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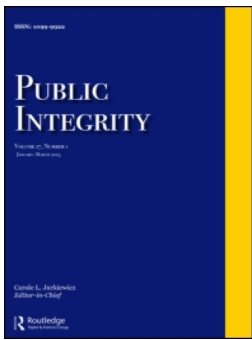
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To cite this article: Edin Mujkic & Donald Klingner (2018): Dieselgate: How Hubris and Bad Leadership Caused the Biggest Scandal in Automotive History, Public Integrity, DOI: [10.1080/10999922.2018.1522180](https://doi.org/10.1080/10999922.2018.1522180)

To link to this article: <https://doi.org/10.1080/10999922.2018.1522180>



Published online: 05 Nov 2018.



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Dieselgate: How Hubris and Bad Leadership Caused the Biggest Scandal in Automotive History

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The Volkswagen diesel emissions scandal (“Dieselgate”) explores how one of the world’s largest and most highly-regarded auto manufacturers became ensnared in a self-inflicted and staggeringly costly cheating scandal that reflected poor environmental scanning; inadequate decision-making; unethical corporate leadership; lack of accountability; and inadequate public relations and damage control. It supports the hypothesis that multinational corporations (MNCs) cannot both meet their corporate boards’ and stockholders’ return on investment (ROI) targets and, by branding themselves as socially responsible enterprises (SREs), produce competitively-priced products that also meet the demands of socially and environmentally conscious consumers. If MNCs cannot be trusted to police themselves as self-branded SREs, and if consumers do not necessarily make choices favoring the socially conscious values they espouse, then government regulations must continue to hold MNCs to appropriate standards of leadership, ethics, and accountability.

Keywords: accountability, corporate social responsibility, environment, ethics, leadership

On September 18, 2015, the U.S. Environmental Protection Agency (EPA), in collaboration with the California Air Resource Board (CARB), announced that Volkswagen (VW) had been manipulating vehicle emission testing by using special “defeat device” software on its diesel turbocharged direct injection (TDI) engines designed to mask much higher-than-allowed levels of nitric oxide (NO) and nitrogen dioxide (NO₂)—together known as nitrogen oxides (NO_x) (Ewing, 2017; ICCT, 2015).

This attempt to manipulate regulations has inflicted financial damage to VW of \$20 billion and counting. It is by far the biggest automotive scandal in the world (Ridley & Sterling, 2017). Numerous high-ranking VW officials have had to resign, including CEO Dr. Martin Winterkorn; others have been arrested or are under investigation by U.S. and German law enforcement agencies (Ewing, 2015; Schmitt, 2017).

Some management literature affirms that multinational corporations (MNCs) that self-identify as socially responsible enterprises (SREs) can sell products that meet shareholder expectations and still support social and environmental values. This research will test the alternative hypothesis that these MNCs may instead choose to produce and sell profitable products they know to be destructive to the environment and to public health, marketing

these products to a socially and environmentally conscious customer base they seek to attract. Their unethical corporate leadership culture will hide this by cheating and false advertising. They will seek to evade responsibility by lies and cover-ups, and to avoid individual and corporate accountability once they are caught.

First, this article will analyze public- and private-sector management literature related to environmental scanning; decision making; leadership and ethics; accountability; public relations; and damage control. Second, it will present the methodology, including justification for the selection of this example as a valid contribution to knowledge and theory. Third, it will recount how VW became a diesel powerhouse; why it fell behind other automotive diesel manufacturers; why it decided to install “defeat” software; how it got caught cheating; and how the cost and consequences of “Dieselgate” affected VW and other auto manufacturers globally. In the end, it will reach conclusions about the validity of the hypothesis that MNCs can both meet their corporate boards’ and stockholders’ return on investment (ROI) targets and, by branding themselves as SREs, produce competitively priced products that also meet the demands of socially and environmentally conscious consumers.

LITERATURE REVIEW

Current management literature uses an open systems model that depicts organizations as rational actors in a complex, turbulent, and shifting environment (Rainey, 2014; Thompson, 1967). To survive, they must scan and accurately sense that environment, process and use this information to provide needed goods and services to customers or citizens through strategic decision making and principled leadership and remain accountable to stakeholders for the public consequences of their actions while doing so.

While these management functions remain constant across public, private, and nonprofit organizations, the context of public and nonprofit organizations is more complex. At least traditionally, private sector organizations (including MNCs) are responsible only for satisfying customers by producing goods or services that offer desired quality at competitive prices while meeting shareholders’ demands for ROI. By contrast, public and nonprofit organizations are responsible for a more diverse and problematic set of overlapping and conflicting values (political responsiveness; efficiency and effectiveness; social equity; and employee rights) within a correspondingly higher and more diverse set of stakeholders—not only clients and customers, but also elected and appointed officials; interest groups; employees; and social media interests—with underlying values and outcome preferences that at some times align and at others conflict (Klingner, Nalbandian, & Romzek, 2002; Perry & Rainey, 1988).

Some recent management literature has hypothesized that many MNCs with “enlightened” CEOs can and have resolved the apparent conflict between profits and social or environmental objectives by producing competitively-priced goods or services that meet their managing boards’ and shareholders’ return on investment (ROI) expectations and their customers’ demands for products that advance social and environmental values. Mor Barak (2017) posits that profitable MNCs can support labor rights and social equity; Kliksberg concludes (2013) that MNCs can brand themselves as SREs, and maintain or even increase their profitability while also doing good in the world.

The more troubling alternative hypothesis is that MNCs try to attract market share among socially and environmentally conscious consumers by branding themselves as SREs. If necessary, they will cheat by selling products they know have negative public health and environment consequences; support their self-branding by extensive PR campaigns; conduct spurious research studies; and then lie about it when they are caught.

Environmental Sensing and Decision Making

In the past, corporations derived legitimacy from the unquestioned belief that they were supplying goods or services desired by customers, and that market forces would ensure quality control, and both highlight and correct their products' unforeseen negative societal consequences. Some scholars (Castelló & Lozano, 2011; Kanji & Chopra, 2010; Matejek & Gossling, 2014; Richter, 2011) conclude that corporations have at least adopted SRE rhetoric as an emergent ethos. However, MNCs' preferences for standardized products and uniform corporate policies do conflict with cross-national differences in their comparative regulatory environments (Ewing, 2018). Because such conflicts often occur across countries (in areas such as labor rights and responsibilities; environmental regulations; prevailing wages; and tax codes [Mor Barak, 2017]), public agencies and self-branded SREs must both learn to operate in complex environments, despite the additional costs and administrative complexities this entails.

Some recent MNC scandals involving alleged human rights, labor rights, and environmental pollution have questioned these assumptions (e.g., BP's "Deepwater Horizon" oil spill of 2010; the *Akpan v. Royal Dutch Shell* case involving oil spills in Nigeria; the ongoing Takata exploding air bag controversy; and efforts to market "clean coal" as cheap and environmentally friendly). Dawkins & Fraas (2011) conclude that company visibility and the salience of the issue (climate change) interact with environmental performance to influence the level of voluntary climate change disclosure.

Accountability

The shift toward SREs remains problematic because many business leaders still believe that making money for stockholders with limited oversight responsibility by corporate boards should be the criterion by which their performance is assessed. Scholars examining the effectiveness of SRE compliance (Fooks, Gilmore, Collin, Holden, & Lee, 2013; Gilbert, Rasche & Waddock, 2011; Ramakrishnan, Poomkaew & Nath, 2014; Vandewaerde, Voordeckers, Lambrechts, & Bammens, 2011) conclude that weak board governance; primary accountability to shareholders; the tendency to "game" compliance standards; and process accountability are common barriers. Others (Gino, Krupka, & Weber, 2013; Maignan, Gonzalez-Padron, Hult, & Farrell, 2011; Peters & Romi, 2014; Rasche, 2010; Rodrigue, Magnan, & Cho, 2013) concur, also noting that the coercive supply chain power of MNCs is usually applied to reduce costs rather than enhance SRE (Richter, 2011).

Leadership and Ethics

Because MNCs may face hard choices between profit maximization and self-branding as SREs, the quality of their CEOs' leadership is arguably the most important factor in the success of organizational change efforts to become SREs (Chen & Chang, 2013; Crossman, 2011; Du, Swaen, Lindgreen, & Sen, 2013; Frisch & Huppenbauer, 2014; Hannah, Avolio, & Walumbwa, 2011; Reed, Vidaver-Cohen, & Colwell, 2011). Clearly, it is unreasonable to expect employees to take the initiative on advancing SREs without clear top management support (Boiral & Paillé, 2012; Cohen, 2013). Differences in national and organizational culture also make the exercise of clear and consistent SRE leadership problematic (Kuntz, Kuntz, Elenkov & Nabirukhina, 2013; Vidaver-Cohen & Brønn, 2015).

Public Relations and Damage Control

Research suggests that high-profile, profitable firms continue to evade corporate social responsibility even when the risks of getting caught are apparent, due to shareholder demands for high performance (Mishina, Dykes, Block, & Pollock, 2010; Van Yperen, Hamstra & van der Klauw, 2011). Volkswagen faced intense negative publicity when it was caught engaging in illegal activities, covering them up, and lying about it; and it faced a more difficult road back to regaining a lost reputation afterwards (Muller, 2018). Before the Deepwater Horizon oil rig blew out in the Gulf of Mexico in 2010, British Petroleum (BP) had rebranded itself as a SRE by claiming BP stood for "Beyond Petroleum." Yet CEO Tony Hayward was on a yachting vacation at the time, and stayed on vacation afterwards while the disaster was unfolding (Robbins, 2010). For years, the coal industry touted "clean coal" as a cheap energy source (Franco & Diaz, 2009). Royal Dutch Shell was forced to accept criminal liability for oil spills by a Nigerian subsidiary (Hennchen, 2015). General Motors first tried to hide an ignition lock problem that had caused several fatalities by fixing the faulty part without telling anyone, and in the end settling lawsuits with victims' families under the conditions of secrecy (Blau, 2016). Finally, over 24 million cars with Takata airbags were recalled in the United States because safety defects caused them to explode (Steinzor, 2015).

METHODOLOGY

The study of public administration is by nature comparative and contextual (Heady, 1960, 1966; Riggs, 1954). Over the years, comparative public administration (CPA) scholars have emphasized the importance of comparison for building theory and gaining knowledge (e.g., Dahl 1947; Heady, 2001; Peters, 2010). Yet CPA's effectiveness has been challenged by persistent critiques, including the scarcity of empirical data or quantification (Peters, 2010; Riggs, 1954; Sigelman, 1976; Van Wart & Cayer 1990). Another methodological critique concerns sample sizes and sample selection methods. After reviewing 253 English-language CPA articles published between 2000 and 2010, Fitzpatrick et al. (2011) noted that 76% of these articles used samples of six or fewer cases.

Case study research is conventionally disparaged due to unfavorable comparisons with small-sample qualitative research dating from the 1960s (Campbell & Stanley, 1966; Goggin, 1986; Sigelman, 1976). However, some of these same experts have backed away from this initial skepticism. For example, Campbell (1975) said his work had undergone

. . . an extreme oscillation away from my earlier dogmatic disparagement of case studies. . . . After all, man is, in his ordinary way, a very competent knower, and qualitative common-sense knowing is not replaced by quantitative knowing . . . This is not to say that such common sense naturalistic observation is objective, dependable, or unbiased. But it is all that we have. It is the only route to knowledge—noisy, fallible, and biased though it be. (Campbell, 1975, pp. 179, 191)

Eysenck (1976), who had originally regarded the case study as nothing more than a method of producing anecdotes, later stated that “sometimes we simply have to keep our eyes open and look carefully at individual cases—not in the hope of proving anything, but rather in the hope of learning something!” (p. 9). Flyvbjerg notes (2006):

It is correct that the case study is a “detailed examination of a single example,” but . . . it is not true that a case study “cannot provide reliable information about the broader class.” It is also correct that a case study *can* be used “in the preliminary stages of an investigation” to generate hypotheses, but it is misleading to see the case study as a pilot method to be used only in preparing the real study’s larger surveys, systematic hypotheses testing, and theory building. (p. 220)

If single case study research can be considered a legitimate methodology for human learning (Barzelay, 1993; Benhabib, 1990; Klingner, 2007; Ragin, 1992), the question of how to identify critical cases becomes extremely important. Kuhn (1987) considers a *paradigmatic* case to be the most useful for studies seeking to nullify a hypothesis. The selection of paradigmatic cases is itself intuitive. Dieselgate is a case deliberately selected for its ability to nullify the hypothesis that “SREs can sell competitive products that produce satisfactory ROI for boards of directors and stockholders while working to achieve desirable social and environmental objectives.”

The magnitude of the Dieselgate scandal makes it an extreme case that supports the null hypothesis: “SREs *cannot* sell competitive products that produce satisfactory ROI for boards of directors and stockholders while at the same time working to achieve desirable social and environmental objectives.”

THE DIESELGATE CASE STUDY

VW Becomes a Diesel Powerhouse

Volkswagen AG, also known also as Volkswagen Group, has been Europe’s largest auto manufacturer for two decades (Cremer, 2014). It ranked sixth in *Fortune*’s Global 500 list of MNCs (“Global 500,” 2018). In the mid-1970s, VW introduced the diesel-powered Golf Mk1 to the European market, and soon thereafter in the United States (Martin, 2011; Perkins, 2017). Golf soon became VW’s most important model, and, after the Toyota Corolla and the

Ford F-150, the most-produced vehicle in automotive history through its seven generations (Marquis, 2017). By the late 1980s, VW offered direct injection (DI) technology in its Audi cars to increase engine power and reduce fuel consumption (MacRae, 2014). This technology was an instant success—VW soon dominated the passenger diesel market in Europe.

VW Falls Behind

In 1997, Fiat and BMW introduced a new Common Rail (CR) diesel technology that again fundamentally altered the competitive auto market (Cifferi, 2002). Mercedes-Benz and others soon followed (Meiner, 2005). However, VW introduced an alternative “unit injector” technology, or as VW branded it, the *Pumpe-Düse* (PD) technology, around the same time (1999). While PD offered more power and lower fuel consumption than similar sized CR engines, it also produced much higher NO_x exhaust emissions (Martin, 2011; Meiner, 2005). Diesel engines run at higher injection pressure and much higher temperature than gasoline engines. While they emit less carbon dioxide (CO₂) than gas engines, they produce higher levels of NO_x (Carrington, Topham & Walker, 2016). NO_x emissions, which are not found in nature, cause cancer (“Bosch: EU,” 2013; Carrington et al., 2016; Ewing, 2017).

In the United States, EPA and CARB focused on limiting both NO_x and CO₂ emissions. Because EU nations favored diesel vehicles, it was concerned mainly with CO₂ (Nesbit et al., 2016). It began to address NO_x levels only with the introduction of Euro V norms in 2009; still, those norms were not as strict as the U.S. TIER II/Bin5 regulations of that same year (Martin, 2011; Meiner, 2005). VW’s PD diesel engines could not meet even the minimal 2009 Euro V NO_x standards, much less the stricter 2014 Euro VI standards, which were almost as strict as the U.S. TIER II/Bin 5 norms (Nesbit et al., 2016).

VW Decides to Cheat

Since the 1990s, VW’s corporate leadership’s primary objective had been to become the world’s largest auto manufacturer. It could not do so without capturing a larger share of the U.S. market, the largest in the world (Ewing, 2017; “VW Conquers the World,” 2012). In 2009, VW decided to “flood” the U.S. market with cars powered by their 2.0-liter EA189 engine with CR technology (Buss, 2012). However, contrary to VW’s “clean diesel” marketing claims, this engine could not meet the new 2009 EPA emissions standards without using Selective Catalyst Reduction (SCR) technology, which it did not have (Ewing, 2017; Martin, 2011). SCR technology uses tanks that hold a reductant source (automotive-grade urea, known as Diesel Exhaust Fluid or DEF) and inject it into the exhaust system where it mixes with diesel exhaust in special catalytic converters that largely eliminate NO_x (Gonderman, 2014; Nova & Tronconi, 2014). However, SCR technology costs several thousand dollars per car to install, offered no direct benefit to consumers, and risked pricing VW out of the U.S. auto market (Sanchez, Bandivadekar & German, 2012). VW engineers also realized that the SCR equipment would wear out too quickly if calibrated to meet American pollution standards (Ewing, 2017).

In 2006, a VW technical expert offered a solution (Ewing, 2015, 2017; Grinton, 2015, 2017; Vidal, 2015). With top-level approval, VW began to install software that changed the “mapping” of the Engine Control Unit (ECU) (Ewing, 2015, 2017; Grinton, 2015). Once the ECU recognized that the car was being tested for emissions based on such readily recognizable factors as changes in air pressure and the fact that the rear wheels were not spinning, a “defeat device” would reduce power and change the ratio of air and diesel fuel injected into the engine, thereby lowering NO_x emissions. After the test was completed, the ECU returned to the regular “mapping” software (Ewing, 2017; ICCT, 2015). This “defeat device” was later upgraded to respond to other telltale signs of a regulatory test, like a steering wheel that was not moving (Ewing, 2015, 2017; Grinton, 2015; Vidal, 2015).

Volkswagen decided to cheat because by the time its leaders realized that PD technology could not comply with 2009 U.S. or EU NO_x emissions standards, installing a “defeat device” was the only way to sell passenger diesels in the United States while buying time to catch up with competitors who had been using CR technology since 1997 (Cifferi, 2002; Ewing, 2017; Martin, 2011; Meiner, 2005; Schmitt, 2017). Also, by marketing “clean diesel” technology as an equally economical and more driver-friendly alternative to hybrids like Toyota’s Prius, VW could attract environmentally conscious customers who still wanted a car that was economical, powerful, and fun to drive (Ewing, 2017).

Meanwhile, all diesel engines had come under increasing scrutiny as major contributors to NO_x pollution. In 2012, the World Health Organization (WHO) classified diesel exhaust as a carcinogen (Ewing, 2018; Forrest, 2017). The European Research Group of Environment and Health in the Transport Sector (EUGT), financed by BMW, Daimler, and VW, tried to suppress this report (Connolly, 2018). When that failed, VW and other diesel manufacturers tried to discredit this research in 2014 by using experiments to “prove” that its new “clean diesel” engines were environmentally safe and not as harmful as the WHO claimed (Ewing, 2018).

VW Gets Caught

In 2014, a group of graduate students from the West Virginia University (WVU), supported by a small NGO (the International Council for Clean Transportation [ICCT]), began investigating “clean diesels” by conducting real-world driving tests of pollution produced by the VW Jetta TDI, Passat TDI, and the BMW X5 xDrive35d (Ewing, 2015, 2017; ICCT, 2015; Schmitt, 2017). The students soon realized that VW models equipped with the EA189 engine were emitting up to 40 times more NO_x during road testing than what was legally allowed (Ewing, 2017; ICCT, 2015). While the EA189 engine’s ECU could recognize when stationary emissions tests were being conducted and use its “defeat software” to change the engine’s operating parameters accordingly, it could not adjust engine performance parameters during the WVU students’ road tests, using test equipment packed in the trunk of the car (Ewing, 2016, 2017).

The students first assumed that their unexpectedly high NO_x test results were due to faulty testing equipment. However, numerous tests confirmed that their results were consistent and constant (Ewing, 2016, 2017; ICCT, 2015). They presented their findings at a conference in San Diego, California, in 2014. Their audience included several members of CARB, who noted the results. CARB then gave the WVU researchers access to its more sophisticated

research facilities to conduct more accurate testing and started its own investigation (Ewing, 2016). After additional testing, students from WVU and officials from ICCT turned all their data over to the EPA and CARB (Glinton, 2015).

Although the results of the tests conducted by the WVU researchers were straightforward and had been certified by the EPA and CARB, VW at first questioned them (Ewing, 2017). VW leadership tried to “play” both agencies and dismissed the research findings (Glinton, 2015; ICCT, 2015). Both agencies, especially CARB, persisted (Ewing, 2017; Glinton, 2015). VW then agreed in December 2014 to recall 482,000 vehicles, promising to address this issue. However, CARB and EPA became concerned that VW was acting in bad faith (Glinton, 2015; McGee, 2017), by instead using the promised recall to hide the “defeat” software until they had figured out how to address the EA189 engine’s unacceptably high NO_x emissions (Ewing, 2017; Glinton, 2015).

On August 20, 2015, CARB and VW representatives met to discuss the progress VW had made in addressing emission issues. After CARB representatives asked several technical questions that VW representatives could not answer, these VW representatives disregarded instructions from VW leadership and admitted that VW had been cheating on emission tests (Ewing, 2017). On September 3, 2015, VW executives admitted to CARB and EPA that defeat software had been installed in U.S. passenger diesel vehicles, but kept this information from investors and the public (Ewing, 2017; Glinton, 2015). On September 18, 2015, EPA went public with this information (ICCT, 2015). VW then admitted it had cheated; but VW CEO Martin Winterkorn, who was soon forced to resign because of the scandal, continued to insist that he had been unaware of the “defeat” software (Ewing, 2017; Schmitt, 2017). VW “whistleblowers” disagreed. During interrogation in the United States following his arrest, Oliver Schmidt, a lead engineer in the compliance team in the U.S. VW branch, insisted that the “highest leadership” of VW had known about that plan, and agreed to it (Ewing, 2017). VW finally capitulated, offering to buy back 500,000 U.S. vehicles with the EA189 engine (2009–2014), and to improve the efficiency of the SCR systems that had been installed in the EA288 diesel engine introduced in the United States in 2015 (Ewing, 2017).

VW Pays the Cost of Cheating

Dieselgate has been by far the costliest scandal in automotive history (Ewing, 2017). Its final cost will probably be between \$30 and \$40 billion (Ridley & Sterling, 2017). German authorities are investigating all VW subsidiaries for corporate misconduct in the NO_x emissions cheating scandal, as well as their potential collusion with other German companies to pressure suppliers by monopolizing auto parts acquisition (Dohmen & Hawranek, 2017; Ewing, 2017). Authorities across the world, from South Korea to the European Union (EU), have started their own investigations (Che, 2015).

This scandal will have long-term effects on the global auto industry (“The Death of the Internal Combustion Engine,” 2017). While Japanese manufacturers had invested heavily in hybrid technology, European manufacturers had bet on diesel (“Bosch: EU,” 2013; Ewing, 2017). Dieselgate not only ended this strategy (Boston & Sylvers, 2017), but also focused European attention on the health risks posed by NO_x gases (Boston & Sylvers, 2017; Ewing 2018).

CONCLUSION AND RECOMMENDATIONS

In retrospect, installing “defeat” software was a flawed VW corporate decision based on faulty environmental scanning; poor decision making; unethical leadership; and inadequate public relations and damage control. This case, corroborated by literature documenting other instances of public safety and environmental pollution violations by major MNCs, supports the null hypothesis that SREs *cannot* sell competitive products that produce satisfactory ROI for boards of directors and stockholders while at the same time working to achieve desirable social and environmental objectives. The 2014 wave of auto manufacturing scandals (e.g., VW’s Dieseldgate, GM’s failed ignition switches, and Takata’s exploding airbags), plus recent oil industry pollution scandals (e.g., Royal Dutch Shell in Nigeria and BP’s Deepwater Horizon well blowout in the Gulf of Mexico) provide evidence that MNCs are not willing to undertake painful steps to address underlying issues that lead to crises unless they are compelled to do so by government regulators or civil and criminal courts. Given the prevalence of the political view that regulations are bad because they negatively affect economic development, CPA theorists should use the paradigmatic (Kuhn, 1987) VW Dieseldgate case and other evidence to support the alternative hypothesis that prudent and effective regulation can protect common social and environmental objectives and—given the deleterious effects of NO_x on public health in major European cities—public health. The argument for prudent government regulation and oversight is especially important today when social media has gained oversized influence on (dis)information circulated in public. It also suggests three alternative hypothesis: (1) corporate social responsibility may be a viable concept only when an already-profitable MNC seeks to gain market share by attracting socially conscious consumers; (2) once a self-branded SRE is caught cutting corners, it cannot respond adequately because its leadership is either oblivious to or unconcerned about the social harm it has caused, or remains convinced that its political capital among national governments under which it operates is sufficient to ride out the crisis; and (3) because VW did indeed become the world’s largest auto manufacturer in 2016 despite the Dieseldgate scandal, customers may not in fact make purchases that reflect social values over economic ones. If MNCs cannot be trusted to police themselves as self-branded SREs, and if consumers do not necessarily make choices favoring the socially conscious values they espouse, then government regulations must continue to hold MNCs to appropriate standards of leadership, ethics, and accountability.

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