



Review

The criminalization of human error in aviation and healthcare: A review

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ARTICLE INFO

Article history:

Received 12 February 2010
 Received in revised form 21 August 2010
 Accepted 14 September 2010

Keywords:

Human error
 Criminalization
 Prosecution
 Incident reporting
 Accountability
 Just culture

ABSTRACT

This review explores the social causes and psychological and organizational consequences of the criminalization of human error in aviation and healthcare. Increasing prevalence of criminal prosecution is seen as a threat to the health and safety of employees and entire safety-critical systems in many industries, but initiatives to counter or mitigate the trend are local and haphazard. Social causes such as a greater societal risk consciousness and intolerance of failure are examined, as well as organizational consequences for disclosure and incident reporting. Psychological consequences of the criminalization of human error are evaluated in terms of employee ill-health, an area that is under-investigated. The criminalization of professional mistakes seems to be an increasingly prevalent phenomenon at the intersection of safety work, sociology, criminology and legal as well as social justice. This paper reviews possible research directions into the criminalization of professional mistake in aviation and healthcare, in the hope of stimulating debate and eventually legitimating it as a topic of study in its own right.

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Contents

1. The problem	121
1.1. A trend towards criminalization.	121
1.2. Crimes as inherently real or constructed phenomena	122
2. Exploring possible social causes of a criminalization trend	122
2.1. Disappearance of the accidental.	123
2.2. Media, populism and anxiety	123
3. Criminalizing professional mistake: Why a concern?	123
3.1. Interference with safety reporting and disclosure of errors	123
3.2. The inevitability of mistake	124
3.3. Prosecuting individuals versus pursuing system improvements	124
3.4. Who draws the line?	124
4. Psychological consequences of criminalization	124
4.1. Coping and the interference of prosecution	124
4.2. Further research needs	125
5. Conclusion	125
References	125

1. The problem

1.1. A trend towards criminalization

Aviation and healthcare are reporting an increase in the criminalization of human error (Michaelides-Mateou and Mateou, 2010; Michaels, 2008; Pandit, 2009; Ter Kulle, 2004; Thomas,

2007) and automatic criminal prosecution in the wake of an aviation accident is currently standard practice in many countries (FSF, 2006; ICAO, 2007). Italy has a specific criminal category of causing “air disaster,” and two airline pilots were recently sentenced to 10 years in jail after a crash that killed 19 people (RTE, 2009). In aviation, criminal prosecution of mostly front-line operators in the wake of incidents and accidents has occurred in the Netherlands (Ruitenbergh, 2002), England (Wilkinson, 1994), Spain (Brothers and Maynard, 2008), France (Esler, 2009), Italy (Learnmount and Modola, 2004), Greece, Cyprus (Mail, 2009), the

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United States (Michaels, 2008) and Taiwan (Thomas, 2002), as well as other countries. In healthcare, Sweden recently debated the introduction of the category “patient safety crime” (Akerberg, 2008). Concern with the criminalization of mistake exists in safety-critical domains beyond aviation and healthcare, including shipping (Wallis, 2010), construction (ENR, 1997), and chemical processing (Prakash, 1985). This review, however, concentrates on aviation and healthcare as so far most of the available research material comes from those two fields. The laws under which criminal prosecution of professionals currently occurs are mostly derived by extending general hazard statutes from particularly road traffic laws which criminalize the reckless endangerment of other people or property (Tingvall and Lie, 2010). The move to criminalize human error (a label that is itself a psychological attribution (Hollnagel and Amalberti, 2001; Woods et al., 2010)) could parallel the evolution of for example law on hate crime, which went from a broad, ambiguous category to a focused, determinate legal construct (Jacobs and Henry, 1996; Phillips and Grattet, 2000).

Doubts have been raised about the fairness of criminalizing errors that are made in the course of executing normal professional duties with no criminal intent (Mee, 2007; Merry and Peck, 1995; Moran, 2008; Reissner, 2009), and the capriciousness of criminal prosecution. For example, a nurse in Sweden was criminally convicted for a medication administration error of a kind that was reported to the regulator by others more than 300 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 (Anderson, 2005), let alone resist common biases of outcome knowledge and hindsight in adjudicating people’s performance (Anderson et al., 1997; Arkes et al., 1981; Berlin, 2000; Dripps, 2003; Hawkins and Hastie, 1990; Hugh and Dekker, 2009; LaBine and LaBine, 1996; Laudan, 2006; Roese and Olson, 1996).

Despite these concerns, there is no coherent program of research into the social causes of a trend toward criminalization in aviation or healthcare, nor into the psychosocial or psychological consequences of criminalization for those involved. Communities specializing in disciplines concerned with criminalization and victimization are segregated from those working on risk and safety. Interesting tensions and affinities across relevant work are hardly visible, and theoretical matters for debate have not been identified; a dialogue essential to intellectual development has not really started. This paper reviews possible research directions into the criminalization of professional mistake in safety-critical domains, in the hope of stimulating debate and eventually legitimating it as a topic of study on the intersection of criminology, victimization and safety in its own right.

1.2. Crimes as inherently real or constructed phenomena

A broader theoretical issue is at stake here. In fields such as aviation and medicine, with their positivist, engineering- and androcentric biases, the nature of culpable acts is often taken as essential and unproblematic (Bosk, 2003; Croft, 2001). Practitioners have “come to view an error as a failure of character—you weren’t careful enough, you didn’t try hard enough. This kind of thinking lies behind a common reaction by physicians: ‘How can there be an error without negligence?’” (Leape, 1994, pp. 1851). Such an epistemology is hostile to characterizations of criminalization as relative, historically located and observer-contingent constructions of perspective and background and language. This is consistent with how criminology has long adhered to a fairly narrow scientific essentialism that sees social facts as inert and stable across observers and observations (Bjarup, 2005; Rafter, 1990). “Criminal” aspects of mistakes are seen as non-arbitrary empirical facts that are dealt with by the legitimated authorities (North, 2000), leaving little room for critical reflection on who constructed the alleged act

as a crime, and from what political or social force field it emerged (Merton, 1938; Summerton and Berner, 2003). The resulting theoretical position may have sacrificed engagement with the criminalization of mistake as a safety-scientific issue.

Reviewing the criminalization of human error from a social-scientific or even socially-constructed theoretical base can be instructive. Merton (Merton, 1938) explored how social groups couple their desired ends (e.g. not having an accident happen, achieving safe performance) to moral and institutional regulation of permissible and required behavior (Morrill et al., 1997). Where the lines go between what is acceptable and what is not, is constantly renegotiated at the intersection of societal, political and technological (e.g. industrialization, urbanization, computerization) developments, giving different expressions to legality and illegality (Dekker, 2009; Foucault, 1977). Sociological research into deviance (Goode, 1994; Rock, 1998) is thus more interested in those who draw the lines between acceptable and unacceptable behavior than those who cross them (Becker, 1963). Culpability arises in part out of people’s ways of seeing and describing acts, something that not only evolves historically, but is situationally contingent (Christie, 2004). It has encouraged research into where the lines come from (Rafter, 1990), which can be seen in the work of Erikson (Erikson, 1966) and Foucault, who explicitly brought post-structuralist theory into criminal justice history with *Discipline and Punish* (Foucault, 1977). Who become moral entrepreneurs, imposing lines that separate legality from illegality, and how do these preserve or upset the status quo? (Garland, 1993, 2002). This is always an arena for political contest. It has made possible the idea of “overcriminalization” (Husak, 2008), something that people in safety-critical fields would argue is happening (ICAO, 2007; ISMP, 2007).

This paper sets up a constructionist lens to view the possible causes behind the increasing criminalization of professional mistake (Engbersen and Van der Leun, 2001; Rafter, 1990), without necessarily defending that position other than as an analytical aid. It identifies possible research trajectories into the social causes and psychosocial consequences by drawing on a variety of literatures. The review excludes occupational health/safety settings, where worker exploitation leading to injuries and fatalities in for example construction, hospitality, agriculture, forestry, horticulture, shellfish gathering and food processing is often believed to require criminalization of managerial decision making (Dekker, 2003) through for example, corporate manslaughter legislation (Goldman and Lewis, 2009). It also excludes road traffic accidents (Tingvall and Lie, 2010), in which there is societal and political support for broad categories of negligence and recklessness, in part because of near-universal participation in the system and the large autonomy of individual actors in it (Amalberti, 2001). In these latter settings, the Durkheimian function of criminalization (setting boundaries and demonstrating clearly to others where they go, *pour encourager les autres*) is widely seen as meaningful (Erikson, 1966). The negative consequences of criminalization for safety, particularly its detrimental effects on honest disclosure (Berlinger, 2005) and incident reporting (Ruitenberg, 2002), seem more articulated in healthcare and aviation than in these settings.

2. Exploring possible social causes of a criminalization trend

The social-constructionist argument does not explain specific 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 sanctionable behavior. Why professionals are more likely to be criminally prosecuted today as compared to, say, 40 years ago, is not in itself explained.

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