions. Most initiatives remain local and contingent on national law (under which most criminal prosecution for human error occurs). Some initiatives locate the power to draw the line between acceptable and permissible performance more strongly inside of professions, by a re-asserted role of ethics or similar committees. At least one country has installed a so-called judge of instruction, who functions as a go-between before a prosecutor can go ahead with a case against a professional, by checking the prosecutor's homework and ambitions and weighing other stakeholders' interests (which can work as long as those are fairly and equitably represented) (S. W. A. Dekker, 2009). Other initiatives, most of them local or industry specific, are being developed and range from raising awareness and rallying opinion (FSF, 2006; GAIN, 2004; ICAO, 2007), to alternative dispute resolution and

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mediation and the legal protection of certain statements by professionals in the wake of failure (e.g. "I'm sorry" laws (Berlinger, 2005; Sharpe, 2003)), to stonewalling by keeping the independent safety investigation open until the period of limitation for criminal prosecution has expired (this may be many years), or by refusing cooperate with any judicial inquiry at all and destroying safety-related data before any access can be gained from the outside (Dekker, 2007). These responses could create an adversarial stance that could be counterproductive to longer-term societal efforts to achieve a balance between learning and accountability in safety-critical systems—another reason to consider the prosecution and secondary victimization of professionals a legitimate topic in criminological research.

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