**Managing impressions rather than emissions:**

**Volkswagen and the false mastery of paradox**

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## Abstract

The challenge of dealing with paradoxes has become a central issue in management and organization studies. Present research literature is largely inclined to idealize paradoxical framing in thinking and theorizing. We critically explore the perils paradoxes present when generated by stretch goals whose 'achievement' is accomplished through impression management. Using the Volkswagen emissions scandal we show how paradoxical promises, embraced discursively but not substantively, created false transcendence rather than paradoxical mastery. We contribute to paradox theory by discussing how the illusion of paradox embrace can trigger dysfunctional behaviours. In practice, the paper cautions organizations and their members from being overconfident in their ability to embrace paradoxes successfully.



## Keywords

Paradoxes, contradictions, Volkswagen emissions scandal, stretch goals, impression management


## Introduction

Paradoxes are integral features of organizations and the challenge of managing them has become a central issue in management and organization studies. By paradox, we mean facing demands that are contradictory but interdependent, constituting a persistent tension over time (Smith & Lewis, 2011; Schad, Lewis, Raisch, & Smith, 2016). Paradoxes are difficult, costly and precarious to manage effectively (Andriopoulos & Lewis, 2010; Smith, 2014). Not only are they difficult to achieve but they are even harder to maintain over time (Abdallah, Denis, & Langley, 2011). Nevertheless, most recent research focuses on the virtues of embracing paradoxes, perhaps because this lends managers an "aura of boldness" (Gaim, 2017, p. 69).

Organizations that choose neither side of a tension but adopt "both/and" as a mode of thinking are said to embrace paradox (Smith, Lewis, & Tushman, 2016): delivering freshness, originality,

boldness, novelty. Despite the positive view of the effect of organizations embracing paradox, unintended consequences can occur (Schad & Bansal, 2018), such as dysfunctions, deviances and dramas that embracing paradoxes introduces (Cunha & Putnam, 2019), elements that have not been discussed in systematic detail. Hence, there is a significant gap in the literature.

Embracing paradox might be considered a stretch goal, supposedly leading organizations to higher achievements (Cunha, Giustiniano, Rego, & Clegg, 2017). Stretch goals denote virtually unattainable (Thompson, Hochwarter, & Mathys, 1997) or seemingly impossible goals (Sitkin, See, Miller, Lawless, & Carton, 2011). Organizational failure to achieve them leads to loss of face (Goffman, 1967) on the part of promoters, performers and protagonists. In such a situation, options are either to fail or to fudge the representation of practice by impression management so that goals *appear* to be achieved. Where these goals are paradoxical, they may appear to be transcended, while the causes of the tensions underpinning the paradox are not addressed (Schad & Bansal, 2018). Thus, the paradox is resolved by illusion rather than practice, creating a gap between paradoxical promise and actual practice.

Inspired by Goffman (1959), we use impression management to refer to a conscious or subconscious process by which people attempt to influence the perceptions of others about a person, object or event. While Goffman stressed the role of 'face-work' in regulating and controlling information in social interaction, we use it from an organization's point of view in relation to how they seek to secure a desired identity. We use Volkswagen's (VW) promotion of *fast*, *cheap* and *green* vehicles as a case in which the impression projected to outsiders did not reflect the reality. Accommodating multiple demands for performance *and* efficiency *and* emissions simultaneously is paradoxical because the demands are contradictory and interdependent

(Schad et al., 2016). Making diesel engines more efficient comes at the cost of higher emissions. Similarly, achieving higher performance means lower fuel efficiency above a certain speed.

While VW claimed to have produced a fast, cheap and green diesel car, in reality they achieved this by installing a defeat device that switched on emission controls only when vehicles were undergoing emission testing. VW set a paradoxical stretch goal that proved impossible to reach (Sitkin et al., 2011, p. 545). Using the VW emissions scandal, we explore *the perils of paradoxes that are a stretch too far being engaged through managing impressions rather than managing a reality concomitant with claims being made about practice*. Such an exploration has so far been missing from the paradox literature. Addressing this is important in three ways. First it limits the "narrowness and unquestioned acceptance of existing knowledge" that is often found in the literature (Cunha & Putnam, 2019, p. 96); second it keeps research in paradox theory "vibrant and polyphonic" by creating a space for "divergent views," and third, it adds explanatory power to paradox theory by clarifying boundary conditions (Farjoun, 2017, MacLean and Behnam, 2010).

We contribute three significant insights to the extant literature. First, we explore the dark side of paradox that posits a stretch too far. Second, by introducing impression management, we explore the nested nature of paradoxes and show how the paradoxical promise-practice gap plays out in a grounded and significant empirical case. Third, by discussing the decision-making context, we elaborate on what it takes to become entangled in a vicious cycle when attempting to embrace paradox.

**Paradoxes and Stretch Goals**

Maintaining positive management of paradoxes, although hard-won (Smith, 2014) is valorised as rewarding (Takeuchi, Osono, & Shimizu, 2008). Studies focus on the virtues of engaging paradoxes, such as enhancing creativity (Miron-Spektor, Gino, & Argote, 2011), contributing to sustainability (Hahn, Figge, Pinkse, & Preuss, 2018), achieving long-term performance (Smith & Lewis, 2011) as well as ambidexterity (O'Reilly & Tushman, 2008). Paradox has been cast as a positive framework for understanding the organizational implications of tensions (Cameron & Quinn, 1988). Although scant and largely peripheral, failed or exaggerated attempts to engage paradoxes have latterly been seen to lead to negative or unintended outcomes, such as chaos, conflict and decline (see Schad et al., 2016).

The paradoxes we address were a result of a stretch goal that denote virtually unattainable or seemingly impossible to achieve objectives (Thompson et al., 1997; Sitkin et al., 2011). In this paper, the notion of a stretch goal is operationalized as manufacturing a diesel engine that was fast, cheap and green. Tied to the positive organizational identity, VW promoted, achieving the goal proved a potential recipe for failure in reality. Stretch goals pose a tension between aspiration and achievement, representation and reality that rarely lead to positive outcomes (Sitkin et al., 2011). Cunha et al. (2017) see stretch goals as having a paradoxical component. Faced with competing demands, managers can develop both positive and negative orientations towards the tension they generate, creating cognitive and emotional clashes and conflicting impulses pulling in different directions (Ashforth, Rogers, Pratt, & Pradies, 2014, p. 1454).

**Managing paradoxes: Illusion and reality**

Increased interest in the field of paradox is well documented (see Putnam, Fairhurst, & Banghart, 2016; Miron-Spektor, Ingram, Keller, Smith, & Lewis, 2018). Paradoxes might be dealt with by

presenting an illusion of dealing successfully with the tension, rather than actually responding to the tension. A typical case is greenwashing, in which bad environmental performance is coupled with positive communication about green values (Delmas & Burbano, 2011, p. 67), sustained by impression management shaping how others perceive them (Mohamed, Gardner, & Paolillo, 1999). Perceptions (Bolino, Kacmar, Turnley, & Gilstrap, 2008) and the reality of practice may differ significantly. Goffman (1967, p. 6) terms such a substantive charade face-work, in which one is said "to *have*, or *be in*, or *maintain* face[2] when the line[3] [one] effectively takes presents an image … that is internally consistent" (emphasis in original). When information is presented that "cannot be integrated, even with effort, into the line that is being sustained", one is in the *wrong face* (Goffman, 1967, p. 8).

When organizations claim to have achieved goals that seem remarkable while the reality is inconsistent with the image created, they may also be said to engage in face-work. Underperformance in practice is likely when "decision makers sub-consciously underestimate the risks or overestimate their capabilities" (Drummond, 1998, p. 916) in achieving stretch goals. Under such circumstances, appearance and practice can be aligned substantively in favour of the former rather than demonstratively in favour of the latter. In Goffman's (1967, p. 9) articulation, once "self-image is expressed through face" the onus is to "live up to it." In this case, firms "hold themselves out as fully committed to compliance when the commitment is, in fact, absent" (Laufer, 2003, p. 254). In a typical form-function decoupling case (MacLean & Behnam, 2010, p. 1516) firms engage superficially to gain legitimacy while continuing "business as usual' (Boxenbaum &

[2]Face is defined as the positive social value a person effectively claims for himself by the line others assume he has taken during a particular contact (Goffman, 1967, p. 5).

[3] Line is a pattern of verbal and nonverbal acts by which one expresses his view of the situation and through this his evaluation of participants, especially himself (Goffman, 1967, p. 5).

Jonsson, 2008, p. 78 & 81). Organizational impression management represents abilities and accomplishments assertively, boosting an image to make it appear attractive, competent and morally worthy (Mohamed et al., 1999, p. 113).

In our case, the impression of managing the paradox is socially constructed through formal organizational communication (Abdallah et al., 2011; Bednarek, Paroutis, & Sillince, 2017) that did not acknowledge the role of deception in practice. Deceptions associated with impression managing paradoxes reverberated across levels, demonstrating the nestedness of paradox (Sheep, Fairhurst, & Khazanchi, 2017). Paradoxes created at one level metamorphosed into unintended dynamics as their consequences percolated organizationally (Gilbert, Michaud, Bentein, Dubois, & Bédard, 2018). When nested, disconnections (Hengst, Jarzabkowski, Hoegl, & Muethel, in press) between promise and action gain a life of their own, becoming an element in a vicious circle.

We will focus on the perils of paradoxes being resolved through representational practices designed to manage impressions rather than emissions. To do so, we follow Raisch, Hargrave, and Van de Ven (2018) who argue for the need to empirically explore real-life tensions and organizations' response. Given the normal stress on paradoxes' virtues, more critical empirical exploration of the perils of paradoxes is warranted, especially in a case where stretch goals publicly asserted by top leaders served as the antecedent of paradoxes whose ripple effects led to catastrophe. Eisenhardt (1989, p. 537) proposes that "it makes sense to choose cases such as extreme situations and polar types in which the process of interest is "transparently observable," as does Flyvbjerg (2006). Doing so helps us uncover rich insight about the case, the paradox central to the case, and how it was managed, both rhetorically and substantively. The VW scandal constitutes such an extreme example from which to build an understanding of the perils of paradoxes and it provides inductive materials from which to derive managerial implications and theoretical extensions.

## Methods

### *Research setting*

By early 2019 the VW emissions scandal had cost VW 30 billion dollars. The scandal became apparent in September 2015, when the Environmental Protection Agency (EPA) revealed that many VW diesel cars being sold in America had a device in their engines that could detect laboratory testing, changing the measures of performance accordingly, in order to produce results that complied with required and claimed emission standards. The German car giant has since admitted cheating on emissions tests in the US (Hotten, 2018). Figure 1 presents the timeline of key events about VW and the scandal, compiled mainly from EPA (2017), Kollewe (2015) and Ewing (2017).

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Insert Figure 1 about here
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### *Data collection*

Since it is nearly impossible to gain first-hand and accurate accounts of corporate malpractice from organizations' executives, whose reticence is unsurprising, we collected data from a variety of multiple secondary sources. As a widely publicized scandal, it was possible to collect relevant data from published sources. Firms such as VW, when they err, are subjected to media scrutiny as they garner public attention (Delmas & Burbano, 2011, p. 73). Media material has limitations of potential bias, hidden agendas or political issues. We included in our data sampling all major media outlets, VW's press releases associated with the scandal, as well as complementary sources to balance any possible bias.

We were systematic in accessing data, using the Factiva database to access major newspapers reporting the case. The search terms 'Volkswagen AND Diesel AND Scandal' were used. Comprehensiveness and relevance were adopted as search criteria. The major UK and US-based newspapers in the English language were included. We focused on articles published between September 2015 (when the news of the scandal emerged) and April 2018 (the latest period in which we made a Factiva search). The search results cover articles from September 22, 2015 to December 8, 2017, excluding republished news and materials related to pricing and marketing data, which were thematically irrelevant.

We concentrated on regulatory breach and corporate crime/legal actions, generating 2,656 articles. We reviewed the relevance of each article by initially checking their headlines and when not clear, the whole article, resulting in 859 pieces of evidence. After an automatic and manual removal of duplicates and republications, we isolated and downloaded 338 articles as the basis for analysis. To ensure media quality, we only focused on major media houses with a wide readership and professional editorial teams. Moreover, we used multiple sources to stay close to the context (Andriopoulos & Gotsi, 2017, p. 523) and to crosscheck facts and events. In addition, we also studied existing documentaries such as *Dieselgate: The VW emissions scandal* by DW Documentary; *What the VW scandal means for diesel cars* by BBC's Newsnight, and *Hard NOx*, an episode of Netflix's *Dirty Money*. We accessed congressional hearings attended by Michael Horn, the CEO of VW's American division, press releases from VW media, as well as a book on the scandal by Ewing (2017). These diverse sources helped us in two ways: first, to gain a comprehensive understanding of the scandal; second to triangulate initial findings based on the newspaper articles. To ensure that we included up-to-date developments subsequent to our initial search, we accessed more recent and relevant articles in addition to those uncovered by the original

search. Apart from the audio and video files and handpicked articles, we composed an archive with 695 pages of news articles and provide readers with selected in-text vignettes as well as supplementary materials (see Appendix 1) that capture the facts of the matter.

*Data analysis*

In our analysis, we identified not only actions that led to the scandal but also the context within which it happened. Our analysis was largely inductive and iterative (Strauss & Corbin, 1998; Gioia, Corley, & Hamilton, 2013). We used the '*stages en route to scandal'* flowchart (Hirsch & Milner, 2016) to structure events. The flowchart "traces the process of how information about "inside jobs," initially known to only their participants, can work its way to passage through the tipping point that leads to notoriety and infamy as a public scandal" (Hirsch & Milner, 2016, p. 447). The flowchart depicts events from 'contained deviance' to 'outside awareness' where after a tipping point, what was put in a tight lid becomes a 'public knowledge' followed by 'response' from the offending party (Hirsch & Milner, 2016, p. 447). Once we inputted the news articles obtained from Factiva to NVivo 11, aided by the flowchart, we began an analytical process involving three interrelated stages.

During the first stage, we read the wide range of data sources about the scandal in order to develop a holistic understanding. We identified internal and external pressures: internally, the quest for dominance and fulfilment of personal desires, coupled with external regulatory and market pressures, created overambitious paradoxical goals. Internal and external pressures triggered top-level paradoxes that played out in an external context of fierce competition. The rules of the competitive game were constituted by US emission standards. These became coupled with VW's commitment to establish a market for 'clean and green' diesel in the US for which VW engineers

were required to design a diesel engine that embraced performance *and* efficiency *and* cleanliness: the resolution of which many had tried, but none accomplished. While analysing the triggers and paradoxes at both levels, our focus was on the 'contained deviance' (Hirsch & Milner, 2016): a situation that internally contained awareness of deviance between a promise being made at the top and practice that materialized at the base.

In the second stage, we looked at our data to understand how 'outside awareness' led to a tipping point (Hirsch & Milner, 2016, p. 448). Here we looked into the details of VW's attempt to deliver on promises, albeit in representation. The paradox conjoining representational rhetoric and organizational practices was accommodated by ingenious solutions from VW engineers that, for a while, successfully managed impressions. Hence, the paradox embedded in the nature of the product being promoted was experienced at a lower level, making impression management apparently successful to external audiences. That the paradox experienced in the lower levels of the organization was 'managed' through illusion became apparent when the 'solution' was brought to 'outsider awareness' by the publication of the results of a project conducted by three graduate students from West Virginia University.

Once the gap between illusion and reality became public knowledge, VW's responses (Hirsch & Milner, 2016) became central. VW responded with settlements, compensations and future promises of ecological accomplishment. Of particular interest at this stage was how VW's green simulation (their selling point to popularize diesel) opened a Pandora's box that revealed other problems related to performance and efficiency. VW used a transcendence narrative; when caught, it escalated commitment by seeking to make the defeat device perform even better instead of accepting failure. The decision-making context reflected a cultural framing that defined what was and what was not acceptable internally in which failure was not tolerated, deepening the inclination

to manage impressions. Additionally, leaders used fear and intimidation as motivators while those at the top enjoyed discretion bereft of firm checks and balances.

In the third stage, we focused on impact. Once the scandal became public knowledge (Hirsch & Milner, 2016), the impact was multifaceted. We explored the impact the scandal had on the company, customers, the auto industry, car dealers, shareholders and the environment. Given the newsworthiness of the impact, our data covers multiple impacts in terms of finance (stock value, VW's financing cost, loss of earning, cost-cutting and delaying investment as well as penalty and legal related fees); management (arrests and convictions, resignations, suspensions, charges and accusations) as well as sales, rank and reputation (drop in sales, losing rank, reputation damage). Customers and environmentalists expressed a sense of betrayal. Beyond VW and its customers, automakers, auto-parts makers and diesel technology firms also suffered, as regulators tightened screening of diesel engines. We covered the impact to form a full picture of the scandal and present the setting within which the scandal happened.

Although analysis is framed in three stages, we worked iteratively in coterminous interpretation and literature review until we arrived at a narrative that made sense. Hence our analysis involves continuous iteration between data and literature (Locke, Golden-Biddle, & Feldman, 2008) that drew largely on paradox theory. We noted the peculiarity of the decision-making context and why what happened came about and how a paradox that originated at the top cascaded down to the engineers and low-level managers. We heeded the methodological issues raised by Andriopoulos and Gotsi (2017, p. 518) to show "what counts as paradox", "who experience the paradoxes", as well as the role played by context. As such, our predominant focus on paradox helped us to "narrow our field of vision" and give the reader "a good sense of the phenomena being studied" (Bansal & Corley, 2011, p. 236).

## Findings

*Sources that triggered paradoxes*

In Germany, every seventh job is linked to the auto industry, with VW being the largest employer as well as a major symbol of Germany's engineering prowess. According to Ewing (2017, p. 34), VW played a part in "building the mythos of Germany as a land of meticulous craftsmen and engineering." A central agenda of VW was to be the world's top automobile manufacturer, ahead of Toyota, reflected in the 2007 annual report of VW AG. CEO Martin Winterkorn, with the belief that VW "can be the most successful automobile manufacturer in the world in a few years." (VG-AG, 2008) noted:

> "We wanted to have the most satisfied customers, the most satisfied employees, achieve good results in order to invest in the future, and we wanted to make the best cars. By 2018, we are going to be the prominent car manufacturer in the world." Martin Winterkorn 'Strategy 2018' (VG-AG, 2008)

Following Ferdinand Piëch,[4] who pioneered diesel in passenger cars, the grand agenda of world domination for VW dated back to the 1990s, during which VW focused on growth at all costs. In their efforts to penetrate the US market, crucial for VW to be the world's leading automaker by sales, they made diesel cars their main focus. Although popular in Europe, diesel-powered cars were not common in the US. Compared to petrol engines, diesel cars are fuel-efficient, but that efficiency comes at a cost:

[4] Grandson of Ferdinand Porsche. Like Steve Jobs at Apple, Piëch was among a handful of executives who put an unmistakable personal stamp on the companies they ran. Like Jobs, Piëch was obsessive about the details of product design and had a genius for creating objects of desire.

> "diesel engines have higher efficiency, so they have become more and more popular at present. However, diesel engines emit larger volumes of nitrogen oxides (NOx) and smoke (soot) emissions, which are hard to be decreased or eliminated simultaneously due to nonuniformity of fuel/air ratio and temperature distribution in-cylinder." (Zhu, Chen, & Liu, 2014, p. 385)

In 1990, the US Congress radically revised the Clean Air Act to improve air quality. Hence, all cars sold in the US have to meet strict US federal emission standards defined by Californian regulators. With the internal pressure emanating from the ambitious and personally significant goal to be #1 and Piëch's fascination with diesel engines, as well as the external pressure tied to tough competition and constraints of meeting strict emission standards to enter the US market, VW started a journey to the impossible. Accommodating the internal and external pressures triggered a paradox at top level that proved to be a stretch too far at lower levels.

*Experienced tension and how organization members deal with it*

VW top manager's challenge in accommodating internal and external pressures meant engineers delivering a diesel-powered engine that was not only efficient but also powerful and clean. In a sense, the tensions were nested. In Europe, VW led the introduction of diesel for mass-market passenger cars, producing engines with less noise and smell than in the past, yet offering excellent acceleration and fuel economy. Diesel-powered cars are highly fuel-efficient but this efficiency, technically, comes at the cost of higher emissions. Diesel engines and emission technology were presented as Piëch's personal commitment and innovation ideal, constituting a breakthrough for passenger cars.

The idea of clean diesel was a highly marketable proposition that VW exploited in their attempt to conquer the US market. In 2015, VW focused on "Clean Diesel" products in 14 of their US TV

advertisements, marketing their diesel vehicles as meeting US emission standards[5]. VW's marketing in the US used clean diesel as its competitive advantage against Toyota and GM. Clean diesel's better performance *and* lower emissions meant owners qualified both for subsidies and for tax exemptions. Delivering on the top-level paradoxical promise of a diesel car that is '*fast, cheap and green*' begot a paradox at lower levels that proved to be an engineering enigma.

Similar paradoxes were dealt with differently elsewhere. BMW met the emissions requirement by reducing fuel efficiency, ultimately increasing their car's price, as additional engineering was included to remedy performance shortfall. Mercedes-Benz's Bluetec injected "an extra fluid called urea to convert the NOx into less harmful substance" (Ghose, 2015) producing power and fuel economy but requiring a separate tank for the urea. The tank had to be periodically refilled at extra cost and inconvenience for car owners, which VW sought to avoid. VW continued to push for a diesel engine that would satisfy the customers' need for power and efficiency while at the same time meeting US emissions targets. Both BMW and Mercedes-Benz established that this was a practically impossible goal. VW were aware of this: in 2007 Mr Hatz, the head of engine and transmission development at VW, complained about the tailpipe emission requirement saying that the California Air Resources Board (CARB) was unrealistic and aggressive, noting that complying with CARB requirements is "nearly impossible for us" (Ewing, 2016). Nonetheless, VW "touted vehicles with extremely high fuel mileage coupled with low emissions" (Felton, 2015). VW had "introduced a new clean diesel, turbo direct injection (TDI). Its pitch to Americans was captivating.

[5] In the 2010 Super Bowl Audi commercial entitled 'Green Police' VW offered an implicit promise that people who drove diesel belong to an elite and morally superior group … offered a way to be environmentally virtuous (Ewing, 2017 pp. 145-146).

Cars that were low-cost, low-pollution got good mileage and were fun to drive" (Gibney, 2018, 20 min) .

*Decision-making context*

Ambitious goals were the norm in VW under then-Chairman Ferdinand Piëch and then-CEO Martin Winterkorn (Piëch's closest protégé), whose doctrine was "Geht nicht, gibt's nicht [The impossible doesn't exist]" (Ewing, 2017, p. 90). Piëch was known for tasking engineers with difficult challenges that if failed, risked their termination. Lutz (2015) noted that engineers were told to "Do it or else." When engineers reported that they could not pass the emissions test given the technology, Piëch said: "you will pass, I demand it! Or I'll find someone who can do it" (Lutz, 2015). Between 2008 and 2015 in terms of what was known publicly, VW transcended the paradox between performance, efficiency and emissions. In practice, VW engineers failed to deliver this outcome. Mr Liang, together with his colleagues in engineering, began designing a new engine around 2006 but "soon realized that the engine could not meet both customer expectations as well as new, stricter U.S. emissions standards. Instead, they designed software to recognize when the car was undergoing a test and turn on emissions controls" (Viswanatha & Rogers, 2016).[6] After the scandal broke, one of the engineers confessed culpability and, according to the plea agreement, admitted to designing software that recognized when the car was undergoing a test, which would be activated automatically in laboratory conditions. The defeat device sustained the appearance that VW's clean diesel embraced performance, efficiency and emission: the TDI miracle. Sceptical technologists wondered how these autos were so good:

[6] Mr Liang was subsequently sentenced to 40 months in prison in September 2016. He claimed, in a familiar defence, that he was just following orders.

> "Any motor developer would have been put on guard by the engine's ability to meet standards without expensive exhaust treatment technologies" (Hall, 2015).

Initially, technologists and environmentalists alike were interested in the wizardry of VW's technology. After some data irregularities emerged, the excitement began to be replaced by suspicion. Independent analysis by researchers revealed that:

> "The software enabled cars to get better fuel economy at the expense of higher nitrogen-oxide emissions. West Virginia University researchers, who first noted the discrepancy in NOx[7] emissions in Volkswagen vehicles determined that on-road NOx emissions were up to 40 times the standard." (Krall & Peng, 2015)

The emissions scandal became public on September 18, 2015, after US regulators reported that since 2008 VW had been using a software defeat device "that allowed its diesel cars to release fewer smog-causing pollutants during the conditions under which the test was conducted compared to normal road usage. Software incorporated in 11 million cars had been engineered to defeat laboratory tests, as VW admitted, 8 million of which were sold in Europe with nearly half a million sold in the US. Although VW *appeared* to have embraced the paradox, the revelation of the defeat device proved otherwise. The defeat device, a few lines of computer code, cost mere thousands to develop but is a contender to be one of the world's most expensive commercial fiascos (Rufford,

[7] "Nitrogen oxide is very nasty stuff. Elements of nitrogen oxides mix with ozone and chemically change into what we call smog. It is a factor in acid rain. It is damaging for plant life. It courses asthma in children, causes cardiac problem, cancer. To keep the efficacy of diesel, but to cut down on NOx, manufacturers like VW tried to create NOx traps that caught and burned the stuff before it left the tailpipe. But the special parts needed were expensive and had to be replaced every few thousand miles. Yet they were the only way to meet NOx pollution standards set in the US which were much more strict than in Europe […] Solving that problem in the US was critical for the strategy of the man who eventually tapped to follow Piëch as the head of VW, Martin Winterkorn" (Gibney, 2018).

2018). While VW was caught, it should be clear that cheating on performance figures in the auto industry is neither new nor confined to this producer.

After the tipping point of the scandal, there were multiple denials amidst accusations. During his testimony to a congressional panel, VW's US CEO Michael Horn blamed engineers and claimed that the cheating was not corporately generated: he said that it was "software engineers who put this in for whatever reason" (*Volkswagen Congress Hearing: Emissions scandal* 2015). Later it was revealed that the scheme was systematically orchestrated and that senior officials knew of the practice. In the inquiry into the emission, Gieseke and Gerbrandy's (2017, p. 54) report shows that VW's case "originated from activities of car manufacturers that were fraudulent and banned by the applicable legislation." The idea that there might be a few 'rogue' engineers fooling the high profile engineering management of this company was highly unlikely. In one of the lawsuits, it was said that:

> "The cover-up was orchestrated and approved at the highest levels of the company. Pointing to internal Volkswagen documents and emails, the lawsuit argues that the fraud lasted more than a decade and included dozens of engineers" (Merle, 2016).

Apart from what is 'normal' in the industry, the leadership in VW ruled by fear and intimidation of those below them through a governance structure that insulated VW from external voices and pressures. VW's governance structure was quite unusual, composed of family control, government ownership and labour influence.

> "Porsche and Piëch family members own over half the voting shares and vote them as a bloc under a family agreement. Labour representatives hold three of the five seats on the powerful executive committee, and half the board seats are held by union officials and

> labour. Of the remaining seats, two are appointed by the government of Lower Saxony, the northwestern German state that owns 20 per cent of the voting shares" (Stewart, 2015).

Such lax governance structure coupled with leading-by-fear could explain why those who had to materialize the paradoxical promise at the top resorted to cheating. For example, a former VW employee said of Winterkorn:

> "There was always a distance, a fear, and a respect ... If he would come and visit or you had to go to him, your pulse would go up" …"If you presented bad news, those were the moments that it could become quite unpleasant and loud and quite demeaning." (Cremer & Bergin, 2015)

Given the culture of tolerance for past rule-breaking (Ewing, 2017), after the scandal, the new CEO emphasized regaining trust and re-establishing credibility. He emphasized VW's "stand on integrity—not just on paper"("Matthias Müller: "We will overcome this crisis"," 2015) and promised, "enhanced operational processes and reporting and control systems to ensure responsibilities are clear and a more robust whistle-blower system." ("Volkswagen reaches settlements with U.S. government," 2017).

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Insert Figure 2 about here
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*The impact of the VW scandal*

VW's diesel scandal had a far-reaching impact on investors, dealers, and customers, extending beyond VW into the car industry in general, with a decline in diesel's popularity. For VW, the

impact has been financial, reputational and legal. The financial impact came from a variety of sources: fines and compensation, recall costs, the impact on car prices, as well as higher borrowing costs. After the scandal, there were class actions and multiple lawsuits filed against VW. The suits came from regulators, consumers, investors, and dealers.

For the management team, multiple lawsuits, criminal convictions, resignations, suspensions and investigations followed the scandal. While composing the paper news emerged that the CEO during the scandal (Martin Winterkorn) was charged with fraud in Germany. VW had to deal with major logistics issues in relation to buybacks, recalls and negotiating how to fix tainted cars; multiple reports of these issues were published while writing this paper. VW admits that buybacks, repairs and legal costs amount to billions to date.

An issue central to regulatory and environmental agencies was the status of the advantages afforded VW for its seemingly green initiatives. First, VW committed fraud by taking advantage of tax incentives to boost sales of ostensibly low-emitting cars awarded under false pretences. In the US, federal tax credits were given to buyers of (so-called) environmentally friendly cars, credits now under investigation by the US Senate. By claiming to be green, VW committed massive fraud and profited from selling 'clean diesel.' Engines based on the promise of 'clean diesel' were billed as safe for the environment when in fact, according to US EPA, they were on average 40 times dirtier than US standards (EPA-US, 2015). Second, VW won the 'green car of the year' for 2009 and 2010; an award that was rescinded but only after it provided enormous free publicity for VW.

After the tipping point, VW had to withdraw its application to sell 2016 model diesel-powered cars and suspended sales of the tainted four-cylinder TDI. The scandal also meant losing rank, reputation and sales. A report published in *The Sun* on January 2016 indicated that "Toyota has

been crowned top-selling carmaker for the fourth straight year after main rival VW saw sales drop in the wake of its emissions scandal". Losses also mounted from declining market share and lower prices as VW chased sales by making tight margins even tighter. The shakeup of management and senior engineers directly involved in the scheme also had an impact on the structure and corporate culture of VW. A new CEO sought to rebalance the company's growth strategy and put increased emphasis on repairing Volkswagen's corporate culture by establishing checks and balances, as well as improving profitability, switching investment to electric technologies.

VW unquestionably breached consumer trust, destroying brand confidence. Advertising "clean diesel" vehicles entailed systematic deceit of customers. One of the lawsuits alleges:

> "customers paid premiums for Volkswagen and Audi cars powered by clean-diesel engines on false promises of horsepower and fuel efficiency, and that their vehicle values will now suffer as a result of the EPA probe and any recall" (Boston, 2015)

Broken trust takes time to repair. VW owners were hit by lower resale value as the brand's name became tarnished by scandal. Much more dramatic was the effect on VW shares. As Figure 3 depicts, the stock plummeted the day the scandal broke[8].

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Insert Figure 3 about here
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VW shares lost around one-third of their value in the first two days of trading after news of the scandal broke, remaining at roughly the same level in the middle of 2018, having fallen more than

[8] While the stock has recovered from the late September 2015, the scandal shaved $20 billion off of the company's market cap, and the stock dropped nearly 30% virtually overnight. As can be seen in Figure 3, VW was down more than 40% from May 2015 highs. Source: https://www.investopedia.com/news/vw-scandal-how-has-it-impacted-volkswagens-stock-vlkay/

40% since the story broke in 2015. After seeing their value slashed, investors complained about information being withheld and others called for an independent investigation. Some investors complained about VW withholding information from financial markets about the diesel fraud for which they are seeking damages, given the loss of value that the deceit precipitated

Given VW's size, a scandal of this scale affected others in the value chain. The scandal has rocked the automotive industry in general. As the effects became a widening ripple, other automakers became a target of regulators. Dealers had to deal with an inventory of tainted cars and the scandal added uncertainty to diesel technology component makers and other suppliers depending on VW. Dealers promoting the environmentally friendly rhetoric of VW halted sales and pre-orders because of the 'sales stop' introduced after US EPA awareness of the violations. The scandal affected other firms working to develop clean-diesel technology, threatening its progress, tarnishing the reputation of the whole sector. Employees bore the brunt of managements' main concern of 'cost-cutting' and 'streamlining'. Apart from chaos and uncertainty, the scandal had a demotivating effect on employees.

The EPA, the West Virginia University researchers and other regulators, such as the CARB, in addition to highlighting the cheating on emissions, also noted environmental and health consequences. Cynthia Giles, an enforcement officer at the EPA, explained that rigging the emission test meant adding tons of air pollution, creating smog, linked to increased asthma and respiratory illness and premature deaths. "Using a defeat device in cars to evade clean air standards is illegal and a threat to public health" (Rushe, 2015).

After the knowledge of the scandal became public, VW attempted to right the wrong by settlements, compensations, callbacks and fixing the tainted cars by making engineering changes

to the relevant models. In most cases, VW's diesel vehicles in Europe could be repaired with a relatively simple software update and a 30-minute trip to the repair shop. In more difficult cases, a minor hardware fix was necessary. In the US, especially with the first-generation vehicles, it was more complicated. The first attempted fix of the emission issue compromised the original promise of power and efficiency. In a laboratory test performed by VW:

> "Engineers discovered that sometimes the pollution controls would actually work as advertised on the road. But that caused wear and tear on the exhaust system. So, to protect the cars, VW engineers changed the software, so pollution controls were shut off as soon as the driver moved the steering wheel " (Gibney, 2018, pp. 36'-38')

VW proposed installing a new catalytic converter on these vehicles. The technical fixes, however, opened a Pandora's box. Attempting to fix the engines to meet the emission standard affected the performance and efficiency of the cars. An engine is a complex closed system and as any one part is changed, it changes the relations between the elements in the system. For example, after the 'fix,' customers complained that it "caused their cars to malfunction and lose fuel efficiency" (Rogan & Paton, 2017), increasing "fuel consumption, emissions warnings on the dashboard and reduction in power" (Rogan & Paton, 2017). During the congressional hearing, the issue of how fixing the emission would compromise the fuel efficiency and performance was asked by Mr Pallone (the U.S. Representative for New Jersey's 6th congressional district), Mr Horn, although hesitant in responding affirmatively, indicated that it was possible performance would suffer when emissions were fixed. Ms Schakowsky (the U.S. Representative for Illinois's 9th congressional district) followed up and asked, 'why wouldn't you make a car that would achieve those [emission, performance and efficiency] goals?' After a silence, Horn just said "it is a great question", she then said, "I think it was because cheating was cheaper."

Two years after the scandal, VW's 'fix' was still a problem:

> "Volkswagen drivers have been left needing up to nine repairs and without their vehicles for months amid allegations that a 'fix' offered in response to the emissions scandal is causing breakdowns and part failures. […] … a growing number of drivers whose vehicles were booked in for repairs have experienced a string of failings affecting engines, exhausts, power and fuel economy." (Yorke, 2018)

**Discussion**

Our findings show how VW used impression management to engage paradox that was triggered by internal and external pressures that cascaded down the organization, rather than lose face. Moreover, the data reveal that these paradoxes, experienced in a fearful and intimidation-filled decision-making context, led to a charade of achievement. Figure 4 depicts the dynamics behind the scandal and how paradoxes can get out of control.

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Insert Figure 4 about here
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The broken lines in the top half of Figure 4 show the idealistic approach (i.e., transcendence) which was represented: an artefact maintained the illusion that transcendence had been achieved. To maintain the paradox of "both/and" discourse, an "either/or" practice was adopted. It was the discovery of an artefact that sustained the illusion that brought the false transcendence into light: leading to the reported scandal. Fixing the problem with a solution that in practice was an illusion left VW mired ever more deeply in the original paradox, portrayed by the broken line in the bottom half of Figure 4. The panic to fix the problem forced organization members to focus their perception on the specific tension between what proved to be incompatible goals. However, until a capability

(in this case, one that is technological) is designed that truly transcends paradoxes, organization members experience of practical tension remains unembraced. Hence, achieving the impossible remains, at least for now, as impossible as ever.

The past focus on the paradox literature has largely been on positive possibilities rather than negative consequences. Researchers alert to the vicious circles of paradox and cautioned that the current focus on the positive might lead to "narrowness and unquestioned acceptance of existing knowledge" (Cunha & Putnam, 2019, p. 96). Cunha and Putnam (2019, p. 96) argue that theoretical premises and concepts are being adopted without considering their effects. One consequence could be the 'taming' of paradox through 'homogenization' within management and organization studies (Cunha & Putnam, 2019, p. 100). Given the focus on positive possibilities, deviant processes, such as false mastery of paradoxes, remain fundamentally unexamined. By scrutinizing the other side of paradoxes, we make three main contributions.

First, by exploring the dark side of paradoxes and the 'organizational misbehaviour' associated with the paradoxical promise posited through stretch goals whose premises proved unattainable, we added a case of drama (Cunha & Putnam, 2019) to the vibrancy and complexity (Farjoun, 2017) of the paradox literature. In this regard, as MacLean and Behnam (2010, p. 1517) noted, "organizational behaviour theories, in general, tend to overemphasize the positive aspects and outcomes of organizational life, ignoring the fact that the same models that predict productivity and organizational citizenship behaviour can also foretell organizational misbehaviour." External and internal pressures which give rise to overambitious and competing demands force firms to appear to be what they are not (Delmas & Burbano, 2011). Thus, exploring the VW case in light of the paradox literature leads to an appreciation of the element of the absurd in paradox: persisting in the direction of the impossible. Not all oppositions can be integrated: paradoxifying reality can

bring difficulties, especially if the representational practice of paradox management is used as a strategic tool. Given the paucity of critical views expressing the dysfunctional side of paradoxical approaches, this paper acts as a caution.

As managers attempt to embrace paradoxes in the experience of a mission impossible, unwelcome surprises are increasingly likely to occur (Sitkin et al., 2011). Hitherto, the focus on the positive aspects of paradox has excluded much of this from view, although one suggestion has been to "foster theoretical 'boundary spanning' (rather than just buffering existing boundaries) and 'seeking opposing views'" (Schad, Lewis, & Smith, 2019, pp. 114-115) to enrich our understanding of paradoxes. Although embracing paradox is touted as 'the new normal,' (Gaim, 2017), we have tried to stress that, when done badly, via false mastery, the new normal can be perilous. MacLean and Behnam (2010) argue that scholars exploring the dark side of organizations are able to add complexity and explanatory power to theoretical models, which our case encourages paradox scholars to do (see Smith, Erez, Jarvenpaa, Lewis, & Tracey, 2017, p. 311).

Second, by introducing impression management, we contribute to the paradoxical promise-practice gap associated with the nested nature of paradoxes and, in doing so, elaborated the risk of the representational practice of paradox management as a strategic tool. Using the VW emissions scandal, we illustrate the dysfunctional consequences of embracing paradox in appearance but not in practice. Managerially, being faced with a paradoxical stretch goal the achievement of which proved to be nearly unattainable, members at lower levels were left with little choice other than to admit impossibility or create the illusion of having achieved the impossible. In what can be considered as shifting meaning (Jarzabkowski, Bednarek, Chalkias, & Cacciatori, 2019, p. 126), it was the latter that prevailed. Similarly, in what Gilbert et al. (2018, p. 57) call transferring, management handed over an impossible tension for engineers to engage, creating a decoupling of

strategy-implementation and a detachment between organization-level goals and actions through which such goals are realized (Hengst et al., in press). In such a case, asking people to do the impossible is likely to *be* impossible and claiming to have done so while failing to embrace competing demands, leads to vicious circles, as noted by Smith and Lewis (2011).

In a situation "where elite problematization are able to assert their domination over all interpretive repertoires, certain consequences tend to follow" (Gaim, Wåhlin, Cunha, & Clegg, 2018, p. 14). In VW's case, the engineers reconstructed their understanding of their practice not as designing cars that could do the impossible but as sustaining the illusion that the impossible was being achieved. In consequence, paradoxes appeared to be managed. Our case uncovers the implication of paradoxes being multiple, nested, interconnected and hierarchical (Jarzabkowski, Lê, & Van de Ven, 2013; Sheep et al., 2017; Gilbert et al., 2018; Schad & Bansal, 2018). A gap between senior management achieving a goal, the solution of which is left to lower-level managers and engineers, exemplifies nestedness as tensions at one level spark tensions in another (Andriopoulos & Gotsi, 2017, p. 519; Gilbert et al., 2018). Achieving the multitude of demands flowing from the overarching goal of VW created conditions in which stretch goals could not be met. A paradox was being socially constructed whose strategic choices turned on being either foregone or forged.

The gap between thinking about paradox and practising paradox requires further exploration. In principle, achieving stretch goals that are paradoxically set at the top level requires transcendence at lower levels, to reframe a situation in a novel way with the purpose of overcoming seemingly intractable contradictions (see Abdallah et al., 2011, p. 335). As this proved to be impossible in engineering terms, the achievement of the transcendence and by extension, the stretch goals, became ever more distant. In this context, the response was to engage in impression management and fake it as a way of maintaining organizational face (as in Goffman's (1967) face-work) so that

the representational claims of marketing could be promoted with apparent credibility to consumers and regulatory authorities.

Firms pretending to do something that is socially desirable find that it is not always possible to sustain an illusion of attainment or purely ceremonial adoption (Boxenbaum & Jonsson, 2008, p. 88). In some managerial situations, senior managers might be asked to engage competing organizational demands and tensions as paradoxes. Framing tensions as paradoxes at the top level is a move that seeks to dominate the "interpretive repertoires" (Gaim et al., 2018, p. 14) of those at the bottom of the hierarchy. Engaging paradoxes can push organizations beyond current limits by developing novel solutions (Cunha et al., 2017, p. 143). In cases where the sources of paradox are ignored (Schad & Bansal, 2018, p. 1491), however, the perceptions of the paradoxes as well as their complexity (Raisch et al., 2018), will differ across levels, leading to unintended consequences (Schad & Bansal, 2018, p. 1496). Whereas the top team might see the paradoxes as a 'managerially resolvable' challenge, lower levels in the hierarchy experience the paradox as 'technically irresolvable'. In the face of the impossible, organisation members, in our case, falsely managed impressions rather than emissions.

Third, by discussing the decision-making context, we indirectly expounded on what it takes to embrace paradoxes when they are a stretch too far. In addition to focusing on what paradox is, how it is nested, how it is managed, etc., one might ask about "organizational arrangements" (Gaim, 2018, p. 507): what does it take to do it well? The question is relevant because "as society grows more complex, paradox is and will continue to be a phenomenon that crosses all aspects of organizational life" (Fairhurst et al., 2016, p. 8). Given how managers shifted the paradoxical tension (Gilbert et al., 2018) and a governance structure that discouraged organization members from passing up bad news and the mentality that 'the end justifies the means', employees could

resort, as was in our case, to riskier gambles and illegal methods to achieve ambitious top management goals (Ordóñez, Schweitzer, Galinsky, & Bazerman, 2009; Crête, 2016). Doing so was preferred to losing face in a context of decision-making (Smith, 2014) characterized by intolerance of failure, fear and intimidation (Edmondson, 1999), tolerance for rule-breaking and a governance structure lacking checks and balances. In this regard, Delmas and Burbano (2011, pp. 73-74) noted how firms' incentive systems rewarding and punishing performance can lead to unethical behaviours, such as defrauding, falsification of records and pursuing shortcuts. Similarly, Edmondson (2018, p. 57) noted motivation by fear can be effective but only in creating an illusion that goals are being achieved. Alternatively, "in adopting stretch goals, organizations with cultures that offer employees rich opportunities to celebrate wins and to learn from losses will do better" (Cunha et al., 2017, p. 149). Laufer (2003, p. 257) argued that constant pressure on middle and lower management to produce results fosters an environment in which tacit acceptance of illegalities and turning a blind eye to deviance increases their tolerance throughout the hierarchy. In such a decision-making context, when coupled with an egoistic climate (Delmas & Burbano, 2011; Petit & Bollaert, 2012), leaders' "overestimation of their own problem-solving capabilities and their firm's resource capabilities" (Claxton, Owen, & Sadler-Smith, 2015, p. 58) exacerbate the intensity of paradox experienced at lower levels, potentially leading to face-work. Hence, unchecked boldness at the top (Brennan & Conroy, 2013) creates the petri dish in which deception flourishes as the antidote to paradox. For fear of losing face (Goffman, 1967, p. 9) and consequent admonishment, those at the lower level worked to protect the narrative of transcendence created at the top, instead of confronting top management with the practical difficulties of "both-anding". Hence, the decision-making context could be one area to look at when working on corrective actions following misconduct (Hersel, Helmuth, Zorn, Shropshire, & Ridge, In-Press)

## Conclusion

Given the increased traction that embracing paradoxes afford it is not surprising that the literature is largely composed of research inclined to idealize such thinking and theorizing. Using a case that succeeded in representation but that failed to engage paradoxes in practice, the paper contributes to the literature on paradox by discussing how the 'embrace' of paradox can trigger dysfunctional behaviours, filling the gap between promising and practising. The embrace of paradox has mostly been mooted conceptually, in terms of organizations and managers' challenges when faced with competing demands. We empirically analysed the 'embrace' of a paradox that was impossible to embrace. In practice, we caution organizations and their members from overconfidence in their ability to embrace paradoxes successfully and the danger of using a representational practice of paradox management as a strategic tool. Moreover, leader behaviour can diffuse a reckless approach to paradox throughout an organization, contributing to the dynamics of nestedness, making the pursuit of paradox not a glorious transcendence of achievements but a potential trap reverberating across levels leading to organizational face-work simulating solutions to complex problems, triggering vicious circles difficult to contain.

Using a single case to zoom in comes with its own limitations. The extreme case empirically highlighted the dark side of paradoxes; in future, a multi-case or industry-wide study could shed light on how paradoxical stretch goals lead to impression management rather than paradoxical mastery. More specifically, following Jarzabkowski et al. (2019), paradox scholars could zoom out, elevating the level of analysis and taking a macro perspective (Schad & Bansal, 2018) to understand paradoxes as grand challenges not yet transcended, such as controlling air pollution. Given the normal stress on two demands, our paper examined a case in which three demands needed to be embraced (a so-called tri-paradox). We invite scholars to further explore other similar

cases that can be explained by our model and delve deeper on the nature and implication of tri-paradoxes in greater detail.

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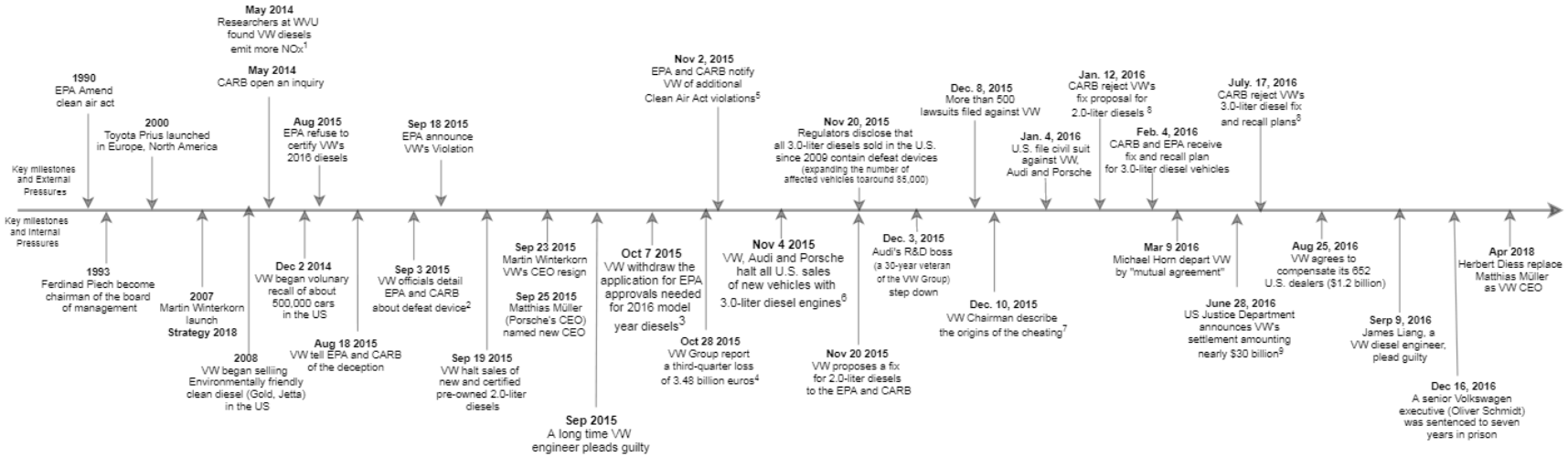


[1]Researchers at West Virginia University found two VW diesels (a 2012 Jetta and a 2013 Passat) emit far more nitrogen oxide on the road than expected and alert the EPA and CARB.

[2]VW officials detailed how its cars contain a defeat device that cuts emissions when the car is being tested in a lab both to EPA and CARB.

[3]VW alert regulators to new, previously undisclosed emissions control software in new engines.

[4]The reported (compared with a 3.23 billion in profit a year earlier) in more than 15 years

[5]~10,000, 3.0-liter V-6 diesels used in VW, Audi and Porsche vehicles

[6]This meant grounding all diesel models sold by the VW Group in the U.S. market

[7]VW Chairman Hans Dieter Poetsch describe the origins of the cheating: Engineers installed the cheat software after initially finding it "impossible" for the EA 189 2.0-liter diesel engine to meet stricter US limits on nitrogen oxide emissions legally.

[8]CARB reject VW plan for 2.0-liter dieselsas "incomplete" and "substantially deficient," and for the 3.0-liter diesel fix and recall plans, sayingthey "fall far short" of legal requirements needed to regaincompliance.

[9]US Justice Department announce that VW agreed to pay more than $15 billion in far-reaching settlements with federal regulators,diesel owners and dozens of states. VW agrees to set aside up to $10 billion torepurchase affected 2.0-liter diesels, contribute $2.7 billion to an environmental remediation fund and spend $2billion on electric vehicle projects.

Figure 1 VW scandal timeline

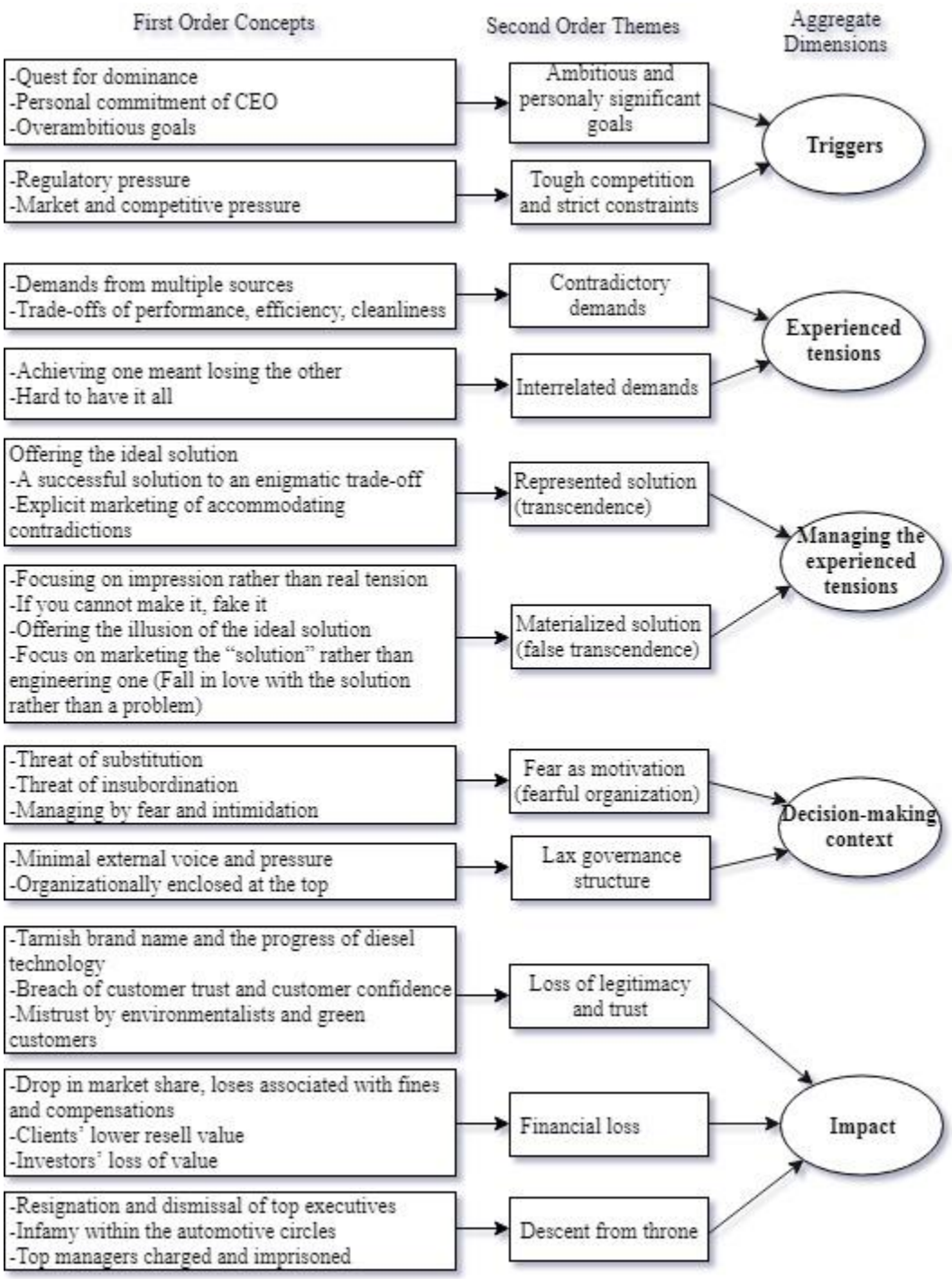


Figure 2 Data structure


Figure 3 VW stock after the scandal

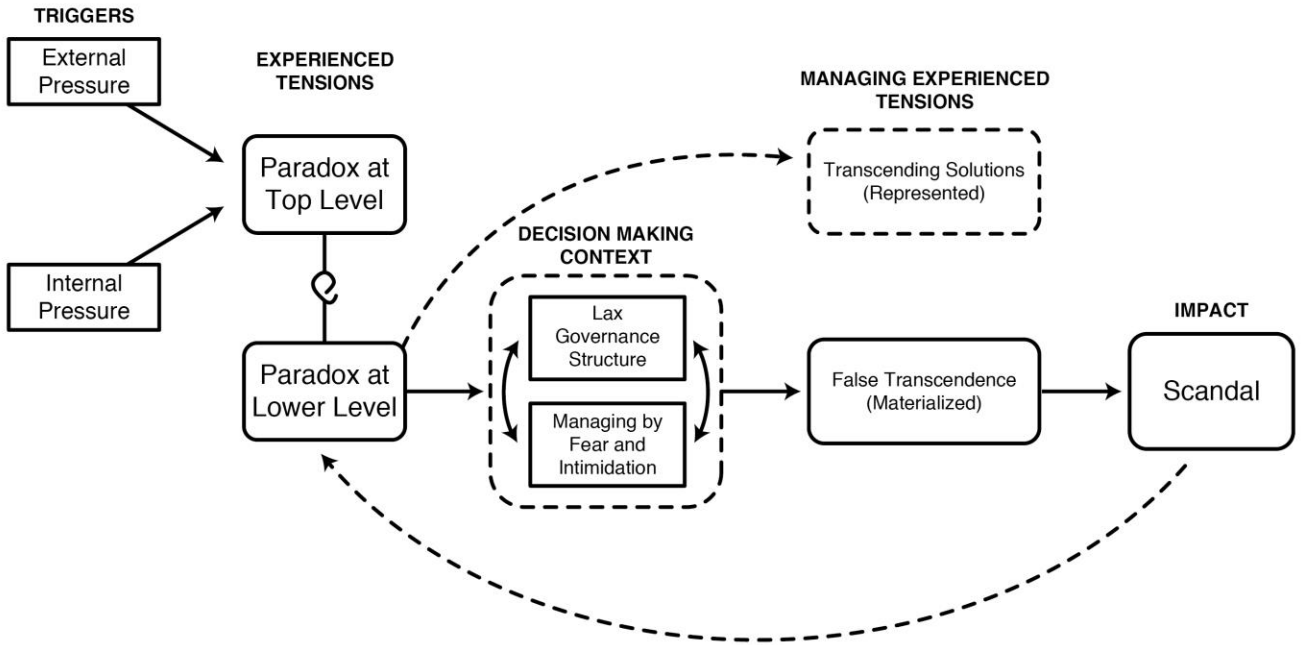


Figure 4_How paradoxes went out of control

Appendix 1

Additional representative quotes for second-order themes and aggregate dimensions

| Representative quotes | Second-order themes | Aggregate dimensions |
|---|---|---|
| - "The key element of our "Strategy 2018" is to position the Volkswagen Group as a global economic and environmental leader among automobile manufacturers. In 2018, the Volkswagen Group aims to be the most successful and fascinating automaker in the world." *(VW annual report VG-AG, 2008, p. 198)*<br>- "Strategy 2018". The specific target areas are as follows: Top customer satisfaction, measured using the Customer Satisfaction Index, Top employer, measured using the Employee Index, Unit sales growth, measured using the Growth Index and Increase in the return on sales, measured using the Return Index." *(VW annual report VG-AG, 2008, p. 113).*<br>- "Winterkorn and by extension Piëch were deploying a familiar management technique. They were establishing demanding even outrageous targets as a way of focusing the organization and discouraging complacency" *(Faster, Higher, Farther, 2017, p.151)* | Internal pressure | TRIGGERS |
| - "VW used diesel as a competitive advantage against rivals such as Toyota or General Motors' Opel, which were slower to invest in diesel." *(The New York Times, 10 June 2016)*<br>- "The seeds of VW's emissions scandal were sowed about a decade ago when the U.S. was drafting new emissions rules. Some car makers began to develop electric vehicles and hybrids. U.S. environmental officials urged VW to develop hybrids as Toyota did. Under VW's then-Chairman Ferdinand Piech and then-CEO Martin Winterkorn, the company instead pushed to come up with a diesel engine that would meet U.S. emissions targets." (*The Wall Street Journal, 2 August 2017*)<br>- "The German company has built its campaign to grow in the U.S. market on a promise that its clean-diesel engines." *(The Wall Street Journal Online, 21 September 2015)*<br>- "VW hoped to increase its market share in America as part of a plan to overtake rivals and become the world's biggest car maker." *(The Sunday Times,5 March 2016)* | External pressure | |
| - "Big firm like VW is under pressure from all directions. Regulators want reduced carbon emissions, customers want cheap but powerful cars, investors want healthy profit, and employees want good wages. Doing all these things at once is hard." (CNN, 24 September 2015)<br>- "They were under pressure to launch a "clean diesel" car in America that would qualify for subsidies and tax exemptions." (The Sunday Times, 5 March 2016)<br>- "Diesel is a petroleum-derived oil that can be used in some car engines. Diesel engines have a different design to those driven by petrol, which gives them a distinctive sound and makes them more efficient in their use of fuel, so less carbon dioxide is emitted per mile driven. However, a downside is that, without special adaptations and filters, diesel engines produce far more harmful air pollutants than petrol cars, including | Contradictory demands | EXPERIENCED<br><br>TENSIONS |

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| particulates - tiny unburnt fuel particles - and nitrogen oxides." (The Gardian, 25 September 2015)<br>- "Diesel engines have an inherent trade-off between power, fuel efficiency and clean emissions" (Live Science, 24th September 2005) | | |
| - "It was inevitable that Volkswagen's efforts to correct the issue would result in poorer performance and problems with component parts of the engine. "Volkswagen claimed that they would be able to deal with the problem without affecting the performance in any way, but unfortunately that's just not possible." (The Times, 1 April 2017)<br>- "You have power; you have energy, you have emissions: You get to choose two of them."(Live Science, 24th September 2005)---Tia Ghose<br>- "NOx trap eats up fuel or reduces the car's pep." (Live Science, 24th September 2005<br>- "The 'fix' intended to reduce NOx emissions may, in fact, have a detrimental impact on the car's performance and running costs." (The Guardian, 12 July 2017<br>- "Physically when an engine is tweaked it changes the balance, so you have issues on other parts. I am not surprised that this is being claimed from an engineering point of view." (The Times, 1 April 2017)<br>- "The challenge was that diesels produce more NOx than gasoline engines, and American NOx regulations were far more stringent than Europe's — permitting only about one-sixth of what Europe then allowed. Most ways of cleaning NOx reduced fuel economy, harmed performance, took up space, increased cost, or required frequent servicing." (Fortune, 6th February 2018 ) | interrelated demands | |
| - "I thought I had found the perfect car. The VW Diesel Jetta Wagon. The ad sucked me in. [VW Ad starts]. 'VW has more diesel cars on the rod in the US than every other brand combined. Boasting a two-liter TDI turbocharged clean diesel engine, not only does it provide excellent fuel economy, but you will love the performance too' [VW Ad ends]. It was the only car that seemed to have it all. Drove like a sports car, was not too expensive, got great mileage, and unlike the diesel of the past, it was clean. I was beaming with pride as I drove around the suburbs of our community to New York City. What I didn't know was that I was driving a killing machine." (Alex Gibney, Director of Hard NOx Documentary)<br>- "Any motor developer would have been put on guard by the engine's ability to meet standards without expensive exhaust treatment technologies." (The Daily Mirror, 15 October 2015)<br>- "Volkswagen touted vehicles with "extremely high fuel mileage coupled with low emissions." (The Guardian, 15 October 2015,)<br>- "Consumers who paid higher prices—in some cases premiums exceeding $6,000—for models advertised as clean diesel cars with impressive horsepower, fuel economy and emissions." (The Wall Street Journal Online, 29 September 2015)<br>- "With great fanfare, including Super Bowl commercials, the company flacked an environmentalist's dream: high performance cars that managed to achieve excellent fuel economy and emissions so squeaky clean as to rival those of electric hybrids like the Toyota Prius." (Fortune, 6th February 2018 ) | Represented solution (transcendence) | MANAGING EXPERIANCED TENSIONS (illusion and reality ) |
| - "Mr. Liang and colleagues began designing a new engine around 2006 but "soon realized…that the engine could not meet both customer expectations as well as new, stricter U.S. emissions standards." (The Wall Street Journal Online, 9 September 2016)<br>- "Software that activates full exhaust emissions controls only during testing but then reduces their effectiveness during normal driving. The | Materialized solution (false transcendence) | |

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| result is that cars can emit nitrogen oxides at up to 40 times the allowable standard." (The Wall Street Journal Online, 21 September 2015)<br>- "Computer code, allowed Volkswagen cars to emit less nitrogen oxide in laboratory tests than in normal road use'. 'Such gadgets became known as "defeat devices," and they have long been banned by the EPA." (The Wall Street Journal Online, 21 September 2015).<br>- "The EPA and CARB discovered the defeat device software following independent analysis by researchers at West Virginia University, who were promoted into action by the International Council on Clean Technology." (The Guardian, 23 September 2015)<br>- "The software installed to allegedly trick emissions testing works. But it masks the ability of the car's engine to perform as advertised, without busting emissions limits." (The Wall Street Journal (Europe Edition), 24 September 2015)<br>- "The engineers had installed defeat devices in engines after realizing they could not hit emissions targets for diesel cars in the US by "permissible means."(The Guardian, 10 December 2015)<br>- It lowered the level of nitrogen oxides emitted when it detected that the car was being tested and then resumed illegal higher levels on the road." (The Times, 16 December 2015)<br>- "Code was installed by VW engineers who could find no other way to meet the company's ambitious emissions targets." (The Sunday times, 5 March 2016)<br>- "When the engineers failed, VW has said, they rigged the engines to cheat on emissions tests." (The Wall Street Journal (Asia Edition), 2 August 2017) | | |
| - "There was always a distance, a fear and a respect... If he would come and visit or you had to go to him, your pulse would go up," (Reuters, 10 October 2015)<br>- "Geht nicht, gibt's nicht" "The impossible doesn't exist.'" *(Faster, Higher, Farther, 2017, p.151)*<br>- "Do it, or I'll find somebody who will." (Road and track, 4, November 2015)<br>- "That's the way he ran everything. It's what I call a reign of terror and a culture where performance was driven by fear and intimidation." (Road and track, 4, November 2015)<br>- "If you didn't like it, you moved of your own accord or you were performance-managed out of the business." (Road and track, 4, November 2015) "Mr. Piëch was exacting, willful, feared by subordinates and obsessive about his company's products. He was also remarkably successful, leading Volkswagen from near bankruptcy in the early 1990s to No. 2 automaker in the world, after Toyota." (The New York Times, 26 April 2015)<br>- "As serious as this crisis is, it is also offering us an opportunity to drive much-needed structural change and we will use that opportunity," Mr. Müller said….He called for empowering Volkswagen's workers, especially middle managers who were often silenced under Mr. Winterkorn and former Volkswagen chairman, Ferdinand Piech. "We don't need any yes-men," Mr. Müller said. "The future belongs to the courageous. I am appealing to the curious, to the nonconformists, to the pioneers." (The Wall Street Journal Online, 10 December 2015) | Fear as motivation | DECISION MAKING CONTEXT |
| - "Then there is VW's odd shareholder structure. It has two classes of shares: ordinary and preferred. The ordinary shares hold the clout, while the preference shares have no voting rights. Porsche Holdings, the Porsche and Piech family vehicle, has 52.2% of the voting rights, Lower | Lax governance structure | |

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| Saxony has another 20% and Qatar has 17%. Outside investors are left with just 10.8% of the voting rights despite holding about 40% of the economic interest (rights to dividends and other payments). So more than 70% of VW's voting rights are devoted to preserving the status quo. As a result, protecting jobs, wages and working conditions remain top of the agenda. This has left VW's German operations saddled with costs and productivity way out of kilter with the rest of the industry." (The Sunday Times, 8 November 2015)<br>- "VW is entwined with German politics and labour relations. It has its own piece of legislation named after it, the Volkswagen Law. Put in place in 1960 to shield the company from takeovers, it gives huge power to the central German state of Lower Saxony, which owns a 20% stake." (The Sunday Times, 8 November 2015)<br>- Matthias Müller's promises: "Volkswagen Group will undergo fundamental realignment in terms of its structure and culture",("Matthias Müller: "The USA is and remains a core market for the Volkswagen Group."," 2016) "We will continue to press forward with changes to our way of thinking and working" ("Volkswagen reaches settlements with U.S. government," 2017)… "Under my leadership, Volkswagen will do everything it can to develop and implement the most stringent compliance and governance standards in our industry" ("Matthias Müller appointed CEO of the Volkswagen Group," 2015). | | |
| - "When I first heard about the scandal, I was furious. VW had lied to me. They had pitched me a vision of my dream car but sold me my worst nightmare. A car that was polluting 50 times more than advertised." (Alex Gibney, Director of Hard NOx Documentary)<br>- "Excellent reputation of the German car industry and especially Volkswagen will suffer." (The Wall Street Journal Online, 21 September 2015)<br>- "Volkswagen has always been known for high quality vehicles, but the revelation of "cheat devices" has severely dented confidence." (The Sun, 2 November 2015)<br>- "It is worth noting that the affected vehicles include fuel-efficient cars, such as those diesel vehicles that won the 2009 and 2010 Green Car of the Year awards though these awards have since been rescinded." (The Guardian, 9 December 2015)<br>- "Millions of people have been driving the company's 'clean diesel' vehicles thinking they were helping the environment by doing so." (Mail Online, 12 October 2015)<br>- "The scandal has certainly helped dispel the aura of impeccable German corporate rectitude." (Independent, 17 September 2016).<br>- Press release after the scandal: "this crisis is first and foremost a crisis of confidence.", "Our most important task will therefore be to win back the trust we have lost" ("Matthias Müller: "We will overcome this crisis"," 2015)… "I personally am deeply sorry that we have broken the trust of our customers and the public." (Volkswagen Congress Hearing: Emissions scandal 2015)… "My most urgent task is to win back trust for the Volkswagen Group (Matthias Müller) | Loss of legitimacy and trust | IMPACT |
| - "A third of the company's stock market value has evaporated in two days." (The Guardian, 28 September 2015)<br>- "VW has reported a €2.5 billion loss in the third quarter as the diesel emissions scandal that has rocked the group dragged it to its first quarterly loss in more than 15 years." (The Times, 28 October 2015)<br>- "Volkswagen is facing a £30bn lawsuit over its diesel emissions scandal." (Mail Online, 18 October 2015) | Financial loss | |

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| - "Germany's largest investor association, DSW; Hermes Investment Management, a London-based fund with £24 billion ($34.67 billion) under management; and Deminor, a Brussels-based company that advises institutional investors, called for a special independent audit to investigate Volkswagen's management and supervisory board for "potential breaches of duty" in connection with the emissions scandal." (The Wall Street Journal Online, 23 May 2016)<br>- "The suit alleges customers paid premiums for Volkswagen and Audi cars powered by clean-diesel engines on false promises of horsepower and fuel efficiency, and that their vehicle values will now suffer as a result of the EPA probe and any recall." (The Wall Street Journal Online, 21 September 2015) | | |
| - "Martin Winterkorn steps down despite denying wrongdoing, as legal claims and further senior departures loom." (The Guardian, 23 September 2015)<br>- "Mr. Hatz, well known in automotive circles because of his previous role as chief of research and development at Porsche, is the second person to be arrested in Germany in connection with the Volkswagen case and the first German citizen." (The New York Times, 29 September 2017)<br>- "Oliver Schmidt, a German citizen who for several years led Volkswagen's environment and engineering office in Auburn Hills, Mich., faces charges that he conspired to defraud U.S. officials and customers with diesel-powered vehicles featuring illegal software that duped government emissions tests." (The Wall Street Journal (Europe Edition), 26 July 2017)<br>- "First and foremost it has been a disaster for Volkswagen's management. Mr. Winterkorn soon resigned in disgrace and several high-ranking executives have been suspended." (Independent, 17 September 2016) | Descent from throne | |