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Corporate Greening and Employee Green Behavior – a Multilevel Analysis of Sustainability Paradoxes and Green Identity in the Organizational Context

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“It is perfectly true, as the philosophers say, that life must be understood backwards. But they forget the other proposition, that it must be lived forwards.”

Sören Kierkegaard

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The motivation to begin this dissertation dates back to May 2013 when I started to work as a research assistant in the research project "enEEbler – Mitarbeiter-Engagement für Erneuerbare Energien in Unternehmen". It has been a long and exciting journey with many twists and turns since then and I am grateful that I can finally present my dissertation. I couldn't have achieved this without the continuous support of different people, above all the members of my doctoral jury whose insight and knowledge steered me through this PhD process. For that, I would like to express my deepest gratitude.

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Abstract

Employee green behavior is a key contributor to corporate greening. While organizations often focus on technical solutions, the role of employees in corporate greening activities is underestimated. Researchers have pointed at different individual as well as organizational factors' impacts on corporate greening and employee green behavior. However, the multilevel nature of employee green behavior has often been neglected, as have the contextual factors around it. This doctoral dissertation addresses this gap in three papers applying qualitative and quantitative methods to study how employee green behavior is influenced by sustainability paradoxes and the paradoxical tensions they cause for employees and organizations. The first paper examines how sustainability paradoxes influence corporate greening. Activities directed at corporate greening render sustainability paradoxes salient; these are (not) worked through by organizational members in different ways, and have unintended consequences on the effectiveness of corporate greening measures. The second paper explores green employees' paradoxical identity and performing tensions that arise when employees attempt to engage in green behaviors. It shows that paradoxical tensions can lead to responses of splitting, withdrawal, or, in the most severe cases, pursuing exit strategies. Finally, the third paper studies the conjoint effect of environmental self-identity, perceived supervisory support toward the environment, and perceived organizational support toward the environment on predicting employee green behavior. It shows that a stronger environmental self-identity and higher levels of supervisory support strengthen the effect of organizational support on employee

green behavior. However, if environmental self-identity is weak and perceived supervisory support toward the environment is low, organizational support is found to be not related to employee green behavior. These results have implications for the management of employee green behavior and corporate greening activities. Overall, this dissertation contributes to the research on corporate greening and employee green behavior by offering new insights into the paradoxical dynamics of corporate greening activities in organizations, as well as the role of identity and paradoxical tensions in employee green behavior at the individual level.

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Chapter 1: Introduction

Physical impacts from climate change create challenges for organizations worldwide (Winn et al., 2011) and have already disrupted organizational processes and led to increased costs in many business organizations (Goldstein et al., 2019). At the same time, organizations further experience pressure from consumers, governments, or shareholders to improve their environmental performance, to reduce greenhouse gas emissions, or to respond to the destruction of natural habitats (Daily et al., 2009; Lamm et al., 2015; Sarkis et al., 2010; Zibarras & Coan, 2015). Organizations are thus associated with climate change in two ways: they contribute to its causes, but also to its solution (Unsworth et al., 2021). Organizations are central actors in combating the detrimental effects of environmental degradation, pollution, and resource depletion, and are forced to limit and reduce their negative impact on the natural environment. Although organizations play a key role in tackling these challenges, corporate greening seems to be moving at a very slow pace. The often employed environmental management systems ISO 14001 or EMAS (Morrow & Rondinelli, 2002) are found to be insufficient to achieve greener organizations (Boiral, 2007; Gonzalez-Benito & Gonzalez-Benito, 2005; Morrow & Rondinelli, 2002). Research shows that there is a growing need to change current organizational practices in order to achieve environmental sustainability (Banerjee, 2001; Shrivastava & Hart, 1994; Starik & Rands, 1995; Wright et al., 2012).

Organizations can be supported in their corporate greening activities with the help of their own employees (Andersson et al., 2013; Hanna et

al., 2000; Renwick et al., 2013; Wolf, 2013). Some researchers have stated that "the environmental performance of organizations largely depends on the voluntary participation of employees in greening activities" (Yuriev et al., 2018, p. 379). Besides formal roles and duties, top management, line managers, supervisors, and front-line employees are required to contribute to environmental sustainability in organizations (Kim et al., 2017; Paillé et al., 2016; Ramus & Steger, 2000). However, many factors hinder employee green behavior (EGB) (Yuriev et al., 2018) and corporate greening activities (Hahn et al., 2010; Hahn et al., 2015). Furthermore, although green employees are willing and able to support their organization's greening efforts they feel alienated from doing so (Carollo & Guerci, 2018; Wright et al., 2012). For this reason, this doctoral dissertation aims to further explore the challenges around EGB and corporate greening, and thus contribute to science and practice.

Defining corporate greening and employee green behavior

Corporate greening refers to a variety of activities that are directed at lowering an organization's carbon footprint and limiting further damage to the natural environment. In the lack of a general definition of corporate greening, I use the following definition: "corporate 'greening' [is] the process by which companies can become more environmentally responsible" (Schaefer & Harvey, 1998, p. 109). According to Shrivastava and Hart (1992, p. 186) a company in the process of corporate greening would seek to minimize their negative impact on the environment by "1) reducing energy and material use through conservation measures; 2) making greater use of recycled or

renewable materials and energy; or 3) off-setting consumption with replenishment." These responses are based on the understanding that organizations cannot "continue indefinitely to use natural resources without providing for their renewal" (ibid.), i.e., they have the responsibility to save resources, stop wasting resources, reduce the consumption of new materials, as well as make more use of renewable energy (ibid.).

One contributor to corporate greening is EGB (Andersson et al., 2013; Paillé, 2020). EGB is the workplace form of pro-environmental behavior (Ones & Dilchert, 2012a) and refers to unrewarded, extracurricular greening behaviors by individuals at all levels of the organization (Ciocirlan, 2016; Ramus & Killmer, 2007). EGB can be referred to as "scalable actions and behaviors that employees engage in that are linked with and contribute to or detract from environmental sustainability" (Ones & Dilchert, 2012a, p. 87). EGB is described as:

> *work behaviors directed toward the protection or improvement of the natural environment, which may or may not generate value for the organization; these behaviors may be performed by employees situated at any organizational level. [EGB] includes organization citizenship behaviors for the environment (OCBEs), environmental in-role behaviors, and environmental counterproductive workplace behaviors. (Ciocirlan, 2016, p. 1)*

The EGB taxonomy covers five areas (Ones & Dilchert, 2012a): (1) working sustainably, (2) conserving resources, (3) influencing others, (4) taking initiative, and (5) avoiding harm. EGBs can be grouped into specific and more abstract forms (Francoeur et al., 2021). The more

specific forms include all sorts of discrete behaviors directed at environmental protection (e.g., printing double-sided, recycling, saving energy) (Bissing-Olson et al., 2013; Inoue & Alfaro-Barrantes, 2015) and organizational environmental sustainability (e.g., conserving, avoiding harm, influencing others, and taking initiative) (Andersson et al., 2013; Ones & Dilchert, 2012a, 2012b). The more abstract forms refer to eco-civic engagement, eco-helping, and eco-initiatives (Paillé & Boiral, 2013). Eco-civic engagement is about the participation and volunteering in environmental events as well as about staying informed about a company's developments directed at corporate greening. Eco-helping includes encouraging and helping colleagues to engage in greening behaviors, while eco-initiatives refer to carrying out voluntary green behaviors in daily work situations (Paillé & Boiral, 2013). In the literature there is no distinction between pro-environmental EGB and EGB directed at carbon emission reduction (Unsworth et al., 2021).

EGB can be split into voluntary EGB and required EGB (Ciocirlan, 2016; Norton et al., 2015). Voluntary EGB refers to all discretionary green behaviors performed by employees, while required EGBs are organizationally initiated interventions that are conducted as part of one's duties at work (Norton et al., 2015). EGB is used in this dissertation to refer to all forms of voluntary green behaviors. To be able to clearly distinguish bottom-up and voluntary EGB from top-down organizationally initiated greening activities at the (intra-)organizational level, I use the term "corporate greening activities" for the latter. The reason for this is that required EGB, although by definition refers to organizationally demanded green behaviors, does not include required work tasks that are not directly part of one's job

duties, but rather includes those expected to be performed ad-hoc, such as during an organizationally initiated greening project.

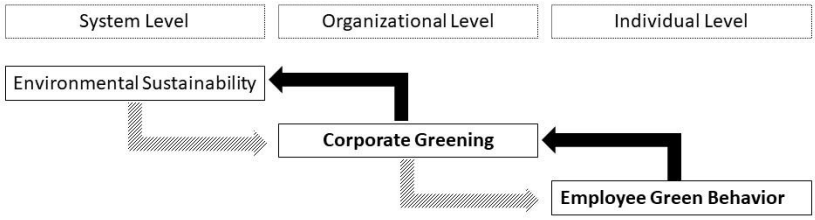
The role of employees in achieving organizational environmental sustainability

Environmental sustainability has roots in sustainable development, which was first defined by the Brundtland Commission: "Humanity has the ability to make development sustainable to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland Commission, 1987, p. 24). Organizational sustainability commonly rests on three pillars, the so-called triple bottom line of economic, ecological, and social goals (Elkington, 1998). In practical terms, but also in research, business goals are prioritized above ecological and social goals (Hahn et al., 2010; Hahn et al., 2015), and this is referred to as the "business case" (Schaltegger et al., 2019). This business dominance has led to criticism of the concept and disputed outcomes in practice (Banerjee, 2011, 2012; Elkington, 2018). As a solution, researchers began to address this issue by following an integrative approach, aiming for the simultaneous consideration of economic, ecological, and social goals (Hahn et al., 2015). Scandals like that of Volkswagen diesel make it clear that even the most well-intended organizational goals ("fast, cheap, and green vehicles") (Gaim et al., 2019) can be counteracted by individual organizational members. An investigation listed the role of individual employees as number one of three main factors: "The misconduct and shortcomings of individual employees" (Volkswagen

AG, 2015). This also shows that the translation of organizational environmental sustainability goals largely depends on the support of organizational members.

Repeatedly, research has pointed at the employees' pivotal role in the achievement of corporate greening (Jackson et al., 2012; Paillé, 2020; Yuriev et al., 2018). EGB contributes to corporate greening (Paillé et al., 2016; Ramus & Killmer, 2007), which in turn improves environmental sustainability (Andersson et al., 2013) (see Figure 1). At the same time, environmental sustainability can be broken down into organizational strategies and various activities directed at corporate greening (Engert & Baumgartner, 2016), while corporate greening activities again influence EGB through green policies (Ramus & Steger, 2000) or by providing a green climate that facilitates EGB (Norton et al., 2012).

Figure 1 Connection between environmental sustainability, corporate greening, and employee green behavior



Source: Own elaboration

EGB is a multilevel concept (Kim et al., 2017; Norton et al., 2015; Starik & Kanashiro, 2020) with a high complexity that is caused by its

"embedded and nested nature" (Andersson et al., 2013, p. 151). Consequently, EGB is likely to be influenced by multiple factors (Francoeur et al., 2021) and depends on various individual and organizational determinants (Inoue & Alfaro-Barrantes, 2015; Lo et al., 2012).

Although individuals' environmental initiative is important for corporate greening (Andersson & Bateman, 2000; Girschik, 2020; Hanna et al., 2000), the influence of the organizational context in which they take place should not be neglected (Andersson et al., 2013). Influential aspects of corporate greening are work climate perceptions towards environmental sustainability (Norton et al., 2012) and support from management and the organization (Ramus, 2001), as well as an environmental infrastructure that facilitates environmental practices in organizations (Young et al., 2015).

Research gaps and overall research questions

Research on corporate greening focuses on two areas: studies addressing EGB mainly at the individual level (Bissing-Olson et al., 2013; Graves & Sarkis, 2018; Paillé & Mejía-Morelos, 2014) and research dedicated to environmental sustainability at the organizational and systems level (Hahn et al., 2017; Slawinski & Bansal, 2015).

Limitation: Neglecting green employees

Typically, literature on EGB has assumed that employees need to be motivated for green behaviors (Graves & Sarkis, 2018). On the other hand, personal factors such as personal norms, attitudes, beliefs, or motivation have been found to be decisive for EGB (Bissing-Olson et

al., 2013; Ciocirlan et al., 2020; Raineri & Paillé, 2016). Regardless of the approach, there is no distinction between non-green and green employees and how they might act differently in regard to EGB.

Green employees have been found to possess a green identity, or more specifically environmental self-identity, be intrinsically motivated, and aim for consistency between their private and work green behavior (Ciocirlan, 2016). A perceived mismatch between self and workplace might lead to detrimental effects. Rather than motivating these green employees (Renwick et al., 2013), it must thus be understood why these employees feel alienated and how this could be overcome.

Additionally, studies on sustainability managers have conveyed that organizational members with a strong environmental self-identity struggle a lot at their workplace to fit in (Wright et al., 2012). Some sustainability managers describe their role as being perceived as "hippie" (Wright et al., 2012) or see themselves as "activists" (Carollo & Guerci, 2018). However, not all employees can handle the mismatch between their environmental self-identity and their not-so-green work environment well. So-called deep-greens have been found to face trade-offs when their autonomous motivation is undermined by interventions such as goal setting techniques (Davis et al., 2020). So far, EGB literature has neglected the study of green employees or employees who are greener than their workplace (Ciocirlan, 2016; Davis et al., 2020). Thus, I ask: How do green employees engage in EGB and what consequences does it have for them and the organization they are working for?

Limitation: Neglecting structural and contextual factors that influence EGB and corporate greening

Up to now, 87% of all studies on EGB have been quantitative in nature (Francoeur et al., 2021, p. 13). However, as Lo et al. (2012) pointed out, there are organizational determinants that are equally important in studying EGB but are difficult to measure, organizational context being one of them. Workplace-related constraints on pro-environmental behavior are still under-researched (Katz et al., 2022). Around eight different organizational barriers have been listed, ranging from poor communication on environmental goals to a lack of organizational resources (Yuriev et al., 2018). Often, EGB is found to be determined by the green policies that exist in organizations or the support from direct supervisors who guide and motivate employees to engage in EGB (Paillé et al., 2020; Raineri & Paillé, 2016; Ramus & Steger, 2000). Thus, I ask: How does the organizational context influence EGB?

Sustainability researchers on the other hand present alternative explanations to inaction and challenges in corporate greening: (1) Companies treat environmental aspects under a dominant instrumental logic which places more value on financial outcomes than on sustainability concerns (Hahn et al., 2014). (2) Hoffman and Bazerman (2007) argued that companies fight over a "mythical fixed pie," which describes the belief that there are only limited resources available, resulting in a fear of a loss of economic competitiveness and the disfavor of environmental activities. (3) Barriers to corporate greening develop through external pressures (e.g., legislation, shareholders) but can also arise internally (Murillo-Luna et al., 2011; Shrivastava & Hart, 1995). (4) Researchers have pointed at the short-termism that prevents

long-term corporate greening activities (Slawinski et al., 2015; Slawinski & Bansal, 2015).

Sustainability paradoxes have been used to explain theses organizational barriers to corporate greening. However, there is a perceived lack of empirical research on sustainability paradoxes in organizations (van der Byl & Slawinski, 2015) and also a need for research on the role of paradoxes of learning, performing, belonging, and organizing (Hahn et al., 2018). Thus, I ask: How do organizational paradoxes affect corporate greening?

Theoretical framework of doctoral dissertation

This doctoral dissertation is positioned in the research fields of corporate greening, EGB, as well as paradox and identity theory.

Previous research has explored EGB from different theoretical foundations and perspectives: from an environmental psychological point of view (Ones & Dilchert, 2012a, 2012b), as part of green human resource management (HRM) (Jackson et al., 2011; Jackson et al., 2012; Renwick, 2018) and sustainable HRM (Aust et al., 2019; Ehnert et al., 2014), and as a form of organizational citizenship behavior (Boiral, 2009; Boiral & Paillé, 2012). I apply a paradox theory lens to explore barriers to corporate greening activities and to study the EGB of green employees.

Paradox theory as a lens to study corporate greening and employee green behavior

Paradox theory is based on the assumption that organizations are ripe with paradoxical tensions (Smith & Lewis, 2011). Paradoxes are "contradictory, yet interdependent elements that exist simultaneously and persist over time" (Smith & Lewis, 2011, p. 382). To handle and cope with paradoxical tensions, paradox theory focuses on both/and approaches (Lewis, 2000; Poole & van de Ven, 1989) alongside more-than approaches (Cunha & Putnam, 2019) instead of the either/or approaches of trade-offs and dilemmas where one option is selected over another, thus risking "anxiety in having to make a choice" (Putnam et al., 2016, p. 9). Both/and approaches, however, allow the simultaneous inspection of interdependent goals (Lewis, 2000), i.e., creating synergies and dynamics to manage paradoxical tensions in organizational settings (Lewis & Smith, 2014). Whereas more-than approaches give the opportunity to address multiple paradoxical tensions that develop over time, and to track the handling strategies that are used to respond to them (Cunha & Putnam, 2019).

Organizational paradoxes can be situated at the individual, organizational, intra-organizational, and societal level (Carmine & Smith, 2021), thus paradox theory can be applied to individual and multilevel analysis. Owing to its metatheoretical layout (Lewis & Smith, 2014), paradox theory is often combined with a second theory: e.g., power theory (Berti & Simpson, 2019), quantum theory (Hahn & Knight, 2019), organizational change theory (Lüscher & Lewis, 2008), or systems theory (Schad & Bansal, 2018). At the individual level, paradox theory has been used with identity theory, among others, to

explain paradoxical identity tensions among sustainability managers (Carollo & Guerci, 2018).

In contrast to stakeholder theory that targets the goals of different stakeholders, paradox theory "provides insights into how this challenging task (i.e., of simultaneously addressing multiple conflicting priorities) can be accomplished" (Pinto, 2019, p. 185). Although stakeholder theory emphasizes the "simultaneous attention to the legitimate interests of all appropriate shareholders" (Donaldson & Preston, 1995, p. 67), it does not make conflicts explicit like in paradox theory (Pinto, 2019), where the conflicting nature of interdependent goals is stressed (Smith & Lewis, 2011).

Paradox theory has been applied previously in studies addressing corporate sustainability (Hahn et al., 2018; van der Byl & Slawinski, 2015). For example, it has been found that paradoxical tensions can arise between the three pillars of sustainability (Hahn et al., 2015) as well as between the long-term and short-term orientation in organizations (Slawinski & Bansal, 2015). Paradoxical sustainability tensions can manifest at the individual level, e.g., in the form of paradoxical identity tensions (Ghadiri et al., 2015), as well as at the organizational level, like in hybrid organizations (Jay, 2013). The different types of tensions that can arise around the economic versus social paradox has been investigated by Smith et al. (2013). In their study of social business they found that all four main types of paradoxes (belonging, learning, performing, organizing) manifest between economic and social goals (Smith et al., 2013).

Sustainability paradoxes can manifest between economic and social as well as ecological goals (Hahn et al., 2018). In a conceptual article, Hahn et al. (2015) identified four different types of sustainability tensions between different levels starting from the individual to the systemic level. The difference between a personal and organizational sustainability agenda is one tension that can unfold between individuals within and across the organizational hierarchy (Hahn et al., 2015). For instance, individuals promoting environmental issues in organizations are prone to experiencing sustainability tensions (Andersson & Bateman, 2000). In a study of 26 sustainability managers, Carollo and Guerci (2018) found that tensions commonly arise between being business and value orientated, being an organizational insider and an outsider, as well as between short-term and long-term orientation. In a similar fashion, tensions can be caused by the simultaneous demands of profit and social responsibility, which are inherent in the daily work of CSR consultants (Ghadiri et al., 2015).

Identity theory as a lens to study corporate greening and employee green behavior

To better capture these identity tensions, I add an identity theory lens. Identity theory is applied in this context to study micro-level behavior (Stets & Serpe, 2014). Identity theory is thus used to understand the influence of self-identity on behavioral responses. In combination with paradox theory it is commonly used to study paradoxes of belonging (Smith & Lewis, 2011) that can arise between individual and organizational identities.

While self-identity refers to the description of a person's self (Stets & Burke, 2000). It depends on the identity salience if a specific identity leads to a desired behavior (Laverie & Arnett, 2000). In other words, how relevant is it for a person to enact a certain identity? The direct link between identity and behavior or behavioral intentions was confirmed in several studies on green behaviors (Carfora et al., 2017; Sparks & Shepherd, 1992; van der Werff et al., 2013). For instance, environmental self-identity was found to predict specific but also general green behaviors (Whitmarsh & O'Neill, 2010). Fielding et al. (2008) showed that an environmental activism self-identity predicted environmental activism. Environmental self-identity is also related to various pro-environmental behaviors, e.g. recycling, buying fair trade products, and not flying on holiday (Gatersleben et al., 2014).

However, in the work context, if a self-identity can be played out depends on the embeddedness of an individual in a social structure (Stets & Burke, 2000). A perceived mismatch between a person's self-identity and work is found to result in negative responses such as withering or exit strategies (Kira & Balkin, 2014).

Self-identity is thus relevant in two ways: (1) in predicting behavior that matches one's self- identity (Charng et al., 1988; Sparks & Shepherd, 1992) and (2) in regard to the work context where the proactive handling of paradoxical tensions can lead to positive work outcomes (Liu et al., 2019), while a mismatch can trigger the perception of belonging tensions and result in unintended consequences for employees and organizations (Kreiner et al., 2006).

Institutional context and public discourse during data collection and to the time of writing

When the first data used in this doctoral dissertation were collected in 2013 for the research project *"enEEbler – Mitarbeiter-Engagement für Erneuerbare Energien in Unternehmen"* (employee engagement for renewable energy in organizations) which was funded by the German Federal Ministry of Education and Research (grant number: 01UN1202A), the public discourse in Germany was influenced by the nuclear power accident in Fukushima, Japan, in 2011 and the decision to phase out nuclear power in Germany (Bundesregierung, 2022b). It was the peak of *Energiewende* (energy transition) and the idea was to focus on sustainable energy sources for energy production, namely wind and solar (Bundesregierung, 2022a). In the meantime, the focus shifted to the reduction of carbon emissions, which is also mirrored by the most recent UN conference on Climate Change (COP26) in 2021 and the decision to meet the 1.5 degree target (United Nations, 2021). More recently, while finishing this dissertation, the European Union decided to declare nuclear power a sustainable energy source, as justified by its lower carbon footprint (Abnett, 2022; European Commission, 2022). This decision easily discards the dangers of hazardous nuclear waste and the dangers of a nuclear accident to humans and the environment/nature.

Germany's high dependency on fossil fuels is unchanged. Painfully, this has been brought to our attention by the Russian invasion of Ukraine. Germany greatly depends on Russian oil and gas which might lead to massive negative consequences for society if the supply were stopped (Oltermann, 2022).

Environmental degradation, resource depletion, pollution, and other harmful activities are ongoing (IPCC, 2021), and the focus on ecological and social goals is more necessary than ever (United Nations, 2022). The decision to consider nuclear power once again as an acceptable energy source initiated by the European Commission (2022) marks a shift from the focus on ecological goals back to the economic goals. Whatever motivates this decision (apart from rising energy prices and the uncertainty around the ability of renewable energy sources to meet our energy needs), it surely illustrates the sustainability paradox between the contradictory yet interrelated economic, ecological, and social goals that exist simultaneously and persist over time (Smith & Lewis, 2011).

The same sustainability paradox between ecological, social, and economic goals can also be found in business organizations (Hahn et al., 2018), especially if companies strive to reduce their carbon footprint and create more sustainable business practices. This thesis thus aims to address the challenges of corporate greening and the paradoxical tensions that consequently unfold for individual organizational members and also for the overall organization.

Ontological and epistemological positioning

This dissertation is guided by the epistemological and ontological positioning of critical realism (CR). CR is a philosophy of science that was developed by Roy Bhaskar as an "alternative to positivism" (Bhaskar, 2008, p. xxix). In CR, three distinct strata are distinguished: the empirical, the actual, and the real (Bhaskar, 2008; Vincent &

O'Mahoney, 2018). The empirical is about the perception of events, the actual is about the occurrence in space and time, while the real is about the mechanisms and structures that generate events (Vincent & O'Mahoney, 2018). This stratified conception helps to detect and understand underlying dependencies, powers, and causal structures (Bhaskar, 2008).

The distinction between the real and the empirical can offer new insights into existing research on EGB and corporate greening. Although the real exists but stays unobserved, it influences and causes the empirical, i.e., events that can be observed:

> *[Critical] realism regards the objects of knowledge as the structures and mechanisms that generate phenomena; and the knowledge as produced in the social activity of science. These objects are neither phenomena (empiricism) nor human constructs imposed upon the phenomena (idealism), but real structures which endure and operate independently of our knowledge, our experience and the conditions which allow us access to them. (Bhaskar, 2008, p. 15)*

According to CR research, organizations "are made of people, who form the 'parts' of emergent organizational structures" (Vincent & Wapshott, 2014, p. 152), a view that goes beyond the strict dualism of agency/structure (Scott, 2005).

To identify patterns and uncover hidden causal mechanisms (Vincent & O'Mahoney, 2018), a CR framework thereby allows for mixed-method research, i.e., combined qualitative and quantitative methodology (Zachariadis et al., 2013), and can thus function as an

alternative to pragmatism (Mukumbang, 2021). The combination of intensive methods (i.e., qualitative data collection) and extensive methods (i.e., representative samples for generalization) (Mukumbang, 2021) guides the theorizing process under the CR framework. This is done by retroductive theorizing, which is defined as "the mode of inference in which events are explained by postulating mechanisms which are capable of producing them" (Sayer, 1992, p. 107). Retroduction thus offers an alternative mode of reasoning alongside deduction, induction, and abduction, and is concerned about "why things happen including why the data appear the way they do" (Olsen, 2007, p. 1). Finally, under retroduction, multiple theoretical lenses can be combined to uncover mechanisms that account for a certain phenomenon (Vincent & O'Mahoney, 2018).

Paradox theory is concerned with the interdependent structures of paradoxical tensions (Smith & Lewis, 2011). Organizations are found to be full of paradoxes, yet they are latent and only through plurality, scarcity, or change are rendered salient (Smith & Lewis, 2011). The CR stratified construction thus lends itself to the studies in this dissertation, which aim to explore both "the tangible" (perceived and salient paradoxical tensions) and "the intangible" (latent paradoxical tensions). A CR approach is also well suited to the study of EGB with qualitative and quantitative methods. In particular, case study research is an adequate tool to study institutional mechanisms (Vincent & Wapshott, 2014). Finally, social phenomena like EGB can only be fully understood with respect to their context (Welch et al., 2011; Welch et al., 2022).

Objectives of this dissertation

The overall objective of this dissertation is thus to further explore the challenges in corporate greening and to study the role of (green) employees in organizational greening activities through a paradox and identity theory lens. Therefore, I analyze paradoxical tensions in EGB and explore the consequences paradoxical tensions have for employees and organizations engaging in corporate greening activities. In three papers, top-down as well as bottom-up greening activities are studied. By means of two qualitative studies and one quantitative study, EGB is studied from an individual as well as organizational level of analysis, thus respecting demands for more multilevel research (Andersson et al., 2013; Norton et al., 2015; Starik & Kanashiro, 2020; Starik & Rands, 1995).

Two theories are used for the analysis: paradox and identity theory. While the paradox theory lens is used to study paradoxical tensions in corporate greening activities, identity theory is applied in two ways: (1) to study individual paradoxical identity tensions that can arise in employees in their attempt to engage in EGB, and (2) to analyze the influence of environmental self-identity and organizational factors (organizational and supervisory support toward the environment) in predicting EGB. Recommendations for future research and practitioners will be drawn.

Structure of the dissertation

The dissertation is structured as follows. In the following chapters, I present my three-paper-dissertation: paper 1 in Chapter 2, paper 2 in

Chapter 3, and paper 3 in Chapter 4. In paper 1, I will explore the knotted and nested paradoxes that become salient during corporate greening activities and how organizations and individual organizational members (do not) work through the paradoxical tensions in a multiple case study. In paper 2, I will investigate the EGB of green employees, how these employees respond to paradoxical tensions that they perceive while engaging in EGB and what consequences it has for these employees and their organizations in a qualitative interview study. In paper 3, I study the conjoint influence of environmental self-identity as well as supervisory and organizational support on EGB through a survey study (for an overview of the individual papers, see Table 1). In the conclusion, I sum up the contribution of this dissertation to research and address its limitations. I also offer recommendations for future research and practice.

Table 1 Overview of the three dissertation papers

Paper	Title	Research Questions	Methodology	Theoretical Framework	Conference Presentation
1	Knotted and nested paradoxes in corporate greening: How organizations and organizational members (do not) work through sustainability paradoxes	1) What organizational paradoxical tensions do organizational members experience in their efforts to engage in corporate greening activities? 2) How do members of different organizational levels respond to paradoxical tensions in the course of implementing and conducting corporate greening activities?	Qualitative case study	Paradox theory	EGOS 2021
2	Environmentalists at work: The interplay between self-identity and paradoxes and its consequences for employee green behavior	1) What paradoxical tensions become salient for green employees in their efforts to engage in green behavior? 2) How do green employees respond to the paradoxical tensions and which consequences does it have for the organization?	Qualitative interview study	Paradox theory & identity theory	EGOS 2020
3	The role of self-identity, supervisory support, and organizational support in predicting employee green behavior	1) To what extent does the conjoint interaction between EnvID and PSS-E affect the relationship between POS-E and EGB?	Quantitative study	Identity Theory	International Conference on Green HRM and Sustainable Behavior 2022

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Chapter 2 – Paper 1

Paper 1

Knotted and nested paradoxes in corporate greening: How organizations and organizational members (do not) work through organizational sustainability tensions

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Knotted and nested paradoxes in corporate greening: How organizations and organizational members (do not) work through organizational sustainability tensions

Abstract

Companies implementing corporate greening activities (un-)consciously work through a variety of paradoxical tensions. Commonly, these tensions are found to arise between economic, ecological, and/or social goals, as well as between short-term and long-term orientation. Since this observation is often only theoretical in nature and at different levels of analysis, little is known about how the implementation and execution of corporate greening activities leads to the salience of organizational sustainability tensions and their entanglement with other paradoxical tensions in organizations. Through a comparative case study, I investigate this entanglement of paradoxical sustainability tensions and the responses to these by different organizational members. My model shows that corporate greening activities can unsettle the existing sustainability equilibrium in organizations. Leveraging recent paradox literature, I discuss positive and negative outcomes in these companies from engaging in corporate greening activities.

Keywords

Corporate greening; employee green behavior; paradox theory; organizational sustainability tensions

Introduction

More than ever, business organizations are being asked to respond to increasing demands to establish sustainable business practices to reduce their harmful impacts on the environment and society. Since organizations are full of paradoxical tensions (Lewis & Smith, 2014), it can be stated that during the process of corporate greening companies need to work through various paradoxical tensions (Lüscher & Lewis, 2008) engrained in the triple bottom line of ecological, social, and economic goals (Hahn et al., 2015). Organizational sustainability paradoxes manifest between social and profit demands (Smith et al., 2012), short-term focus and long-term strategies (Slawinski & Bansal, 2015), as well as between the self and the organization (Soderstrom & Heinze, 2021). Paradoxes are contradictory yet interrelated elements that persist over time and cannot be resolved (Smith & Lewis, 2011). Paradox theory distinguishes between four different types of paradoxical tensions: paradoxes of belonging, learning, organizing, and performing (Smith & Lewis, 2011). Paradoxes of belonging describe the tensions that arise between the individual and the collective at the meso level (Kreiner et al., 2006a, 2006b) and highlight "conflicting identities, roles, and values" (Smith & Lewis, 2011, p. 388). Paradoxes of learning appear at multiple levels when organizational changes occur between "today and tomorrow or between looking forward and looking backward" (Smith & Lewis, 2011, p. 388). Paradoxes of organizing at the macro level can be described as "loosely coupled versus tightly coupled, centralized versus decentralized, and flexible versus controlling" (Smith & Lewis, 2011, p.388) and surface around competing designs and processes (Smith & Lewis, 2011). The

performing paradoxes at the micro level become salient when there is a plurality of stakeholders with competing goals (Jarzabkowski et al., 2013; Smith & Lewis, 2011). Paradoxes can thus be associated with different levels of analysis (Jarzabkowski et al., 2013). If these paradoxes are not attended to, paradoxical tensions can lead to vicious cycles, paralysis, and inertia (Pradies et al., 2021; Smith & Lewis, 2011; Sundaramurthy & Lewis, 2003).

Organizational paradoxes are part of the overall complexity of structures and systems (Schad & Bansal, 2018) and span various levels of analysis (Panayiotou et al., 2019). Paradox research has recently highlighted that paradoxical tensions appear in various forms: they can be nested, i.e., they manifest at different levels of analysis (Andriopoulos & Lewis, 2009; Jarzabkowski et al., 2013), and knotted, i.e., entangled tensions that can attenuate but also amplify each other (Sheep et al., 2017), making it complex for organizations to navigate them. While knotted paradoxes appear simultaneously and can create a strengthening effect so that they cannot be separated easily (Sheep et al., 2017), nested paradoxes are embedded in organizations and can easily "spill over" from one level to another (Jarzabkowski et al., 2013, p. 246).

Mainstream sustainability researchers mostly assume that the business case, i.e., economic dominance, eliminates such paradoxical sustainability tensions (Banerjee, 2008) or that these tensions are treated like trade-offs in which one demand is sacrificed for another (Hahn et al., 2010). As a consequence, ecological or social demands are implemented only if they can be aligned with financial goals, and at the expense of better ecological or social solutions (Hahn et al., 2014).

Trying to achieve ecological goals, as in the case of corporate greening activities, tilts this sustainability equilibrium to the disadvantage of the economic dominance, even if only temporarily. In turn, unusual responses, i.e., stressing the "weaker" pole, to opposing sustainability demands would cause an imbalance to the equilibrium that would keep the paradoxical sustainability tensions in place (Jarzabkowski et al., 2021; Sheep et al., 2017).

Paradox researchers have studied a variety of paradoxical sustainability tensions at the individual (Carollo & Guerci, 2018; Ghadiri et al., 2015) and organizational level (Jay, 2013; Slawinski & Bansal, 2015). However, some important research gaps remain. First, empirical research on intra-organizational paradoxical sustainability tensions and paradoxes (Hahn et al., 2018) as well as on paradoxical tensions' nestedness is scarce (Jarzabkowski et al., 2013; Keller et al., 2020; Lüscher & Lewis, 2008). Although organizational sustainability paradoxes have been studied widely (Hahn et al., 2018; Slawinski & Bansal, 2015), the empirical study of paradoxical sustainability tensions within organizations has been neglected beyond a few studies on the identity work of sustainability managers (Carollo & Guerci, 2018; Ghadiri et al., 2015; Wright et al., 2012). Studies have addressed the paradoxical tensions perceived by managers and other organizational members in isolation (Carollo & Guerci, 2018; Denison et al., 1995), but have neglected the complexity of the simultaneous perception of paradoxical tensions by different organizational members. While responses to paradoxical studies of managers have been sought in research on organizational paradoxes (Jarzabkowski & Lê, 2017; Lüscher & Lewis, 2008), not much is yet known about how employees

in other functions respond to tensions. Rather than studying how responses to paradoxical tensions affect each other, studies have focused on either the individual or organizational level, thus neglecting the entanglement of paradoxical tensions at different organizational levels (Jarzabkowski et al., 2013). Second, in terms of "disorder and dynamic disequilibrium," a state where paradoxical tensions are imbalanced, research is still in its infancy (Jarzabkowski et al., 2021; Schad et al., 2016; Sheep et al., 2017). Previous research so far has only suggested that disequilibrium unfolds whenever there is a critical incident (Jarzabkowski et al., 2021), causing disorder (Sheep et al., 2017), and is responded to by the re-knotting of paradoxical tensions, which re-creates balance (Jarzabkowski et al., 2021).

To address these gaps, I analyzed corporate greening activities in multiple organizations through a paradox lens investigating the following two research questions:

1) What organizational paradoxical tensions do organizational members experience in their efforts to engage in corporate greening activities?
2) How do members at different organizational levels respond to paradoxical tensions in the course of implementing and conducting corporate greening activities?

This research aims at surfacing paradoxical sustainability tensions perceived by organizational members of different occupations and organizational levels. Using insights from paradox theory, I explore the nestedness (Jarzabkowski et al., 2013) and knottedness (Sheep et al., 2017) of organizational sustainability tensions to create a better

understanding of the existing complexity of paradoxical tensions in regard to corporate greening activities.

The results culminate in a model of the knotted and nested paradoxical tensions within a changing sustainability equilibrium: starting from the latency of organizational sustainability tensions, its imbalance leads to the salience of paradoxical tensions and their knotting with other paradoxical tensions of performing, organizing, and belonging. This is found to trigger responses to the perceived paradoxical tensions that, depending on the individual's role, culminate in pushing the paradoxical tensions downwards, upwards, or horizontally. The corrections and adjustments that follow these paradoxical tensions are found to create a new sustainability equilibrium.

Theoretical framework

Sustainability equilibrium and paradox theory

The sustainability equilibrium is created through the simultaneous attendance to economic, social, and environmental goals (Froese, 2017; Lozano, 2015). A dynamic equilibrium keeps paradoxical tensions in balance (Smith & Lewis, 2011). For this study, I use the following definition from Jarzabkowski et al. (2021, p. 3): "Dynamic equilibrium is a mutually reinforcing balance among the multiple paradoxes of an [intra]organizational system." In a static equilibrium, all contained elements are found to be at rest; yet, in paradox research it is assumed that occasional incidents lead to the imbalance of the equilibrium, which calls for the system to "regain" equilibrium (Smith & Lewis, 2011, p. 386). This is an ongoing dynamic that moves between

paradoxical tensions and responses to these paradoxical tensions (Pradies et al., 2021; Smith & Lewis, 2011).

The success of an organization depends on addressing these paradoxical tensions (Keller et al., 2020; Smith & Lewis, 2011). While the paradoxical tensions are found to reflect underlying system dynamics (Schad & Bansal, 2018), paradox theory proposes that in order to achieve long-term sustainability outcomes efforts must be in place to meet opposing and conflicting goals continuously and achieve a state of equilibrium embracing the various paradoxical tensions (Smith & Lewis, 2011). However, I claim that the establishment and implementation of corporate greening activities in organizations are able to destabilize and shift the existing equilibrium, at least temporarily, which can create paradoxical tensions among the workforce at the different company levels. Additionally, in taking an intra-organizational perspective, it becomes necessary to also address paradox multiplicity, including performing and organizing tensions (Lüscher & Lewis, 2008).

Sustainability is full of paradoxical tensions (Hahn et al., 2010; Hahn et al., 2015; van der Byl & Slawinski, 2015). Smith and Lewis (2011, p. 388) stated: “In creating [sustainable] organizations, leaders must decide what [sustainable activities] they are going to do, how they are going to do [these sustainable activities], who is going to do [these sustainable activities], and in what time horizon.” Consequently, any kind of corporate greening activity can render paradoxes salient, i.e., cause paradoxical tensions in organizations, and/or help organizational members to recognize and better work through paradoxical sustainability tensions. In particular, change, plurality, and resource

scarcity can spark paradoxical tensions among organizational members when they are forced to choose between opposing goals (Smith & Lewis, 2011). For instance, organizational members who experience scarce resources (i.e., limited time, funding) have been found to perceive higher levels of paradoxical tensions (Miron-Spektor et al., 2018).

Previous research has indicated that instrumental (i.e., economic) compared to integrative (i.e., embracing ecological, social, and economic goals) views dominate in companies (Hahn et al., 2015). However, regardless of the individual dominance, in both instrumental and integrative organizations paradoxical sustainability tensions are perceived (Haffar & Searcy, 2019). Commonly, these tensions are found in hybrid organizations that follow a dual approach to meeting social and economic goals (Haigh & Hoffman, 2014; Jay, 2013). Similarly, individual organizational members, such as sustainability managers, struggle with paradoxical sustainability tensions (Carollo & Guerci, 2018).

Knotted and nested paradoxes

Organizations are built in a hierarchical style and are formed by subsystems, which can have their own culture, identity, and practices (Smith & Lewis, 2011). Accordingly, organizational paradoxes can be associated with different levels of analysis (Jarzabkowski et al., 2013), and they can appear in the form of knotted (Sheep et al., 2017) and nested paradoxes (Andriopoulos & Lewis, 2009). Knotted tensions can attenuate or amplify existing paradoxical tensions (Sheep et al., 2017).

Sheep et al. (2017) defined tensional "knots" as "discursive formulations in which members construct tensions, not only as co-occurring, but as Gordian (inseparable) entanglements of interdependence" (p. 463). Paradoxical tensions are described as nested when these tensions are entangled and affect different levels simultaneously (Andriopoulos & Lewis, 2009; Keller et al., 2020; Lüscher & Lewis, 2008; Putnam et al., 2016).

Projects conducted to achieve environmental goals can come close to projects that imply change, because previous routines, strategies, and decision-making are changed to reach new sustainability goals (Smith & Lewis, 2011). For example, corporate greening activities might affect the existing hierarchical order and line of decision-making and therefore spark tensions among organizational members. In studying an ongoing change process in the Danish Lego company, Lüscher and Lewis (2008) found that middle managers experienced paradoxical tensions because their roles in the company were undergoing a change when established ways of performing were rendered void.

Sustainability paradoxes in corporate greening

Sustainability paradoxes manifest at different levels: previous sustainability research has found that paradoxical tensions are part of practicing sustainability in organizations (Haffar & Searcy, 2019). Four major paradoxical sustainability tensions have been identified so far (Soderstrom & Heinze, 2021) reflecting a multilevel nature: economic versus ecological or social goals (Ehnert, 2009; Hahn et al., 2015), long-

term versus short-term orientation (Ehnert, 2009; Slawinski & Bansal, 2015), conflicting demands from multiple stakeholders, and the individual versus the organization (Soderstrom & Heinze, 2021). However, individual corporate greening activities not only create tensions by leaning towards one end of the spectrum or prioritizing economic goals under the guise of fulfilling the win-win paradigm (Hahn et al., 2010), but also entail practical challenges. Because of the ambiguity and complexity of corporate greening activities, paradoxical tensions might be knotted, nested, or even evolve under the radar and/or be unknown to organizational actors before they become salient in the course of implementing corporate greening activities. For example, employees might pull towards the ecological end, while management might pull towards the economic end of a particular corporate greening activity. Thereby, economic versus socio-ecological tensions become entangled with paradoxes of performing, and at the same time the paradoxical tensions are nested in different company levels. In sum, implementing corporate greening activities can render latent paradoxical tensions salient in organizations.

This study aims to extend previous findings on paradoxical sustainability tensions (Carollo & Guerci, 2018; Ghadiri et al., 2015; Hahn et al., 2015; Hahn et al., 2018). To increase our understanding of paradoxical sustainability tensions, there is a need to fill the gap between the intra-individual and organizational level paradoxical tensions while exploring their nested and knotted character. I also investigate the role of paradoxical sustainability tensions in destabilizing and recreating a new sustainability equilibrium.

Methods

This study was based on five medium-sized German companies awarded with regional and national awards for their engagement in sustainability and for their corporate greening activities. A multiple-case study approach was used to "enable a broader exploration of research questions" (Eisenhardt & Graebner, 2007, p. 27) to cover a range of different forms of corporate greening activities and to validate the theoretical findings across cases. The theoretical sampling technique (Eisenhardt, 1989, 2021) was used to select case study organizations that had implemented corporate greening activities. These companies were particularly interesting for the analysis because they used different approaches to achieve environmental sustainability goals. The companies were recruited in different ways: via an existing company network for sustainable management of one of the project partners, personal contacts, or internet research. This resulted in 14 potential companies. Of these 14 companies that were interviewed, five qualified for research in this paper and were selected since only these cases fulfilled the criteria of regular corporate greening activities. The selected cases were given the following pseudonyms to protect their identity: Firm A, Firm B, Firm C, Firm D, and Firm E (see Table 1).

Either environmental sustainability is part of their business model, such as in the cases of Firm A, Firm B, and Firm C, or they engage in extensive corporate greening change projects to lower their carbon footprint (Firm D) or even to reach CO_2 neutrality (Firm E). The cases were categorized as eco-centric or technocentric firms: eco-centric organizations show strong sustainability behaviors, i.e., beyond their

organization's sustainability they support a community-focused green economy, while technocentric organizations show only weak sustainability, which is described as being focused on technocentric solutions guided by economic principles (Landrum, 2017). Based on Landrum (2017), firms' business model, motivation, and activities directed at society were chosen to categorize them.

Table 1 Overview of case study companies

Company	Specialization	Organization	No. of Employees	Type of Greening Activities	Sustainability Awards	Level of Sustainability
Firm A	Banking services	Cooperative	500	Not specified	3: - National Sustainability Award - Sustainable Bank Award - Fair Company Award	Eco-centric
Firm B	Organic alcoholic and non-alcoholic beverages	Family business	140	Regular workshops (at least once per year)	4: - CSR Award of Government - EMAS Award - National CSR Award - National Environmental Award	Eco-centric
Firm C	Organic cosmetics and medication	Private company, owned by a foundation	1,000	Two major sustainability projects per year	2: - Regional Sustainability Award - Award for Green Office Activity	Eco-centric
Firm D	Garbage collection, street cleaning, and waste treatment	State-owned company	5,500	Ongoing CO_2/energy saving projects	3: - National Sustainability Award - National Inclusion Award - Regional Environmental Award	Technocentric
Firm E	Waste water treatment and sanitation	Private company, formerly state-owned	400	CO_2-neutrality project	3: - EMAS Award - Regional Award for Climate Protection - Biological Diversity Award	Technocentric

This resulted in Firms A, B, and C being categorized as eco-centric, while Firms D and E were categorized as techno-centric. As an example, Firm C, which produces organic cosmetics and medication, helps business and non-business partners, including a theater, to become more sustainable. On the other hand, although being highly motivated to become CO_2 neutral, Firm E prefers technical solutions that "pay off." Finally, Firms A, B, and C are private companies, with Firm B being a family-owned company, and Firms D and E are a public institution and a privatized formerly public institution, respectively.

Corporate greening activities in these firms vary. They include investment in activities targeting emission reduction and lowering environmental footprint through energy saving behaviors, sustainable purchasing, behavioral changes, technological investments to increase efficiency, investments in e-mobility, renewable energy (solar, wind, biofuels), activities to foster environmentally friendly commuting by bike or public transportation, and workshops on environmental topics, among others. The corporate greening activities can appear in the form of bigger change projects, such as in Firm D or Firm E, or in the form of smaller-scale activities that happen during the year as in Firm C, which implements two sustainability activities in the company per year. Overall, these companies allow a good examination of paradoxical tensions around the implementation of corporate greening activities and the way in which employees and organizations respond to these tensions.

Data collection

The data were collected as a part of a bigger research project running from 2013 to 2016 which was funded by the German Federal Ministry of Education and Research. The data collection was done by a team of two senior and two junior researchers (including the author of this paper), as well as by two more interviewers who were part of the larger project team. Before conducting the case studies, a conceptual framework was developed that helped to study corporate greening activities in different organizations and which allowed us to use the findings for cross-case analysis (Miles & Huberman, 1994).

To ensure comparability between the cases and to ensure that the interviews were conducted in a similar way, an interview guide was used. Themes covered during the interview included existing corporate greening activities in the organization, motivation for engaging in corporate greening activities in the organization, instruments in use for fostering corporate greening activities, and challenges around organizing and implementing corporate greening activities. The interviews were semi-structured and open ended to leave room for insights that otherwise could have been missed. Employees and also senior and department managers, including CEOs, HR managers, and environmental agents, as well as sustainability managers were interviewed, ranging from four to 10 interviews per organization. In order to cover different perspectives on the ongoing corporate greening activities in these organizations and to be able to triangulate the findings (Yin, 2014) we interviewed managers and employees from different departments and from different company levels, including line

managers, top managers, and CEOs. In interviewing an array of different persons, multiple voices allowed us to capture multiple tensions and to capture the sensemaking of organizational actors (Fairhurst et al., 2016). All of the interviews were conducted onsite. All interviews were recorded and transcribed verbatim. The interviews were conducted in German and analyzed before they were translated to English by me for the purpose of using them as citations in this paper. With credibility and authenticity (Johnson et al., 2006) in mind, the translation was done carefully, taking idioms, tone, and cultural background into consideration and a native speaker was consulted on the translation. In total, 32 interviews were analyzed for this study (see Table 2). The interview time lasted on average 54 minutes, whereas the shortest interview lasted 16 minutes and the longest 1 hour 40 minutes. In total, they amounted to almost 32 hours of recorded interview time and over 600 pages of transcript. In addition to the conducted interviews in one company (Firm C) a non-participant observation of a meeting of the company's green team took place. As additional sources of data, secondary data from sustainability reports, company websites, and other relevant publications were read and analyzed for the purpose of triangulation (Yin, 2014). For each case, an individual case report was written and sent to the companies for confirmation that the case descriptions were correct and complete.

Table 2 Case descriptions and interview participants

Case	Case Descriptions	Interview Participants
Firm A	Firm A is well known for its socio-ecological orientation and considers itself a sustainable bank. Firm A has been awarded prizes for their sustainability activities. The company has grown extensively in the last few years, especially during and after the financial crisis and many conventional bankers have started to work for the bank.	5: HR manager Employee, HR management Speaker, HR management Vice-deputy manager HR, previously head of control department Senior manager
Firm B	Over 40 years ago, the family-owned business was turned into a sustainable company and environmental protection was defined as a company goal. The first sustainability report was published in 1992. The growing company recently developed a new strategy for climate protection to create a new spirit for greening activities. It sources local organic ingredients for alcoholic and non-alcoholic beverages.	4: CEO Sustainability manager Head of works council Head of HR and administration
Firm C	The foundation-owned company produces organic cosmetic products and medication. The company's mission statement rests on sustainability. Both a strategic and an operational environmental circle of dedicated employees from almost all parts of the company are active in developing and implementing greening activities. The activities range from supporting suppliers to deliver organic raw material, to events dedicated to educating employees on environmental issues. At least two larger greening activities for all employees are conducted within the organization per year.	6: Environmental agents (×2) Employee, PR Head of production Employee, quality management Manager of laboratory Waste management agent + one non-participant observation of a meeting of the organization's environmental team

Firm D	The waste treatment company, a public institution, which signed a climate protection agreement with the federal state, engages in regular energy-/CO_2-saving activities. For the current project, several groups from different branches formed and handed in ideas for energy saving, and environmental and climate protection. An award is given to the group for highest amount of energy saved. The most creative idea is rewarded, too. An event is held to celebrate the winners. This greening project is one among several other similar projects.	7: Employee, depot Employee, administration and womens' representation Head of depot Employee, administration and member of works council Employee, recycling Speaker, environmental management Head of unit, environment/energy/innovation
Firm E	The privatized water treatment company conducts a big greening project to reach CO_2 neutrality. Therefore, different teams were formed to develop greening activities to reduce the company's CO_2 footprint. Taking part in this project was voluntary, although some participants were assigned to take part in the project. In the course of this greening project, among many other greening activities, e-cars and e-bikes were purchased, bulbs were replaced with LEDs, a monthly meat-free day in the canteen was established. After the project's end, the greening activities are planned to be moved to the individual departments and promising ideas for greening activities will be continuously checked and kept as an option for later implementation..	10: Managing director and project manager Employee, purchasing and logistics Electrician Speaker for the management Industrial clerk Head of facilities management and mobility Employee, controlling Employee, water treatment Employee, building management HR manager
		Total number of interviews: 32

Data analysis

The data were analyzed using the software MAXQDA Analytics Pro 18. In the fashion of the constant comparative method (Corbin & Strauss, 2008; Glaser, 1965), I read through all interview transcripts, identified relevant text, and compared different incidents pointing at paradoxical tensions first within the individual cases and then across cases to form broader categories. The data analysis followed four stages:

Stage 1. Identifying initial, broad categories within each case. I began by coding text segments to form individual categories. This was done based on the assumption that paradoxical tensions are latent in organizations, but are rendered salient by environmental factors (plurality, change, scarcity) or actors' paradoxical cognition (Smith & Lewis, 2011). Therefore, emotions, language, and expressions were used as indicators to identify paradoxical tensions. Based on previous empirical works on paradoxical tensions, I looked for language clues (e.g., language of opposites, language of contradiction such as "yet," "but," "tension," "on the one hand…on the other hand") and displays of emotion (e.g., laughing, sighing) as indicators for paradoxical tensions, as well as contradictory statements (Andriopoulos & Lewis, 2009; Jarzabkowski et al., 2013; Jarzabkowski & Lê, 2017; Smith, 2014). For instance, interviewees used terms such as "tension," "discussion," or "complaints" to describe their experience with corporate greening activities. The resulting first-order codes were close to the informant terms within cases (Gioia et al., 2013). The codes contained various sequences in which interviewees reported tensions

arising from corporate greening activities, contradictory messages, and conflicts.

Stage 2. Integration of first-order codes to create second-order theoretical themes within cases. In a second step, I started to integrate the found incidents and started building second-order theoretical themes (see Appendix A1) by assigning the found tensions to the different types of paradoxes taken from the literature (Hahn et al., 2015; Lüscher & Lewis, 2008; Smith & Lewis, 2011) and categorized them into paradoxes of sustainability, learning, performing, belonging, and organizing, as well as a category for knotted (Sheep et al., 2017) if it was clear when different organizational tensions appeared simultaneously and/or were knotted with sustainability tensions. Finally, I also used a category for nested paradoxes (Jarzabkowski et al., 2013) if it was apparent that paradoxical tensions not only occurred at different levels (such as paradoxes of organizing), but were clearly entangled with other paradoxical tensions across different levels, e.g., organizing tensions (meso) with performing tensions (micro). A picture started to emerge that corporate greening activities can cause uproar among the staff, emotional responses, and conflicts.

Stage 3. Cross-case comparisons. In stage 3, I looked for similarities across the cases by applying cross-case analysis techniques (Eisenhardt, 1989; Miles & Huberman, 1994). Across all cases, paradoxes of learning did not play a major role; this category was thus removed from further analysis. During the cross-case analysis, I started to move back and forth between relevant literature and the data to deepen the

interpretation of the identified data sequences across the cases. During this process, new codes were added or existing codes refined. In addition, aggregate dimensions that built on the identified themes were formulated (Gioia et al., 2013). The first-order codes and the second-order themes and the aggregate dimensions are presented in a data structure (Cloutier & Ravasi, 2021).

Stage 4. Building a theoretical framework. In the final stage, I drew on existing studies on nested and knotted paradoxes to refine my findings. To form a reliable theoretical model, I relied only on the most robust findings.

Findings

Through my case study research, I observed that corporate greening activities rendered sustainability paradoxes for organizational members salient. Alongside the experience of paradoxical sustainability tensions between ecological and economic goals, the interviewees also perceived organizational tensions. Engaging in corporate greening activities rendered tensions of organizing and performing salient because of scarce resources. Additionally, for some interviewees, belonging tensions manifested due to corporate greening activities if the individual identity and work role were affected. Figure 1 depicts the underlying data structure.

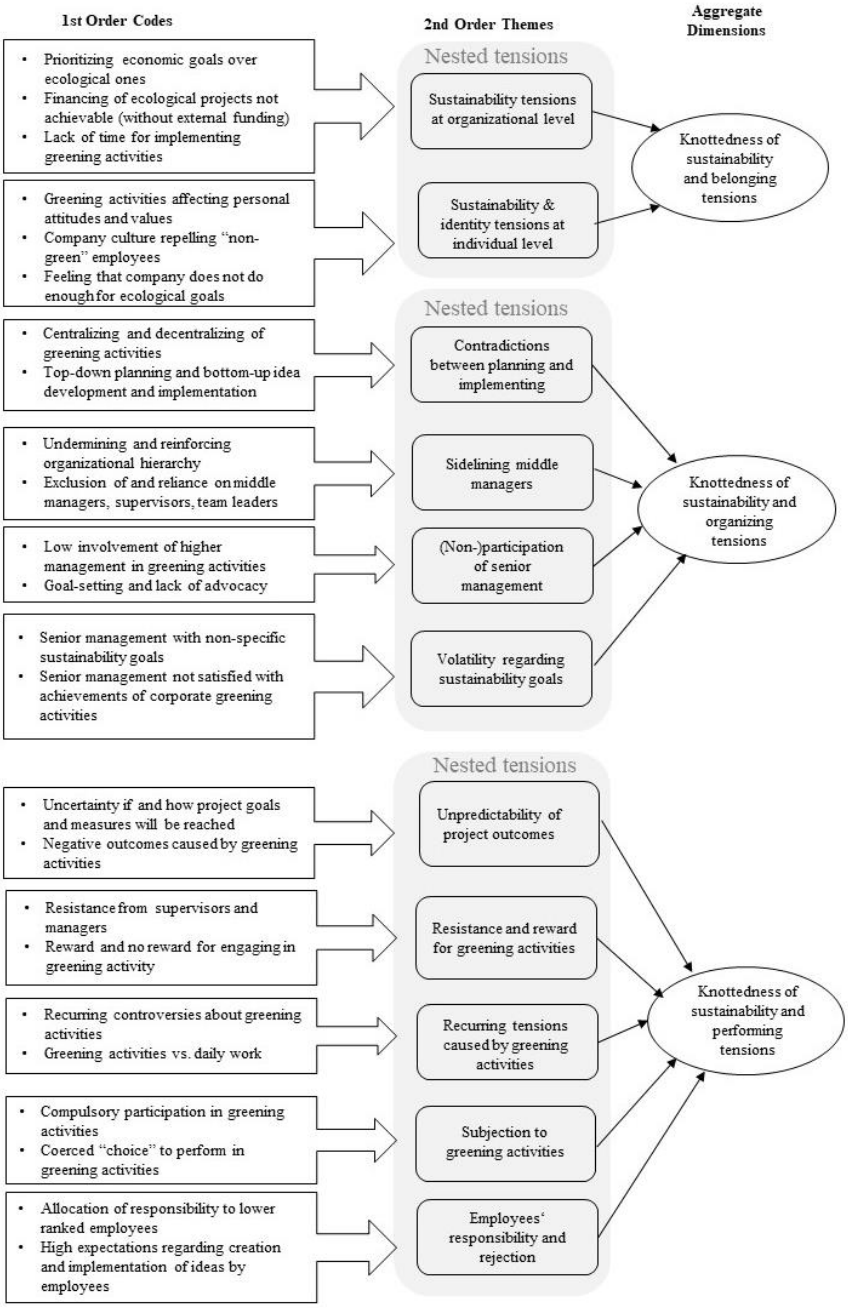
Across the different case organizations, it became evident that corporate greening activities formed tensional knots. In particular, corporate greening activities that were tied to an enforced or expected behavioral change from employees (e.g., a meat-free day in the canteen) led to a

tensional knot between the sustainable action and a paradoxical tension of performing. In the cases of Firms C, D, and E, in particular, corporate greening activities repeatedly rendered paradoxical tensions salient and caused conflicts among the staff. In the case of Firm A, a bank known for its sustainability activities, paradoxical tensions arose between old and new staff, as the old staff wanted to keep their orientation towards sustainability and the newer staff opted for more "bank" business.

Before the initialization of corporate greening activities there is often no awareness of paradoxical sustainability tensions. As Smith and Lewis (2011, p. 390) noted, they lie "dormant, unperceived, or ignored," till they are rendered salient. Based on the interviewees' insights, many paradoxical tensions were only perceived after the corporate greening activity had started. The data show that there was no consistency in what could cause paradoxical tensions in organizational members, and which ultimately resulted in conflicts:

> *And sometimes you don't expect there will be a fuss about something…and then there's always this…there comes the point where people are bothered by it. (FIRM E, HR manager)*

Figure 1 Data structure



Knottedness of sustainability tensions and belonging tensions

Sustainability tensions at the organizational level. Sustainability paradoxes appeared at both the organizational and individual level. At the organizational level, as previously indicated by research on paradoxical sustainability tensions (Hahn et al., 2015; Slawinski & Bansal, 2015), the tensions appeared between economic and ecological goals, and the long-termism of ecological goals and the short-termism of the financing of greening projects because of the companies' low amortization time frames. Constraints further existed in the financing of ecological goals and firms described a lack of time to implement greening activities. However, the conflicting goals were kept in balance as the following quote illustrates:

> *Environmental goals [are] a principle of this company, it's part of the corporate philosophy. It's not an after-product or a by-product, it's just really part of it. Of course, you shouldn't see it in a too rosy light. Decisions are often made here that simply have an economic background. (FIRM C, Manager of laboratory)*

In a similar way, a manager described Firm A's attitude towards sustainability, which included economic goals, while tensions were set aside:

> *For us, social is the first component of the triangle, i.e., social, ecological, and economic, which is the sequence for us. […] We always want to say that we only match the money with meaningful things. I'm also happy to repeat that again, we are a company. With everything that goes with it. And [Firm A] must also have the right to make profits. (FIRM A, Vice-deputy manager HR)*

Unsurprisingly, some corporate greening activities only started after it was clear that they were financed or the activities would pay off for the company, which is a common trade-off strategy (Hahn et al., 2010) to avoid paradoxical sustainability tensions:

> *In other words, to reconcile economic objectives with, let's say, environmental protection. That was actually the main motive, we saw the opportunity reconcile these two, and of course the idea of doing something for the [COMPANY] brand was also a motive … for the reputation and such like. (FIRM E, Managing director)*

> *At the moment, the [greening] project has to be applied for, [external] funding has to flow first, and then it can be implemented. (FIRM B, Head of HR and administration)*

Sustainability tensions at the individual level. In contrast to the organizational sustainability tensions, the perception of paradoxical tensions at the individual level can take a different form depending on the preceding organizational decision. Paradoxical tensions are rendered salient by environmental factors, such as plurality, change, scarcity, or an actor's paradoxical cognition (Smith & Lewis, 2011). For example, tensions of belonging arise from conflicting values, roles, and identity (Ghadiri et al., 2015; Smith & Lewis, 2011). One of the interviewees depicted such tensions between employees who were and were not interested in sustainability issues:

> *It was the long-term employees of the company who have tried to hold up the flag. Which is not bad at all, that you don't lose*

> *everything from your consciousness [regarding its social and ecological orientation] because of all the banking business. But there was still a small area of tension over the years. Where a lot of new people came who actually just wanted, I say, "bank" and maybe just wanted a job. And those who wanted to keep up the tradition, so to speak. And that wasn't that easy in parts either, not quite free of tension either. (FIRM A, Vice-deputy manager HR)*

This first section has described the findings from the first part of Figure 1, the experience of sustainability tensions and their nestedness at the organizational and individual levels. The next two sections, are dedicated to analyzing the knottedness and nestedness of sustainability paradoxes and organizational paradoxes of organizing and of performing. I did not find linkages between sustainability paradoxes and organizational paradoxes of learning and therefore did not analyze them.

Knottedness of paradoxical sustainability and organizing tensions

Contradictions between planning and implementing. In three of the five cases, greening activities were initialized and planned in a top-down manner. I observed that top and upper management installed a greening project in the fashion of a temporary decentralization (Siggelkow & Levinthal, 2003), allocating the responsibility for greening activities to several project teams, selected project managers, and employees as project members. Either existing environmental

teams (in Firm C) were responsible, or ad-hoc project groups were formed (in Firms B, D, and E) to roll out greening activities in the companies. Usually, project members were recruited from all departments and subsidiaries, yet the size of the respective teams varied, ranging from below 10 (Firm C) to over 30 (Firm D), and to 40 members (Firm E). Despite this relatively low number of employees involved, these teams were responsible for the development and implementation of greening ideas in the respective companies. The main goal of the corporate greening activities was to reach every employee and thus spread knowledge on environmental issues and as a result foster sustainable behavior. Based on my findings, I saw contradictions between planning and implementing of the greening activities. For instance, although employees were not entitled to more freedom in making decisions, they were the ones top management expected to come up with ideas for corporate greening; middle managers, team leaders, and supervisors were often sidelined and the existing organizational hierarchy altered. For example, in Firms D and E, dedicated employees became project managers and employees were recruited to form a project team. Employees were given a time quota of 4 hours per month for the greening activity. Consequently, tensions arose between operational (i.e., daily work) and strategic sustainability goals that were mostly triggered by a lack of time to engage in these activities. As one interviewee remarked that management expected results, yet did not divide the work evenly among the workforce:

> *Of course, the pressure from the board of management is there. So, right at the moment, this backbone that we have helps. But it could be broken down more. I don't think it's the colleague who*

> *should be given more time, but rather the managers. (FIRM D, Employee, administration and member of the works council)*

Allocating the responsibility to project managers and employees subsequently led to conflicts between the sidelined team leaders and supervisors and the project members of the corporate greening activities. One interviewee highlighted that some supervisors outright refused to allow any employee to take part in the corporate greening activity. In other cases, supervisors struggled with their role and duty of supervising work and their subordinates' participation in the corporate greening activity. One HR manager noted:

> *There were quite a few discussions between the subproject leaders [of the greening activity) and the team leaders. And it was more like that: the work piles up and they [employees] take part in the [corporate greening project] as if it was a hobby. (Firm E, HR manager)*

Sidelining middle managers. Tensions of performing arise because of competing demands of different roles (Bednarek et al., 2017). Taken in this case, employees engaged in the greening activity were part of the project team and yet had to perform their usual work role. However, although in theory the organizations granted a time quota to work on the project during working hours, in practice it caused conflicts with colleagues and supervisors as well as between supervisors and the managers of the greening project:

> *Of course, there were supervisors, because for them it was just as unusual, not only for the employees, who, I don't know, said something like, "No, you can't go to the project meeting [of the corporate greening project] now. Here, this and that has to be done here. Operational work comes first," and such discussions. (FIRM E, Managing director)*

One interviewee remembered being confronted by colleagues and his boss:

> *People have asked me now and then: "What are you doing there anyway?" And rather [laughs] this … Or my boss then also [asked], for example, "What are you doing now again on the [greening] topic?!" (Firm E, Industrial clerk)*

(Non-)participation of (senior) management. Instead of actively working through the paradoxical tensions that were rendered salient by the implementation of the corporate greening activity, the tensions were passed on to other organizational members down the organizational hierarchy. According to one informant, higher management failed to position itself for environmental goals—thus avoiding addressing existing paradoxical sustainability tensions—which resulted in difficulties when environmental goals should have been implemented:

> *Because they [higher management] already anticipate the headwind and duck a little in advance and then don't stand forward and say, "Well, that's what we want now, too. And these are the people who are responsible for the greening*

activities […]. But some managers are also the ones who initiate the ideas […]. They do it, but not with full force. And from my point of view, that's what I've noticed is always the greatest risk. If you already create opportunities for doubt, or if you already embody them yourself, so to speak, there's a pretty good chance that there will be some kinds of difficulties. (FIRM E, HR manager)

Volatility regarding sustainability goals. In Firm B, at first all employees were involved. The project was designed in a way that the employees worked on a chosen sustainability topic in a one-day workshop, which was designed as a compulsory event and took place during working hours. Although the workshop was not directed at the achievement of specific goals, employees were expected to keep working on whatever they had worked on during the workshop. Although a lot of time was invested in the workshops, the expected outcome was low and perceived as a disappointment:

As a company manager you always have very high expectations. In my perception, almost nothing was actually implemented [after a one-day workshop for a greening activity]. And then we said, well, maybe it simply overwhelms the employees when we sit there with them in workshops and they work it out for themselves. And do they then get the feeling [sighs] that we got the work done? Then there is not enough energy left for the implementation. (FIRM B, CEO)

When analyzing the knottedness of sustainability and organizing tensions, tensions appeared in four different forms: contradictions around the organization of greening activities, the sidelining of middle managers, the (non-)participation of senior management in the greening activities, and the volatility regarding sustainability goals (see Figure 1).

Now I move on to describe the third and last aggregate dimension.

Knottedness of sustainability and performing tensions

Unpredictability of project outcomes. Performing tensions arise from conflicting demands regarding one's differing roles in the achievement of opposing goals, such as between social and financial goals (Lüscher & Lewis, 2008; Smith & Lewis, 2011). To achieve set environmental goals, specific targets were set in the firms (e.g., CO_2 neutrality), yet the nature of greening activities is one of unpredictability and this creates volatility because of the non-specificity of goal implementation and achievement (e.g., energy saving, reduction of CO_2). As one informant pointed out:

> *It all began in a very unstructured way. There was kind of an idea and that was because, I think, no one really knew what it was leading up to. The goal was to become climate neutral, but how to do that, that was completely unclear. (FIRM E, Employee, purchasing and logistics)*

In addition, paradoxical sustainability tensions between ecological and economic goals emerged in discussions. Managers were confronted

with the fact that their performance would be measured by the achievement of ecological goals in their business organization that were not planned for or foreseeable:

> *And then they [managers] have all asked, "How do we get there? And can anyone calculate that for me?" And no, we can't. We have to work on getting there. That was a very unusual process. Because you don't know it like that, usually there are actually crystal-clear measures behind it, where everyone has the feeling, yes, that's how we're going to get there. (FIRM E, Managing director)*

Resistance and reward for greening activities. In response to existing paradoxical tensions, organizational members (un-)consciously pushed them away. In the data there were several incidences that described such actions. Since these actions were directed downwards, they were directed at employees and lower ranked managers. In Firm E, the goal to reduce CO_2 emission was tied to the existing bonus scheme. As such, it meant emission reduction would be remunerated. In light of ecological goals, this is a contribution to corporate greening; however, it did not account for the fact that the CO_2 emission reduction mostly could not be actively influenced by the organizational member (thus it was knotted to the performing tension). As a result, this tension could be easily worked through by the management board, while the employees' bonus payments decreased:

> *If, if, if, if, if, there are a number of factors over which the project team has no influence. That's just part of the operational*

business. Nevertheless, I can see that I'm getting further and further down [with the CO_2 emissions] every year and yes, that's completely okay for me as a project manager or also as a CEO that I've taken the right direction. Whether the outcome then exactly meets the target or is perhaps 5 percent or 10 percent above it, was not really that decisive for me. But the project team always had to deal with it, or the company. (Firm E, Managing director)

Two or 3 years before, they were grumbling about the cold winter and complaining. (Firm E, Managing director)

[They need] to take this consciously a bit, to take it sportingly and to say, you can definitely deal with it if you know that the process on which we are moving is the right one, if you have the feeling, so. Yes, that's actually how it is, [there] has always been an intense discussion around this topic of achieving goals. (Firm E, Managing director)

Recurring paradoxical tensions caused by greening activities. Repeatedly, environmental activities led to situations where paradoxical tensions among employees became salient. The activities that caused recurring paradoxical tensions of belonging and performing ranged from the removal of water boilers to the establishment of a meat-free day. In light of the corporate greening activity, it was expected that employees would change their respective behaviors, and this resulted in discussions and conflicts. The interviewees remarked the following:

[We] simply pulled out the plugs of the water boilers and put kettles in and no one knew. So, nothing was communicated…that was a bad action, I must say. (FIRM E, Employee, purchasing and logistics)

That was an intervention that didn't go well, to put it mildly. It was discovered that these water boilers under the sinks are not energy-efficient. And just for the tea making they said, "Okay, they will be taken out of operation, and instead they will put kettles there." So, this replacement took place, but it was not communicated beforehand. And then, of course, everyone asked themselves, "What's this all about, why don't I have hot water anymore? Why isn't it working, what's the point of the kettle?" (FIRM E, Employee, building management)

In Firm C, for some employees almost every greening activity was perceived as an unjustified intervention and caused rejection and disapproval:

When I think back to the day of the parking lot, how many years ago was that? So, there are again and again people who express themselves strongly and critically. On one hand that's okay, some maybe don't hit the right note, but in terms of the matter it can be justified actually. (Firm C, Environmental agent 2)

Subjection to greening activities. During the implementation of greening activities, competing views on individual actions among organizational members appeared. One such example of a greening

activity that sparked a heated debate among organizational members was the idea of establishing a meat-free day in the canteen:

> *What has been much discussed was that campaign with the meat. And that was also discussed a lot in our [environmental] group. And in the end, we said that we don't want to tell people here that they don't eat meat on Mondays. But on the other hand, it was also important for the management to say that the people must have the information in order to be able to decide. (FIRM C, Environmental agent 1)*

Greening activities in Firm C were supported by some employees, but rejected by other employees. However, in cases where there was no "opt out" possible, negative feedback was stark, as the following quote illustrates:

> *And then there are also always such topics, so we just once had the idea, that was also an environmental idea, that you ultimately close the parking lot, a few parking spaces for the people who come by bike. That way it becomes visible how many parking spaces are saved. And we had made a parking lot celebration out of it and had just asked to come in car pools. But [that] was no obligation. But I'll say, half of the colleagues thought it was good. And the other half really got it the wrong way. It wasn't at all meant that you don't come by car, it was actually about the awareness that you say, why don't you try it? Why don't you come as a car pool? (Firm C, Environmental agent 1)*

Employees' responsibility and rejection. Employees felt entangled in contradictory demands between their daily work and their engagement in the corporate greening activity. For example, they demanded more support from their individual supervisors for their task of implementing a certain greening measure, yet, at the same time felt that individual support by managers or supervisors was refused because of the different prioritizations between work goals and greening goals. In Firm E, the affected "climateers" thus refused to accept further tasks without the support from management:

> *The climateers were told [by the management] that now the climate protection culture still had to be established. And … many climateers said, "This goes a bit too far. Now the management must also get more active." And that's what happened afterwards, and … these climate culture working groups were all staffed with a member of the management team, also by a subproject manager plus others from the respective climate teams. (FIRM E, HR manager)*

The different reactions of organizational members to the exposure to greening activities indicates that paradoxical tensions are perceived differently at different levels (Jarzabkowski et al., 2013). However, according to my findings, paradoxical tensions can be further consciously or unconsciously passed on like a hot potato to lower levels of the organizational hierarchy. I call this "pushing tensions downwards," which I aim to illustrate in the following.

(Not) working through paradoxical tensions

Pushing tensions downwards. Passing paradoxical tensions on to others and pushing them further down the hierarchy happened in almost all the cases and usually started from a decision set by higher management to, e.g., achieve CO_2 neutrality (Firm E), save energy based on a contract with the federal state (Firm D), or educate people regarding sustainability (Firm B). That way, organizational sustainability tensions are woven into the fabric of the respective organization, but are not yet visible to all organizational members. However, in situations of change and scarcity these paradoxical tensions are rendered salient (Smith & Lewis, 2011). For instance, resource constraints (e.g., lack of time) can be an example of the scarcity of resources. Owing to a lack of time and resources, tensions of organizing and performing become salient for, e.g., project managers of greening activities, i.e., conflicting demands arise between the voluntary and required managing roles in the greening activity as well as from the competing views on who is responsible for achieving the greening goals. After struggling with the organization of the greening activity one interviewee decided to withdraw from the project. He declared that senior management had provided no additional resources for the greening project and almost none of the set project goals were achieved, thus organizing and performing tensions were knotted together:

> *I co-initiated [the greening project], but I'm withdrawing now because I would actually also like them [the colleagues] to [sighs], yes, act more on their own initiative, too.*

Researcher: *Can they do that?*

No, in the end [another colleague] will take over my role. [laughs] Relatively little has been achieved so far. … It's structured in such a way that they [members of greening project] all do it during their normal working hours … or in their free time. From the very beginning it was designed for us in such a way in the company that there was no time quota and no extra jobs were procured. Everything was based, so to speak, on conviction or voluntariness or gentle pressure from above. (Firm D, Head of department, environment/energy/innovation)

As a consequence of his withdrawal, he shifted the responsibility for the project and thus the tensions to his colleague and to the participants of the greening project. The colleague remarked during the interview:

The participants of the greening project have so much to do and get [no support] from the management, they should have simply been taken by the hand and it should have been said, "So, these are your possibilities, we can do that now." And then I think they would have had a lot more courage right away or motivation. (FIRM D, Speaker, environmental management)

Pushing paradoxical tensions upwards. Upon perceiving paradoxical tensions, some organizational members as receivers of environmental interventions pushed tensions upwards and/or horizontally towards the people they perceived to be responsible for causing the tensions. What

I termed pushing tensions upwards describes the response to tensions caused by the subjection to corporate greening activities.

Tensions can also be pushed in the opposite direction towards project organizers or the firms. For example, in Firm C, the knotted tensions between sustainability and performing arose around the food served during one sustainability event. For weeks afterwards the environmental agents needed to defend the choice of fish in the canteen and answer questions about it.

> *Some of the discussions are very exciting. For example, last year at the regional Sustainability Days, we also held a small event here. And we did that action at the lunch table, with discussions at the table. And then there was a menu—fish—a salmon for lunch. And we discussed this salmon for weeks afterwards. Was it now organic, was the salmon now sustainably fished and so on. At some point I could—I can't tell you now any longer—I could tell you exactly the salmon subspecies that we had there on the table. And from which region in the Atlantic it was fished. And how it was fished. Because there were such questions and such discussions. So, I think that's already a high level, it shows that we have a really high awareness. And also a really high standard. (Firm C, Environmental agent 2)*

Feedback on the food included criticism and, in part, even hostility:

> *Of course, there was also direct criticism: how can there be salmon at all? So, in general it was questioned, why salmon at all? Why no native trout or carp? Naturally, that's how far it went. But it was also relatively hostile in part, of course, so there*

are also always those…, but that actually always happens. (Firm C, Environmental agent 2)

Pushing paradoxical tensions horizontally. It was shown that paradoxical tensions were also pushed horizontally to peers and colleagues. The environmental manager, as the official organizer of a corporate greening activity which sparked various discussions, received major complaints. As a response to the perceived tensions, she remembers:

This was actually not our idea at all. We just implemented it and at that time it was just a pity. (Firm C, Environmental agent 1)

Sometimes participants of these corporate greening activities were also rejected by colleagues, as the following quotes illustrate:

- Our climateer was told, "You can clear off now, I'm not interested in what you say." (FIRM D, Head of depot)

- At the beginning, people derided us, us climateers … Not all of them, but most of them. (FIRM E, Employee, purchasing and logistics)

- In areas where the atmosphere is generally not good, the climateers also have a difficult time. In areas where things are going well, where managers and employees are pulling in the same direction, where there are successes and where people … simply work well together, things work better. (FIRM D, Head of department environment/energy/innovation)

The pushing of tensions in different directions was in all five case companies followed by corrections and adjustments to corporate greening activities. Some examples are provided in the following section.

Corrections and adjustments of greening activities. Paradoxical tensions between ecological goals (in this example, the installation of photovoltaic (PV) panels on company roofs) and economic goals (reduction in the company's expected yield) were overcome by embracing tensions to form a new equilibrium between the two opposing poles (Smith & Lewis, 2011). The following quotes also illustrate the nestedness of paradoxical tensions between the employees' ecological demands and the managers' economic focus, and between members of the board as the initiators of the greening project to achieve CO_2 neutrality for the company and the organization's controllers in their role of focusing on the balance sheets. However, this example also illustrates how working through paradoxical tensions can create opportunities for new solutions:

> *We came to an agreement. It was still a little below, if you looked closely, a little below the targeted profitability, yield, but then we agreed, okay, that was a kind of struggle with each other, and then we agreed, okay, for all pumping stations that we have to renovate, we will install photovoltaic roofs. And so, it was a very exciting process, because the company, this process took at least 1, 1 1/2 years, struggled with it, yes, employees with managers and across the board with the controllers and how to manage it, like this. So, and then I found a good compromise. But this was an example because it's not so black and white, but at some point,*

we found a way. But it was also possible, because the people who came up with the idea remained stubborn. They were not deterred by the fact that the first time you said it was uneconomical, yes, like that. So, yes, in this respect a very exciting process. (FIRM E, Managing director and project manager)

The compulsory participation in the sustainability workshops that did not yield the expected results led to a second adaptation after the first change did not work out either:

We have reached the point where we say, no, it's working time, but those who believe that they simply have the capacity for this topic should come. And we have already noticed that many, many people are coming, but that for some it is simply a relief, because they simply don't want to or can't. And maybe you just have to accept that. In my opinion or in my experience, the whole issue of climate protection, sustainability, and environmental protection cannot be forced upon the employees. It's always a matter of setting an example, of course, setting an example. But otherwise, I have to pick up the employees. And if you're not ready for it, you're not ready for it. And then there is no point in forcing them, to feed them with things. I don't think you should underestimate that. (FIRM B, CEO)

In response to previous greening activities that resulted in conflicts and heated debates between employees and project initiators, subsequent greening activities were designed more carefully. Employees were no

longer coerced to participate in an activity or perform an expected behavior:

> *And this "meat campaign" was planned much more cautiously and in a far-sighted way based on these experiences. Precisely because you know that it is something personal and how do I present it? One must not or does not want to take the moral high ground. […] And I think this "meat campaign" was so successful because of this conscious action, because one acted very, very carefully. And also because of this we tried even more to remain on this factual level. (FIRM C, Environmental agent 1)*

The implementation of the CO_2 project in Firm E was initiated top-down and carried out by lower-tier employees. Originally, 14 chosen climate project managers were told to conduct the implementation of over 400 ideas. This included the feasibility assessment of the individual ideas and their implementation. The teams were staffed by lower-level employees without any managers. After a project meeting in which the climate project managers were told to establish a climate protection culture in the company, they demanded more support from the management and afterwards every team was supported by a manager and additionally staffed with two or three members each.

To lower tensions of performing and belonging that might arise in the daily business for managers of Firm A, a leadership workshop was established to give these managers skills in how to work through paradoxical tensions that might arise between their personal social and/or ecological values and business demands:

> *That is the central challenge for managers in value-oriented companies. You have these employees who are usually highly committed, right? And they also have a lot of expectations of the company. So of course, when I hear [Firm A], I have certain expectations when I join the company, right? And then there's the normal day-to-day business, the operations, right? And of course, sometimes that's not compatible. That's the way it is. And standing in between is a key challenge. And we address this role in what we call the leadership workshop. (FIRM A, Speaker, HR management)*

New, more sustainable company standards were set, too. Firm C established new procurement standards to meet their own sustainability standards and made them compulsory for all departments:

> *And one result of these [unsustainable aluminum] cans was also that the management and the head of our marketing department, where such things often happen, that they, well, we have procurement principles and in these procurement principles [that] are relatively new, it also says that the environmental aspects must be observed. Environmental aspects, social aspects, ethical aspects, in other words, all of the things that could possibly be problematic when procuring products from Asian markets. (FIRM C, Manager of laboratory)*

After a phase of correction and adjustment, the rebalancing set in, which created a new sustainability equilibrium for the companies.

Rebalance to create new sustainability equilibrium. A phase of rebalancing is started when means of corrections are in place and adjustments are done to "calm the waters." The imbalance caused by the corporate greening activity is adjusted and results in the recreation of a new equilibrium. New ways opened up to work through paradoxical tensions, creating new opportunities and changing the outlook on future operations. The following quote illustrates how the knotted business/strategic goals versus environmental tensions were used to find the right way to solve an existing problem:

> *One way is through management, but the other is still through environmental protection. And then you can just steer from another direction again towards a problem solution. (FIRM C, Environmental agent 2)*

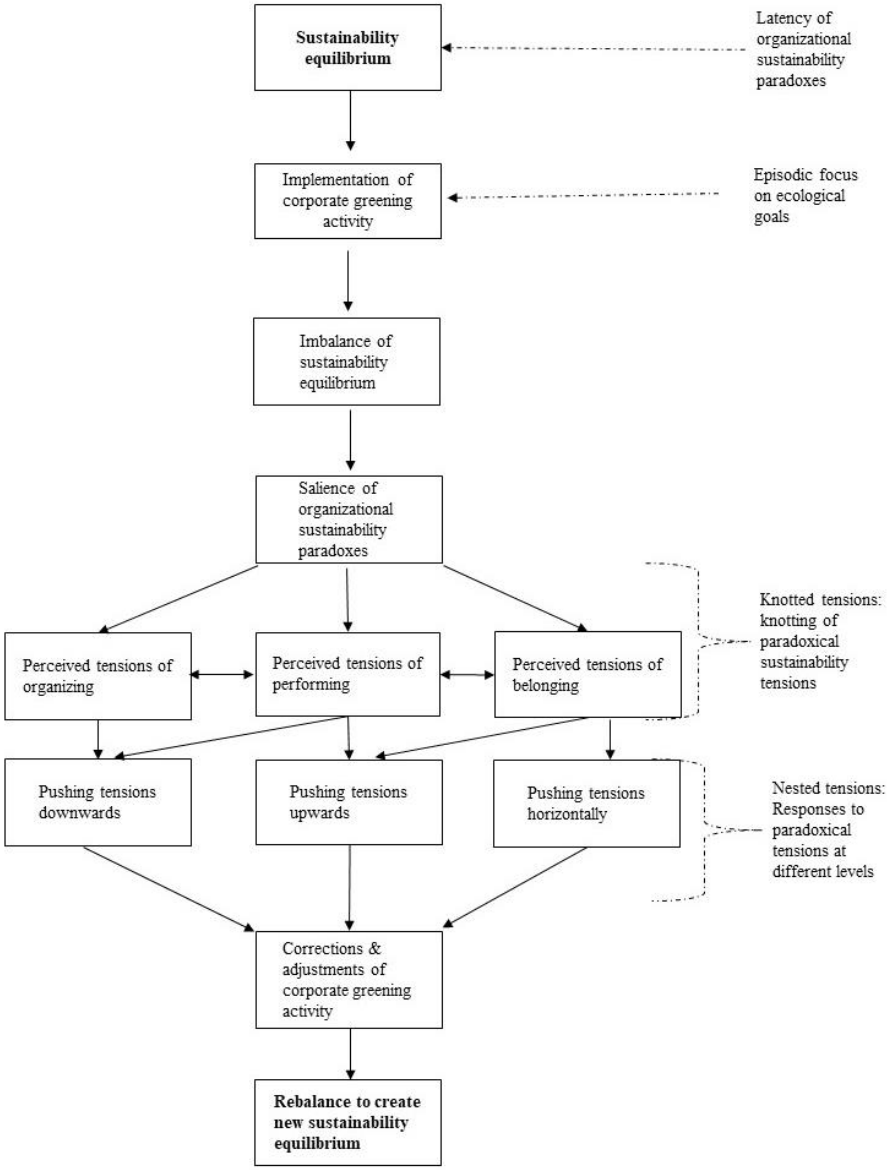
Discussion

This paper set out to explore how and what sustainability tensions organizational members experience in their efforts to engage in corporate greening activities and how they respond to these tensions. This study has looked into the sustainability tensions that are rendered salient and knotted with organizational paradoxes in activities directed at corporate greening. The findings have shown that in the course of corporate greening activities sustainability paradoxes form knots with organizational paradoxes of performing, organizing, and belonging, which also means that tensions are embedded in the organizational structure. By drawing the findings together, I have developed a model of the knottedness of sustainability tensions and shown how responses

to paradoxical tensions meant that tensions were pushed downwards, upwards, and horizontally. After corrections and adjustments to the tensions, a new sustainability equilibrium is found to be recreated.

In a nutshell, a sustainability equilibrium around economic versus ecological goals exists, which is imbalanced by the implementation of corporate greening activities. This observation is accompanied by the finding that through these activities organizational sustainability tensions are rendered salient and are knotted with tensions of organizing, performing, and, to a certain extent, belonging. In consequence, these tensions trigger responses that can be seen in three ways: pushing tensions down the hierarchy, pushing tensions upwards, and pushing tensions horizontally. In response to these paradoxical tensions, corrections and adjustments in the greening activities are worked out, which lead to a rebalance to create a new sustainability equilibrium (see Figure 2).

Figure 2 Model of sustainability equilibrium, knotted and nested paradoxical tensions*



* The described linearity is for ease of explanation since in reality the described observations often overlap.

This model offers three contributions to existing literature: (1) It offers an empirical account to the often conceptual studies on sustainability tensions (Hahn et al., 2018). (2) To paradox theory it adds new insights on the knottedness (Jarzabkowski et al., 2021; Sheep et al., 2017) and nestedness of paradoxical tensions (Andriopoulos & Lewis, 2009). (3) This study expands previous findings on how organizational actors at different levels work through paradox (Andriopoulos & Lewis, 2009; Berti & Simpson, 2019; Jarzabkowski & Lê, 2017).

Sustainability tensions can become knotted with tensions of performing and belonging, when ecological versus economic tensions get tied to belonging versus performing tensions. Research refers to a state of disorder that results from the knotting of tensions (Sheep et al., 2017). In demonstrating the knottedness of sustainability tensions that are (un-)consciously pushed away, organizational members cannot easily maneuver these tensional knots as attested by previous research (Tracy, 2004), but rather find ways to withdraw from the tense situation. This form of defensive response is relevant because it directly affects other organizational members who may or may not find ways to work through the persisting tensions.

The data analysis has shown paradoxical sustainability tensions appear at different levels, two observations could be made: First, the paradoxical sustainability tensions are nested in the organizational structure (Jarzabkowski et al., 2013) and are perceived by organizational members at different levels. Second, when greening activities are performed, sustainability paradoxes appear as knotted (Sheep et al., 2017) with other organizational paradoxes of organizing, performing, and belonging. As a result, organizational members

respond to these paradoxical tensions in three main ways: Managers or project managers tend to push tensions down, i.e., tensions are passed on to employees at lower hierarchical levels. Conversely, employees react to release themselves by pushing paradoxical tensions upwards. Third, paradoxical tensions are pushed in a horizontal direction towards colleagues and peers, although this mostly stems from organizational members who are not directly involved in the corporate greening activity. By addressing paradoxical tensions on multiple levels, I have highlighted that paradoxical tensions are not only nested but amplified when they spill over to other levels (Jarzabkowski et al., 2013). However, this is not necessarily in a top-down manner, as tensions on a lower level can intensify tensions at a higher level, too.

As it has been previously noted by researchers, sustainability paradoxes exist at the individual (Carollo & Guerci, 2018), organizational (Jay, 2013; Smith et al., 2013), and/or system level of analysis (Hahn et al., 2015; Schad & Bansal, 2018). Most commonly, sustainability tensions are mirrored in economic versus ecological goals, creating challenges for organizations in how to work through the existing sustainability paradoxes (Bansal, 2002; Hahn et al., 2015). According to paradox theory, firms need to find "workable" (Lüscher & Lewis, 2008) solutions to address paradoxical sustainability tensions.

I have combined findings from sustainability research on paradoxes with research on the organizing of tension in the form of a dynamic equilibrium to show that latent sustainability paradoxes are held in balance. Corporate greening activities can imbalance the existing equilibrium when organizations focus on ecological goals, which in turn leads to the knotting of tensions that are then pushed away. This is

answered by means of corrections and adjustments to rebalance tensions and create a new sustainable equilibrium.

Limitations and Future Research

This study mostly relies on interview data. Although it offers rich insights into corporate greening activities, the study's design limits the interpretation of ongoing processes. For deeper insights into the development of the paradox dynamics and the processional character, a process study could cover smaller incidents that interviewees might not recall in an interview situation. However, the temporary nature of the greening activities in the different case study companies did not allow a different study design. For example, for Firm E the decision to start a CO_2 neutrality project dated back only a month and the very first steps could only be traced back retrospectively. Future research could address this issue with an ethnographic study (van Maanen, 2011; Ybema et al., 2009).

The five case studies were chosen based on their successful implementation of greening activities. Corporate greening activities in less "green" companies might offer different results. The findings are thus only partly generalizable to other organizational settings (Yin, 2014).

One other limitation is the study of (latent) paradoxical tensions (Andriopoulos & Gotsi, 2017; Schad et al., 2016). By definition, corporate greening entails a row of paradoxical tensions (Hahn et al., 2015). However, uncovering underlying paradoxical structures and patterns greatly depends on the interviewees' perception of tension

(Smith & Lewis, 2011). As reported by (Tuckermann, 2019), organizational members might "hide" paradoxical tensions, rendering them invisible. Future research on sustainability paradoxes might address this aspect in more detail.

As it has been noted by Berti and Simpson (2019), the way organizational members respond to paradoxical tensions largely depends on their role and hierarchical position. More empirical research is needed to uncover the different response "options" for responding to sustainability tensions. Finally, it would be interesting to know what positive but also unintended consequences (Putnam et al., 2016) the working through of paradoxical tensions have for individuals and organizations in the short and long term.

Conclusion

This study has focused on the paradoxical tensions that are rendered salient by the implementation of corporate greening activities in five case study companies. It was found that alongside sustainability paradoxes, organizational paradoxes of belonging, organizing, and performing come to the surface. These tensions thus form tensional knots making it difficult for organizational members to work through them. As a consequence, instead of these tensions being worked through, they are pushed away. However, the study shows that the working through of paradoxical tensions leads to corrections and adjustments in the way these organizations work with sustainability and organizational paradoxical tensions.

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Appendix

Table A1 Data supporting interpretations of second-order themes

Dimension	**Themes**	**Representative Quotes**
Knottedness of sustainable and belonging tensions	Sustainability tensions at organizational level	*Can we afford it? Can we do that? And some things, as hard as it is then, unfortunately, have to be put on hold or stalled because it just doesn't work. Because as a medium-sized company we cannot afford everything that we would like to do. This responsibility ultimately remains with the management. There is no other way. So sometimes you have to slow down the employees a bit. Which is a shame, but they also understand. (FIRM B, Sustainability manager)* *Climate protection is also on the company's target agreement system [affecting bonus payments]. In other words, emissions play a role. That has an effect on all employees and then of course they had to accept when we didn't make it or didn't quite make it [to the set energy saving targets]. (FIRM E, Managing director)*

		So objectively, there was no way back. Or no way to go any further [in investing in this corporate greening project]. There was no way to do that. The arguments were just clear. Too clear. To everyone, to everyone's understanding. So, I mean, that's also the philosophy from our boss, and that's the owner. And I think that's also true, a good ecology also needs a functioning economy. We can only operate ecologically if it is still economically viable somehow. And that's just this balancing act, and you simply have to do it. (FIRM B, Head of works council) *We pay about 30, 40 percent more for this environmental paper, but it's environmental paper, it's certified, and it has a much lower or much better carbon footprint. We deliberately accept additional costs and a poorer operating result in order to improve the carbon footprint. At the end of the day, I have no objection whatsoever that I don't have any revenues from this. It's just, in quotation marks, something positive for the environment. Sure, you can exploit it a little bit in terms of marketing, but I don't think it's going to attract or raise as much attention as if I were to buy electric cars for example. But this is simply a contribution where we take responsibility for the environment. And for us, this is not a marketing gimmick, as our*

		competitor suggested at the beginning; it's simply our philosophy in practice. (FIRM B, Head of HR and administration)
	Sustainability tensions & identity tensions at individual level	*I think you can't be good enough [sustainably], and why shouldn't you show that once in a while. And on "we are already good" I can't rest either. How are other people supposed to know that we're good? Are we even? Now the management wouldn't like to hear that, but I don't care. (FIRM C, Waste management agent)* *So even if it says in the environmental goals that we always pay attention to resource conservation and so on, that is not always respected. And it is not carried out by all departments and groups here. That's not the case. We have also had tin cans from Asia. (FIRM C, Manager of laboratory)* *[It is about what] we write into these environmental programs and environmental declarations. That we at least try to live by them. And my feeling is that the lower we go in the hierarchy, the more likely it is that this is the case. So sometimes I can't really say whether the management always sees the environmental aspect as the most important aspect, even*

		though it's in our environmental statement, or whether it's not the economic aspect that tends to be the deciding factor. Sometimes you get the feeling: we talk like this and then do this. Somehow that doesn't fit together. (FIRM C, Manager of laboratory) *That sometimes you make a conscious decision to do that, where I would say, "I wouldn't have done that personally." You have to accept that, I mean, we are a business enterprise in the end. But this process alone, it has to be done consciously then; I think that's good. (FIRM C, Manager of laboratory)* *So, you don't have to be 100 percent convinced. But you at least have to be open. Because if your colleague gives you a silly look for the fifth time when you go to the butcher across the street and get a hot dog for a snack and asks, "Why don't you go to the organic food store?" and you don't have any access at all to these issues … then it gets difficult. (FIRM B, CEO)* *My nickname is climate dude and such. But it is not meant badly. (FIRM D, Employee, depot)*

		It has always been frustrating, of course, when one has reached one's limits, because things that were actually good in principle, and do not even necessarily bring a loss in the long run, were nevertheless not realized. (FIRM E, Employee, controlling) *We also have employees who are with us for half a year and then say, before the probationary period is over, "I can't do this." (FIRM B, CEO)* *What was a bit blatant for me was this campaign we had last year with the sustainability day. We discussed it in the environmental group that we provide paper tablecloths where people can write something on it. We spread some statements [on sustainability issues] so that people can talk with each other. And then it started. Paper tablecloths. "Oh, this is supposed to be sustainable?!" (FIRM C, Waste management agent)*
Knottedness of sustainability and organizing tensions	Contradictions between planning and implementing	*From the beginning, I also wanted us to have allies at the sites, so to speak. … So, there are two aspects to this, firstly for our own benefit, so that we know what is happening out there, and secondly, of course, in order to …, yes, to find committed colleagues and also to motivate them. (FIRM D, Head of department environment/energy/innovation)*

		The executives always just get e-mails from us: Here, the climateers have a meeting again now…, enable them to do that. [clears throat] And that's actually it. (FIRM D, Department speaker) *We have been working on this issue of sustainability, environmental protection, and climate protection for a very long time. And we have also been trying to involve our employees in this for a very, very long time. But there are always frustrating stories. That simply has to be said. So, you make an effort and make an effort, or you think you are making an effort and making an effort, and then at some point you realize that the employees are not interested at all. (FIRM B, CEO)* *We want to be carbon neutral, yes, but don't we want to do more with it? So, and then you realize, we want to do something for the brand. We want to support the federal state, we want to, we want to. And then I say, hey, and now you're dumping all that on the energy manager, who's somewhere down the line, with two hierarchical levels or three hierarchical levels above him? So, for me, that was actually doomed to failure in that form. … And then I said,*

		I'm ready to take over the project lead, but I'd like it to be a real project and not just a line task. (FIRM E, Managing director) *If we were to be given more time, that is, in the case of the climateers, we have already tried to give them a certain amount of time for this. They have to be supported again somewhere and then also be approved by the departments. That is another issue. (FIRM D, Employee, Collection station, and member of the works council)* *So, to have the self-confidence, so in the beginning, we had such experiences again and again, where employees said: "We should push this now? I need my supervisor for that." Discussions like that we had. Parallel to the line that I have the project next to it and yes, and if something is not going well, that you then feed it back to the project management and discuss it there, like that. That took some getting used to, and then it was also always about the resource struggle. (FIRM E, Managing director)*

		It's always quite funny, because … for example, our cleaning staff is very interested in the topic of waste. And at the beginning, the logistician said, "Now the cleaning staff is telling me what I have to do with my waste!" But especially when you are in a workshop together and realize that the cleaning staff actually have great ideas from their work, then the acceptance also increases. (FIRM B, Managing director) *It's not that the manager says: You get one hour a week where you can sit down here. It's not like that, right? So [quietly]. (FIRM D, Department speaker)* Researcher: *What could you optimize from your side?* *Well, one should talk to the individual managers, right? That, because everything is still so new, everything is still, we still have to think about the concept. (FIRM D, Speaker, environmental management)* *I have another one [in the team] who has so many tasks; he's a fire protection helper and a first aider and, what do I know, a safety officer. He doesn't have any time, right? And he was*

		chosen [to work for the CS project]. And we don't really need him, because he doesn't have any time. (FIRM D, Department speaker) *I just think that a supervisor basically says, "Yes, yes, of course I will give you the resources," but [what] if the resources are simply not there? (FIRM D, Speaker)* *The climateers are being calibrated again a bit so that they can march off again with new energy. And there is this question, what else can I do beyond that? How can I inspire people? At the end of the day, it has something to do with inspiring. The fact that this is not the main purpose of the work, but rather a windfall effect, something that you just go along with and that doesn't really have any direct advantage. (FIRM D, Manager, Head of depot)* *It was such a topic, which was pushed up so much from below. And then from above. So, it wasn't this: Man, great and we'll pull it off together. But if it had been distributed a bit more in the hierarchy, I think it would have been even better. (FIRM E, HR manager)*

	Sidelining middle managers	*I don't think, but just a guess, that our managers, the lower management level, have already said anything along the lines of "Please, close the door here, turn down the heating for a moment." I don't believe that. … Simply because other issues in day-to-day business seem more important to them. So, such an important issue can only be brokered from the top down. (FIRM D, Employee, Collection Station, and member of the works council)* *The problem with the supervisors, I think that can be addressed with talks. I don't have a solution to the problem with the colleagues. You can't always please everyone. (FIRM D, Head of department, environment/energy/innovation)* *There is this: "Yes, we don't need a climateer, because we already take care of energy. And these four hours, we have no capacity" [quoting managers]. (FIRM D, Department speaker)* *And, but the one thing is to hear that and to know that, and then to implement it in everyday life, like that. And this area of tension and then, I don't know, when. Now and then I also had to have, let's say, conversations with one or the other area manager, where I got clear signals*

		from the climateers that it's not working. "So, I don't get the time," and "I don't get along." But that eventually settled down, like that. But that was definitely an adjustment process, yes, which at first was a bit bumpy. (FIRM E, Managing director) *So,* being supported on paper is all great, but as soon as we want to implement something, we have to overcome all resistance *and then, that's difficult. I would say, I support, I would say, 80 percent, everyone wants to save energy, or 90 percent, but when it comes to actually saving energy, we get may be only … 60, or 50 [percent of support by managers] (emphasis added). (FIRM D, Department speaker)*
	(Non-)participation of (senior) management	*It is actually a topic of the management board in that sense, but, … I believe that one must simply approach it again with more emphasis, demand even more …, inquire even more, check up even more …, perhaps see that one can perhaps make such a … . There are sometimes … meeting protocols, so that one sets such regular appointments [with the board], where one then just reminds, where perhaps again a proof must be furnished that certain management levels then talk again with the subordinate levels about this topic, point it out again a little bit. Because otherwise one has the feeling that the topic is made a topic at the*

		beginning of the year, … then it goes down. So, after two years it comes up again: "Where do we actually stand?" Then you have a few figures, but that's why we don't yet know to what extent it has really reached the company. (FIRM D, Employee, Collection station, and member of the works council) *I think it would have been better if there had been a little more involvement in this project in terms of empowerment by managers, or perhaps even more, even more managers would have taken part in this project. Because it is partly difficult, of course, when you are measured as a climateer also to a certain extent by the implementation of things or stimulation. And somehow you have the feeling that you don't really know whether the others really want it that way. And I think a somewhat better mix [of people] could have been achieved. (FIRM E, HR manager)*
	Volatility regarding sustainability goals	*I think that's because everyone does a little bit of what they want. And it's difficult. Then you have to catch them again and again. … And then I think there's a lack of clear guidelines from the management. (FIRM C, Waste management agent)*

		[Quoting the environmental agent]: "That would be great [hiss] an EMAS [certification of environmental management] flag." [Mocking management]: "No. For God's sake. For God's sake. We don't need that." You won't see a sign anywhere here with our awards. They are with us somewhere in the drawer or somewhere else. A bit, quite honestly, [FIRM C] thinks like: "We don't need that. We are already good." (FIRM C, Waste management agent) *But I have the feeling that those who are responsible for it don't do it as courageously as they could. And that's always the crux of the matter. When those who are responsible for it are not 100 percent behind it. (FIRM E, HR manager)* *I am against air-conditioning units in offices. And I don't think we should continue to advocate this as a company either. But I'm also a bit critical of our Board of Management. And a representative of the Board of Management, too, should be setting an example and not buy air-conditioning equipment themselves, and then preach [energy saving] to the outside world. (FIRM D, Employee, administration, and women's representative)*

		If one had said right from the start of the Veggie Day, "This is a corporate decision, we want it, we're fully behind it, we'll all go," I think things would have been different. But if you have the feeling that someone is wavering a bit, that can't be so good. (FIRM E, HR manager) *My dream scenario is that we would derive energy targets and each business unit would get energy targets that it has to implement. … Then the climateers would need to work together with the managers/supervisors to implement these energy targets. Now [it] is just difficult with the responsibility. (FIRM D, Department speaker)* *And in doing so, the company also makes a certain contribution. But people also have to have the freedom to live up to the importance that it should have. This means that if they are given completely different priorities in their daily work and day-to-day business, or as an assignment, then they have little time to look after [the greening activity]. (FIRM D, Employee, collection station, and member of the works council)*

		Then it takes its time. But it is important to us. We are quite lean here with this energy area, which has been newly created. I have two colleagues and I do this to a small percentage, because I have other tasks, and that's it. We can't do that alone, in all the locations that we have. There are just under 40 locations in the city, different structures. We can't cope with that at all. (FIRM D, Head of department, environment/energy/innovation)
Knotted sustainable and performing tensions	Unpredictability of project outcomes	*And to get involved in something like this, where we can't say exactly, where we say, we have ideas here and we have possibilities here and there, but we don't yet know exactly what will come out of it at the end of the year, but that's what we have to work on now, so that we can implement them as quickly as possible. It took a lot of getting used to, even for many managers. (FIRM E, Managing director)* *And I have no idea how else we could do it [to save energy in the company]. … We'll be happy to go [laughs] another, more efficient, way maybe. But, I think, ultimately, when you're dealing with people, that's the way it is. (FIRM D, Head of department, environment/energy/innovation)*

		You have to do everything somehow and it is a lot of time with uncertain outcomes. Whether it will work out in the end. And in the concrete example [of a CS project], that's in my drawer, the idea that I've always wanted to realize. And it hasn't been realized yet. (FIRM A, Senior manager) *The climateers include a few executives, but not many. Two, three team leaders. I think you could have mixed it up a little bit more. One could have also, I know, I would have, for example, why not a division manager, why can't that be an ambassador? Maybe if this had been more firmly anchored at all levels, it would have been a little more visible at all levels. (FIRM E, HR manager)* *We will never be able to quantify the actual/achievable savings potential through this [greening] action. A colleague kindly threw me a number that I always peddle. It's 20 percent maximum savings through user behavior in such a perhaps similar company to ours. I approach the [senior] managers with this, and that is argument enough. They understand that we cannot quantify this. (FIRM D, Head of department, environment/energy/innovation)*

		That was certainly a big challenge because we all didn't know; do we really have a chance of getting there at all? So, you can't do the math, because you don't have the list of measures. (FIRM E, Managing director) *Because when you set yourself a climate protection target, there are of course employees and managers—I don't just mean employees, but managers as well. When we implemented it and wrote it into the target agreement system, the step was taken to make it really, really prominent. (FIRM E, Managing director)* *It really is wishful thinking and then the actual implementation, [there] is, I think, still a small gap. (FIRM D, Department speaker)*
	Resistance and reward for greening activities	*If we do well, there are these* prizes *[emphasis added] for those who save the most energy. That's certainly all helpful, that's good, but that still doesn't interest the employees enough. And it is simply also difficult to inspire people for it … who are outside on the street and*

		collect the waste. Whether the company saves 5 percent more or less energy, they gain nothing, nothing at all from it. (FIRM D, Head of depot) *Sure, everyone wants to win the award now, but our little office can't do it anyway, but still, we take part. (FIRM D, Employee, administration)* *Our job is to clean the streets [laughs], take away the garbage and everything else comes after that. (FIRM D, Head of department, environment/energy/innovation)* *It is one of very many projects that we do here. The employees are only partly interested in it and enthusiastic about it, because the worries and needs for the fulfillment of the work, the actual job, are more important for them than saving the last bit of energy here and there. (FIRM D, Head of depot)* *Difficult topic, because we simply have a LOT of projects. … The employees are already working to capacity, and there is this [energy saving] topic difficult to convey. Because they*

		simply have worries and needs elsewhere. And they are simply not interested in it, it is not a primarily important issue. [On top of that,] they have nothing to gain from it. (FIRM D, Head of depot)
	Recurring tensions caused by greening activities	*First, they [employees] wanted the return on investment to be lowered for such measures, because it makes sense, and so on. So, they tortured me quite a bit, I'll put it that way now, also in my role as the managing director. And at some point, we found this compromise, and they were also satisfied. (FIRM E, Managing director)* *But you notice that when you're on your way to the cafeteria on the day when Veggie Day is, then somehow there's already such a buzz. But the numbers prove otherwise. So, this Meat-free Day, nothing breaks in at all. It is actually quite accepted. (FIRM E, HR manager)* *You have your work processes, as I said, and your superiors are actually behind you, there is no problem. And with the colleagues maybe, yes, one or the other: "Yes, we can do your work," they don't have to, at the moment maybe 5 minutes or sometimes 10 minutes, if I enter something*

		into my computer here now then …, if I have researched something … . (FIRM D, Employee, administration)
	Subjection to CS activities	*And we had the topic of mobility last year. And then we said, well, let's not do a workshop, let's just do a presentation. We simply presented what is available. And then we got feedback from a lot of employees: "But we would have liked to work on this ourselves again." (FIRM B, CEO)* *We have always considered it a compulsory event. It was also working time. And everyone had to go. (FIRM B, CEO)* *We don't want to tell people here not to eat meat on Mondays. On the other hand, it was also important to the management to say that we want to educate, the people must have the information to be able to decide for it. … For example, it was announced that we should definitely also communicate certain aspects of the World Food Report. Small-scale agriculture, because it covers everything that [FIRM C] supports. (FIRM C, Environmental agent 1)*

		Most of [the project members] have registered themselves, and those who haven't registered themselves are also struggling a bit. (FIRM D, Department speaker) *The boss asked: "You're on site almost every day, and you used to be an electrician by trade. Does it fit? Yes, No?" "Yes." And then I was a member of the project team. (FIRM D, Employee, depot)*
	Employees' responsibility and rejection	*The problem is, whether an employee saves a lot or a little energy, in his wallet, and that is not noticeable at all. So, we appeal to the sense of responsibility, to keep [this] in mind, not only for the company, ultimately also for the environment. (FIRM D, Head of depot)* *The hope was to somehow manage that [CO_2 neutrality project] with the energy manager. And then, I don't know, five or six technical ideas were listed first, and they [colleagues from the senior management] said you have to work through them first, and so on. And where I say, hey there, I never think that's enough as a process. (FIRM E, CEO)*

		Those who said YES at the beginning and then backed out. Right when they saw what it all means, they said NO afterwards. (FIRM D, Department speaker) *There are currently two who have dropped out… And there are also two, whom, I have not taken care of, right? …And they've bailed out now because they thought the Climate Award was going badly for them. And besides, they have so much to do that it's no use, right? Now I want to make an appointment [quietly], maybe to get them again, because they are on the property that consumes a lot of energy. (FIRM D, Department speaker)* *There's only me, so I sort of look after the climateers, right? … After the Easter vacations I visited them all pretty quickly one after the other. I had a lot to do. Then I thought: It can't go like this, right? And now I've shown them [top management] which properties, which five properties I'm now looking at. Right? And that, I think that has a lot to do with appreciation and relationship work. (FIRM D, Department speaker)*

		Now that I think about it, yes, of course I also asked some of them if they wanted to [join the greening project]. … I asked [a colleague] and she thought it was great, but unfortunately her colleague wanted to do exactly the same thing. And then SHE was allowed to do it, because I asked her. And I was sorry about that afterwards. (FIRM D, Department speaker) *The climateers were told [by the management] that now the climate protection culture still had to be established. And […] many climateers said "This goes a bit too far. Now the management must also get more active." And that's what happened afterwards, and … these climate culture working groups were all staffed with a member of the management team, also by an ambassador or at least one ambassador plus others from the respective energy teams. (FIRM E, HR manager)*

Chapter 3 – Paper 2

Paper 2

Environmentalists at work: The interplay between self-identity and paradoxes and its consequences for employee green behavior

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Environmentalists at work: The interplay between self-identity and paradoxes and its consequences for employee green behavior

Abstract

Employee green behavior plays a pivotal role in corporate greening. While research commonly focuses on factors that foster and motivate greening behaviors of employees, research on green employees has been neglected. Being more environmentally friendly than the organization might consequently spark paradoxical tensions for these employees. By applying a paradox lens, this study aims to broaden previous findings on employee green behavior. Through this qualitative study I therefore aim to explore the paradoxical tensions around employee green behavior and their implications for employees and organizations. Green employees with a presumed high intrinsic motivation to engage in employee green behavior have been chosen for this study. The findings show that these green employees are mostly confronted with paradoxical tensions of belonging and performing affecting their organizational self. Employee green behavior is perceived in an ambiguous way, harmful on the one hand, yet on the other hand, as natural necessity. However, due to structural limitations mirrored in tight organizational schemes and existing pragmatic organizational paradoxes, which are mostly re-enforced by power inequality, they are confronted with limited handling strategies to cope with these tensions. The study concludes that defensive responses to these

tensions can lead to withdrawal and other forms of disengagement from employee green behavior.

Keywords: Employee green behavior, corporate greening, environmentalists, paradoxical tensions, power

Introduction

Employees play a pivotal role in creating more sustainable business organizations, and employee green behavior (EGB) in particular has been found to contribute to the environmental sustainability of organizations (Andersson et al., 2013; Ones & Dilchert, 2012b; Paillé & Boiral, 2013). EGB is described as voluntary (Norton et al., 2015), rather than required (Bissing-Olson et al., 2013) or rewarded, discretionary (Daily et al., 2009) activities in the workplace that are aimed at the protection or improvement of the environment and contribute to environmental sustainability (Ones & Dilchert, 2012a).

Many researchers have assumed that interventions are needed to motivate employees to engage in EGB. Through a meta-study, Staddon et al. (2016) studied the most successful interventions to promote saving energy in offices. Others explored the role of leadership in encouraging employees to engage in EGB (Graves et al., 2013; Graves & Sarkis, 2018). In a study in Spanish automotive firms Sarkis et al. (2010) found that the environmental training of employees helped to achieve desired greening behaviors. In another intervention study, it was found that the use of feedback and peer education reduced the energy consumption in the workplace (Carrico

& Riemer, 2011). Finally, a UK survey addressed the role of HRM practices in encouraging EGB, finding the most common ones used managerial interventions (Zibarras & Ballinger, 2011).

In mostly quantitative studies (Francoeur et al., 2021), a number of factors influencing individual determinants of EGB have been studied so far. In particular, the influence of environmental attitudes on EGB has been studied widely (Baker et al., 2014; Bissing-Olson et al., 2013; Nigbur et al., 2010) and has been identified as one of the key predictors for EGB in a recent meta-study (Katz et al., 2022). However, most of the studies on individual determinants have included between-person levels, such as norms, motivations, and beliefs in explaining EGB (Baker et al., 2014; Carrico & Riemer, 2011; Ciocirlan et al., 2020; Gao et al., 2017; Raineri & Paillé, 2016). Very few studies have addressed within-person effects on EGB (Norton et al., 2015). One of them was done by Bissing-Olson et al. (2013) on affective states: in a state of calmness, relaxation, and of feeling content, employees conducted their work in more environmentally friendly ways.

Although the role of an environmental self-identity has been studied for green behavior outside of work (Lalot et al., 2019; Whitmarsh & O'Neill, 2010), it was only recently considered as a determinant of EGB. In a study by van der Werff et al. (2021) it was found that persons with a strong environmental self-identity, i.e., employees who saw themselves as pro-environmentalist, were more likely to engage in EGB, such as accepting environmental policies, and

exhibiting energy saving and other more general green behaviors. In EGB literature, research on green employees is largely absent (Ciocirlan, 2016; Davis et al., 2020). Moreover, the idea that employees might be "greener" than their employer and are "'stuck' in non-green jobs or organizations" (Ciocirlan, 2016, p. 2) has not been addressed before. Beyond that, in EGB research it is rather unclear how employees tackle the conflicts between their observations of organizational actions and their environmental self-identity (Ciocirlan, 2016; Davis et al., 2020).

Previous research has indicated that the shift to environmental sustainability can be facilitated by individual champions (Boiral & Paillé, 2012). For example, the role of individuals, such as tempered radicals (Meyerson & Scully, 1995) or grassroot activists (Scully & Segal, 2002), in organizational change settings has been examined before. In the corporate greening literature, Andersson and Bateman (2000) explored how environmental champions can convince organizational members to engage in environmental programs or activities. The internal activists' influence on corporate responsibility has been studied by Girschik (2020). In several studies addressing sustainability managers, it was shown that the discrepancy between the person's environmental orientation and their organization's environmental orientation can spark identity tensions. In their study on Italian sustainability managers, Carollo and Guerci (2018) showed that business versus values-oriented, organizational insider versus outsider, and short-term versus long-term identity tensions exist and that attempts are made to accept and

deal with them simultaneously. Ghadiri et al. (2015) showed that CSR professionals engaged in "identity mitigation," i.e., they embraced and distanced themselves from contradictory identity demands. In their study on Australian sustainability specialists, Wright et al. (2012) observed that they struggled to overcome the conflict between their environmental self-identity and the organizational discourse on environmental issues.

Although paradoxical identity tensions highlight existing contradictions regarding EGB, this stream of research has ignored the consequences of such paradoxical tensions for employees and also for affected organizations. In particular, the asymmetrical power distribution in organizations and its consequences for employees are overlooked (Berti & Simpson, 2019). In particular, double binds, paradoxical predictions, catch-22 or Kafkaesque situations, and doublethink are found to impact on individuals' behavioral choices (Berti & Simpson, 2019). Therefore, there is a need to consider the impacts of such organizational pragmatic paradoxical tensions on individuals who want to engage in EGB. Since paradoxical tensions exist permanently in organizations and become visible in moments where decisions need to be made in the light of competing demands, individuals are forced to find their own strategies to deal with such situations (Smith & Lewis, 2011). When exposed to tensions between work and private domains, green employees might construe either/or dilemmas (Aust et al., 2017), i.e., they try to avoid confronting paradoxical tensions and might refrain from resolving them in their workplace. If paradoxical tensions are not addressed or

if they appear repeatedly they can result in emotional anxiety, discomfort, ambiguity, and inertia for the affected individuals (Putnam et al., 2016). Consequently, there is a high risk that these green employees become overwhelmed by or suffer from the existence of paradoxical tensions and act in disadvantageous ways in their work environment.

The aim of this study is threefold: (1) Exploring the role of green employees in EGB and how it affects their environmental self-identity. (2) Exploring the paradoxical tensions in EGB (among employees with limited agency) to add to existing literature on identity tensions, since most studies have been about the paradoxical identity tensions of sustainability and CSR managers (Carollo & Guerci, 2018; Ghadiri et al., 2015; Jarzabkowski et al., 2013; Wright et al., 2012) and the existence of paradoxical tensions among other groups of employees has been largely neglected. (3) Exploring the responses to paradoxical tensions; since employees' handling strategies are limited (Berti & Simpson, 2019) and only a few papers have addressed this aspect so far (El-Sawad et al., 2004), there is a need to explore the consequence of paradoxical tensions among employees outside of higher management positions and their handling strategies. It is imaginable that green employees suppress or hide their interests towards environmental sustainability due to existing paradoxes, especially if their options, resources, and power are restricted. Hence, I try to answer the following research questions:

1) What paradoxical tensions become salient for green employees in their efforts to engage in EGB?
2) How do green employees respond to the paradoxical tensions and what consequences do they have for the organization?

I explore these questions with a qualitative study. By offering an empirically grounded account of the perception of paradoxical tensions in EGB and its consequences, this study contributes to the literature in three ways: First, through an identity theory lens, this study adds to the scarce research on green employees and the influence of identity in EGB. Second, in applying a paradox theory lens, this study offers a new explanation to previous findings on barriers to the successful implementation of environmental sustainability in organizations (Yuriev et al., 2018). Therefore, paradoxical tensions among green employees will be explored, adding to studies that addressed the paradoxical tensions of sustainability managers (Carollo & Guerci, 2018; Ghadiri et al., 2015; Wright et al., 2012). Third, unlike managers, employees who are not rank-and-file members of these organizations have limited agency and freedom to act (Berti & Simpson, 2019), this study therefore explores the employees' responses to paradoxical tensions within their organizational context and the consequences for employees and organizations.

The remainder of this paper is structured as follows: In the following section I introduce the theoretical framework which is followed by

the methods applied for this study. Then I will present the results of this study and discuss the findings.

Theoretical framework

This study uses two theoretical frameworks. Paradox theory is used to explore the perception of tension among employees who engage in EGB, while an identity theory lens is applied to understand the perceived tensions that arise between individuals and their respective organization. Existing paradoxes become salient through the perception of paradoxical tensions and appear when individuals simultaneously experience contradictory, but interrelated elements (Smith & Lewis, 2011). The paradox literature places identity-related paradoxes under the umbrella of paradoxes of belonging that arise between the individual and the collective (Smith & Lewis, 2011).

Paradox theory as a lens to study paradoxical tensions in EGB

Organizations are "founded on paradox: on the one hand it contains free, creative, independent human subjects; on the other hand the relation between these subjects aspires to be one of organization, order and control" (Clegg et al., 2002, p. 483).

Paradoxes are defined as "contradictory yet interrelated elements that exist simultaneously and persist over time" (Smith & Lewis, 2011, p. 382) and "seem logical in isolation but absurd and irrational when appearing simultaneously" (Lewis, 2000, p. 760). Paradoxes are found to possess three overarching characteristics: (1) Paradoxes

show perspectives, feelings, messages, demands, identities and interests, or practices. (2) Paradoxes are socially constructed by actors who try to make sense of their ambiguous environment. Finally, (3) paradoxes appear through self or social reflection or interaction (Lewis, 2000).

Literature distinguishes four main groups of paradoxes, which manifest at different levels: paradoxes of learning appear across levels, paradoxes of organizing at the macro level, paradoxes of performing at the micro level, and paradoxes of belonging at the meso level (Jarzabkowski & Lê, 2017; Smith & Lewis, 2011). Paradoxes of learning are about change, renewal, and innovation that spark tensions between the new and the old. Paradoxes of organizing result from competing designs and processes (Smith & Lewis, 2011). This paper is mainly concerned with paradoxes of performing, which stem from conflicting demands of various stakeholders, and paradoxes of belonging, which show paradoxical identity tensions and arise between the individual and the collective (Smith & Lewis, 2011).

While paradoxes of performing appear when organizational actors are forced to perform tasks that are contradictory and inconsistent (Jarzabkowski et al., 2013; Jarzabkowski & Lê, 2017), paradoxes of belonging summarize identity-related tensions between the self and the other, or tensions of self-expression and group identities, which often increase “actors’ defenses, intensifying conflict, polarization, and tribalism” (Lewis, 2000, p. 769).

Observing paradoxical tensions

Paradoxical tensions can be latent, salient, or in transition from one state to another. Latent paradoxical tensions arise form contradictory but interrelated demands in organizations. In situations marked by plurality, change, and scarcity, they become salient to organizational actors (Smith & Lewis, 2011) and organizational actors are forced to make sense of these individual demands. Whether the responses lead to virtuous or vicious circles and how the responses look are influenced by many factors (Keegan et al., 2019a). The existence and the need to handle paradoxical tensions in organizations turn them into an inherent aspect of working life (Keegan et al., 2019b).

Responding to paradoxical tensions

The perception of paradoxical tensions leads to feelings of "stress, anxiety, discomfort, or tightness in making choices and moving forward in organizational situations" (Putnam et al., 2016, p. 4) and they surface because of "the clash of ideas, principles, and actions as well as any subsequent feelings of discomfort" (Fairhurst et al., 2002, p. 506). Therefore, people need to find resolution and respond to these paradoxical tensions in various ways. A variety of defensive and proactive handling strategies[1] have been identified so far: Among the defensive responses, splitting, regressing, and suppressing are relevant for this study. While proactive responses, such as accepting, confronting, transcending, adjusting, opposing, and synthesizing (Lewis, 2000; Poole & van de Ven, 1989; Putnam

[1] The terms handling strategies and responses to paradoxical tensions are used interchangeably in this paper.

et al., 2016; Smith & Lewis, 2011) play a minor role. Splitting is about separating the two poles that cause the tensions, either by a temporal or spatial separation of the two poles (Jarzabkowski et al., 2013; Poole & van de Ven, 1989). Regressing refers to taking safe options, and in the most extreme case regression means withdrawal, i.e., implementing an exit strategy to leave psychologically or physically when confronted with tensions (Putnam et al., 2016; Tracy, 2004). Suppressing is used when one element of a paradox is preferred such that the other element of paradox is disregarded (Jarzabkowski et al., 2013).

In their theoretical study, Berti and Simpson (2019) brought the limitations of coping strategies to the attention of paradox researchers. Owing to limited agency and existing power dynamics, employees are exposed to various organizational pragmatic paradoxes. The exposure to organizational pragmatic paradoxes is related to power dynamics, i.e., the individual's position and agency in the organization affects the handling of paradoxes by individual employees. These paradoxes appear in the form of double binds, doublethink, Kafkaesque, or catch-22 situations (Berti & Simpson, 2019). Double binds as a form of coercion refer to situations in which "obeying the order means disobeying it" (Berti & Simpson, 2019, p. 253). Doublethink is about holding and accepting two opposing views simultaneously, while Kafkaesque situations can be described as a form of domination through systemic power limiting individuals' freedom to make decisions and act (Berti & Simpson, 2019). As a result, individuals experience catch-22 situations (Berti

& Simpson, 2019). In organizations, these situations can e.g. arise between empowerment of employees versus control by management, which can result into more control than less (Stohl & Cheney, 2001).

Two forms of organizational power should be taken into consideration: systemic power as a permanent form and episodic power, which occurs occasionally (Fleming & Spicer, 2014). They can be distinguished further by their nature. Systemic power is found to take the form of domination and subjectification, whereas episodic power results from coercion and manipulation (Fleming & Spicer, 2014). It is coercion when power is directly exercised by individuals to make other individuals do things they otherwise would not do. Manipulation is used to set limits in which an individual can act or determine which issues are termed acceptable, an implicit form of power execution. No open form of coercion or manipulation occurs in domination since only certain preset values are accepted. Even more subtle, subjectification influences an individual's self, identity, and emotions (Fleming & Spicer, 2014).

Identity theory for studying paradoxical tensions

Identity work plays a key role for individuals coping with paradoxical identity tensions. This study therefore uses identity theory as a lens to explore the coping mechanisms that arise when employees try to engage in EGB. Identity is defined as "the categorization of the self as an occupant of a role, and the incorporation, into the self, of the meanings, and expectations

associated with that role and its performance" (Stets & Burke, 2000, p. 225). A person is formed by several identities, ranked in a hierarchical way with the most salient identity to be enacted (Morris, 2013), i.e., a given identity will be active at a particular time. However, the identity considered most important is not always chosen when people have a behavioral choice among identities (ibid.). Furthermore, expectations that are formed around a particular identity form a particular standard, which in turn guides a certain behavior. An existing incongruence between the input of a situation or the environment and the held identity causes distress and results in a change of behavior (Burke, 1991).

In light of perceiving paradoxical tensions and when organizational actors feel the need to create coherence and distinctiveness of the self to avoid cognitive dissonance (Festinger, 1957), identity work is found to be enacted by means of embracing, negotiating, or rejecting roles (Sveningsson & Alvesson, 2003). Identity work further describes the efforts of individuals to form, maintain, fix, and repair their identity (Ghadiri et al., 2015). Even after entering and socializing in an organization, identity work continues (Kreiner et al., 2006). Hence, identity work acts as disciplinary power through means of self-regulation (Alvesson & Willmott, 2002) to form an "ideal employee self" (Fleming & Spicer, 2014, p. 24).

Stets (2005) pointed out that emotions play a key role in identity enactment. He stated that more positive emotions work as a confirmation of one's identity and therefore strengthen one's identity,

whereas identities that result in negative feelings are found to be played out less often. This also appears in cases of identity incongruence, in which upheld meanings in situations cannot be played out. Identity incongruence in situations consequently leads to negative emotions, whereas identity congruence leads to positive emotions. If an outcome of an activity re-enforces a person's identity it will show in positive emotions. If it fails to do so, a person will react with negative emotions (Stets, 2005; Stryker). Consequently, emotions indicate "how effectively one's role identity is played out" (Stets, 2005, p. 40).

Paradoxical identity tensions consequently arise around paradoxes of belonging, as has been shown for CSR (Ghadiri et al., 2015) and sustainability managers (Carollo & Guerci, 2018). Kreiner et al. (2006, p. 1034) defined identity tensions as "stresses and strains experienced by an individual in relation to the interaction between her or his personal identity and a given social identity." Three types of identity tensions need to be distinguished: (1) a tension between the actual and aspirational self, (2) a tension between the self and a part of the self that one doesn't identify with, and (3) a tension in hybrid identities (Ghadiri et al., 2015). In order to achieve identity congruence, organizational actors respond with handling strategies to address paradoxical identity tensions (Smith & Lewis, 2011).

Methods

The original idea set out for this study was to explore the possibilities to engage in EGB, and the challenges faced in doing so by environmentalists at their workplaces, rather than paradoxical tensions, per se. However, while recording and analyzing the

environmentalists' stories of their experiences with EGB, more and more tensions surfaced, which consequently led to this study. Using a qualitative research approach, I aim to contribute to the literature on EGB (Ciocirlan, 2016; Dilchert & Ones, 2012; Ones & Dilchert, 2012b) and, in particular, the paradox literature in corporate sustainability (Bansal & DesJardine, 2014; Hahn et al., 2015; Hahn et al., 2018). To do so, a paradoxical lens is used to explore the appearance and perception of the existing paradoxical tensions, as well as the ways of how people trying to engage in EGB cope with them.

Data collection and selection

The data were collected as a part of a bigger research project running from 2013 to 2016 which was funded by the German Federal Ministry of Education and Research. The data collection was done by a team of two senior and two junior researchers, including me. The interviews were semi-structured following a common interview guideline. Questions during the interviews circled around private and workplace-related environmental activities. The interviewees were asked about their motivation and opportunities to engage in EGB, as well as about major barriers to such endeavors. To get to know about the work context, the interviewees were asked to describe their perception of the environmental orientation of their company (e.g., "What role do renewable energy and other environmental activities play in your organization?"). In addition, interviewees were asked about their self-identity, and the questions finally addressed how the interviewees felt that they or their

engagement in EGB was perceived by others. In particular, the focus of this study was to address employees who were involved in activities to protect the environment or solve environmental problems individually or in groups in their free time, because they could be considered ideal members of the workforce to engage in EGB because of their intrinsic motivation to do so. They defy the assumption that EGB needs to be initiated in a top-down manner (Graves & Sarkis, 2018; Wesselink et al., 2017). From the original 41 interviews, people who were self-employed or worked in the public sector (e.g., school teachers) were excluded from the analysis. This resulted in 24 face-to-face interviews with green employees (Ciocirlan, 2016; Renwick et al., 2013) (see Table 1).

Table 1 Profile of interviewees

No	Name*	Male/ Female	Age**	Job	Company Size	Industry	Private Environmental Activities
1	David	M	60–65	Farming consultant	25,000	Chemical	Member of a network for renewable energy
2	Michael+	M	60–65	Software engineer and manager+	Unknown	IT	Active member of the Green Party
3	Peter	M	40–45	Business economist	3,000	(Renewable) Energy	Renewable energy supporter
4	Sarah	F	40–45	Sustainability manager	10,000	Mining	Eco-friendly lifestyle***
5	Charlotte	F	25–30	Environmental manager	10,000	Mining	Eco-friendly lifestyle, Master's Degree in Environmental Management
6	James#	M	55–60	Engineer	15,000	Energy	Member of Anti-Nuclear Movement, wind energy pioneer
7	Benjamin	M	40–50	Employee	100,000	Telecommunications	Owner of a passive house
8	Anna	F	45–50	Employee	9 (branch)	Geographical services	Beekeeper, eco-friendly lifestyle
9	Sally	F	45–50	Employee	35,000	Banking	Eco-friendly lifestyle, supports two African foster children, takes garbage from the office home to recycle
10	Patrick	M	45–50	Engineer and project manager	4,500 (branch)	Energy	Seller of Fairtrade chocolate, active supporter of a project supporting homeless kids, eco-friendly lifestyle
11	Sophie	F	Unknown	Employee in corporate development	4,000	Insurance	Eco-friendly lifestyle
12	Elizabeth	F	40–45	Employee in process management and IT	25,000	Chemical	MBA with focus on sustainability, eco-friendly lifestyle
13	John	M	30–35	Employee in sust. department (retail industry)*	41,000	Retail	Eco-friendly lifestyle
14	Luke	M	50–55	Environmental manager*	100,000	Telecommunications	Anti-Nuclear Movement
15	Dylan	M	30–35	Employee in transformation management	100,000	Telecommunications	Eco-friendly lifestyle

16	Andrew	M	40–45	Employee in consumer goods company	5,000	Food	Renewable energy supporter
17	Susan	F	60–65	Accounting and HR manager	50-200 (estimated)	Manufacturing	Greenpeace activist
18	Scott+	M	60–65	Product manager	4,000	Manufacturing	Activist of an environmental group
19	Thomas+	M	60–65	Controller	170,000	Automotive	Renewable energy activist
20	Emily	F	30–35	Employee	400	(Renewable) Energy	Eco-friendly lifestyle
21	Hannah	F	30–35	Sales manager	30	Consumer Goods	Eco-friendly lifestyle
22	Cecilia	F	50–55	Production worker	30	Consumer Goods	Eco-friendly lifestyle
23	Robert+	M	60–65	Technician+	20,000	Energy	Green activist and member of a renewable energy cooperative
24	Liz	F	30–35	Sociologist	700	Institute	Green activist

#today self-employed; +retired

*All names have been changed to protect the anonymity of the interviewees; **Age estimated; ***If not further specified, an eco-friendly lifestyle includes a combination of the following behaviors, among others: purchasing of organic food; vegetarian/vegan diet; use of public transportation or biking and no possession of a car, or possession of hybrid or e-car; purchasing green electricity; recycling at home; donating to environmental groups; home with photovoltaic panels

The interviewees were recruited by contacting environmental groups and NGOs, through personal contacts and the snowball method. The interviewees had different, but mostly non-managerial positions and worked in sectors including mining, manufacturing, energy, banking, insurance, the chemical industry, and telecommunications. The variety of workplaces surely enriched the dataset. However, this comes with the caveat that triangulation of the individual company context was based on an individual opinion with the exception of the interviews by Sarah and Charlotte, Luke and Dylan, and Hannah and Cecilia, who respectively worked for the same companies. All names have been changed to protect the anonymity of the interviewees. The interviews lasted on average a little over 1 hour: the shortest interview was 31 minutes and the longest was 1 hour 38 minutes. All interviews were recorded and fully transcribed, amounting to 800 pages of transcript and 25 hours of recorded time. All interviews were in German. I translated the individual quotes used in this paper. A native speaker was consulted on my translations.

Data analysis

The qualitative analysis was performed with the data analysis software MAXQDA Analytics Pro. The coding followed the procedures described by Miles and Huberman (1994), Saldaña (2015), and Gioia et al. (2013). Different coding methods were applied as they were considered appropriate to the study's goals. I thereby followed multiple stages of analysis: First, I started with structural coding that "acts as a labeling and indexing device, allowing researchers to quickly access data likely to be relevant to a particular analysis from a larger data set" (Namey et al., 2008, p.

141). This was done to reduce the data and concentrate on relevant passages for further analysis. Second, the data analysis concentrated on the identification of paradoxical tensions (Smith & Lewis, 2011). Therefore, linguistic clues, emotions, and comparisons between observations in the data and the literature were identified (see Table 2). In particular, I looked for emotional responses (e.g., sighing, laughing) and coded ironic and sarcastic descriptions as well as humor (Jarzabkowski & Lê, 2017) experienced by the interviewees. Additionally, I looked for language clues (e.g., "me versus them," "yet," "but") in the data (Andriopoulos & Lewis, 2009; Smith, 2014). This resulted in a row of first-order codes using informant-centric terms (Gioia et al., 2013). Third, after performing open coding within-cases, I then moved on to a cross-case analysis (Miles & Huberman, 1994). Literature was consulted to refine codes, which led to the building of theory-based second-order themes (see Appendix A1). Finally, I integrated the codes and themes to build dimensions (Gioia et al., 2013) and integrated the findings in a theoretical model.

Table 2 Examples of paradoxical tensions

Exemplary Quotes	**Coding**	**Paradox Indicator**
I feel a little bit like in a spacecraft. I always think [sighs] that I have to go there super dressed … and then I get the feeling that I have to pretend or that I have to play a role … (Anna) *I often got to hear that I am intrinsically motivated [laughs]. That was more of an accusation, but for me that was an honor [laughs]. (Sarah)*	Feeling of being an outsider Insult hedged as compliment	ME vs. THEM HUMOR Belonging tensions
And then I needed to decide, either career and money or environmental protection [laughs] …. In retrospect, I'm not sure if that was the right thing to do [laughs]. Well, definitely not good for the money. (Luke) *So, at the moment, I am currently trying to teach them that you can shut off the printers in the evenings. There is no gain in leaving them on during the night. (Sally)* *I have worked on that for quite some time, however, relatively unsuccessfully: that you can also print paper on the back, if it is about internal prints. That's quite difficult, because you need to press one additional button and then another one, and that's a bit, that's additional work, that one doesn't like to do. (Sally)*	Doubts about career decision Ironic descriptions of colleagues' attitude to EGB	HUMOR IRONY Performing tensions
If one already read the logo [of the nuclear power producer] on the bill, that made [me] internally aggressive, and because of that I wanted to change something about it. (Peter)	Change vs. status quo	ME vs. THEM

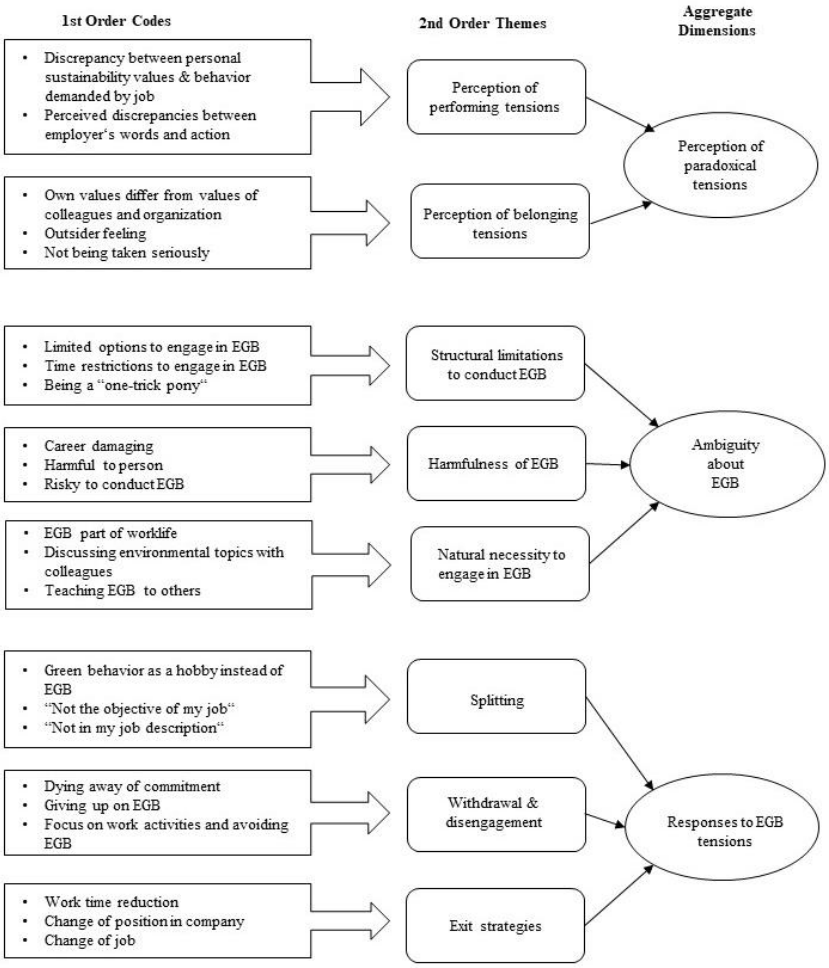
I once had a quite heated discussion about coffee capsules [with a colleague]. [They] are a red rag for me because I think it is totally perverted that you are ready to pay for some aluminum-welded coffee capsules, a total environmental sin, just because it is more convenient to push them into a coffee maker. Researcher: *How did this discussion end?* *It stayed open, he, I believe, keeps buying his coffee capsules, and I keep buying my Fairtrade coffee. (Elizabeth)* *When we book business trips, you see, the flight from X to Y means, I believe 0.26 tons of CO_2 emissions, and then once I asked: What does [name of employer] do [with that]? I sent an email—in the intranet you find the contact persons for all the different sections/departments and I chose to write to the person who deals with the CO_2 emissions and CO_2 offsetting. Never received an answer, I also find that a pity. (Elizabeth)*	Clashes because of different opinions on actions	EMOTIONAL RESPONSE: Anger, Disappointment Performing and belonging tensions
The interaction with the company here, I have to say, …, there is no contradiction at all between my private life and life here at work. So, we are all very careful to work sustainably. (Hannah) *For me that wasn't a job, for me that was like a hobby. I was planning high and mixed voltage lines. I was asking about permission for high-voltage lines, dealing with the authorities, mayors …, nature conservation everything, I planned the routes, I also made the route protection. … It was a fantastic time. (Robert)*	Unity between private and work life	No tensions

And for me the really ingenious thing is that I now work for [a] company that also implements it honestly, but not honestly as, so to speak, because it is a market requirement, but because it arises from their own needs and I actually like that very much. (Hannah)	Company perceived as sustainable in deeds and words	
But I think we never really thought about the fact that people could also work in other companies in order to make changes from the inside, or something. … I mean: In our case—everyone consciously chose their employer, no—that's probably why they don't understand working somewhere else where it doesn't really fit, right? (Emily)	Company (branch: renewable energy) chosen consciously and fitting to employees	
I can say that for myself, the environmental issue is not why I'm here. So, it supports that and contributes to the overall entity so to speak, and I certainly prefer that to working for a [low-cost supermarket chain] supplier. So, I had a lot of regrets with that, for example, but the fact was that the employer was also good and so it was a reasonable collaboration, but the product did not flow into the channels I would have liked, especially since I am not a customer myself of [low-cost supermarket chain], I don't buy there on principle. In this respect, it is of course much more coherent or simply closer to me and to my wishes and to the areas where I want to use my workforce and my energy. (Hannah)	Previous employer okay regarding work content but not its work output as a low-cost supermarket chain disregarding sustainability	

Findings

In the first section of the findings, I address the interviewees' experiences of paradoxical tensions in their efforts to engage in EGB. In the second section, I present the findings on the ambiguity of EGB. In the third section, I present the findings on how green employees respond to these tensions. Figure 1 depicts the data structure that I refer to in the following.

Figure 1 Data structure



I found that paradoxical tensions appeared in several different situations: at an individual level in confrontation with colleagues and supervisors, and as a feeling of being an outsider who did not dare to openly talk about their environmental self-identity, or rather regretted it if they did because it led to tensions of belonging. Paradoxical tensions arose between the individual and the organization when there was a perceived mismatch between these green employees and the respective organizations in regard to EGB. Owing to feelings of power inequality and the lack of freedom to engage in EGB, employees felt stuck in their options to engage in EGB. Paradoxical identity tensions were further influenced by rigid organizational structures that allowed one role and a limited range of activities, typically an assigned set of work activities for which these green employees were hired. Apart from that, tensions arose because of a feeling of pointlessness in engaging in EGB, endlessly repeating the same again and again without achieving much or anything at all. This was often connected to a strong feeling of senselessness. In the following section I provide data for each perception of paradoxical tensions.

Perception of paradoxical tensions

Employees interested in supporting their employer to become and be more environmentally sustainable perceived paradoxical tensions in different situations. Many of these paradoxical tensions arose around the individual's environmental self-identity (and were related to paradoxes of belonging), but also resulted from performing, organizational, and learning paradoxes. However, the last two

paradoxical forms were less prominent in the data. Some of these green employees struggled with co-existing roles and/or values (Bednarek et al., 2017; Lüscher & Lewis, 2008), but also perceived paradoxical tensions related to their immediate job duties, which could include sustainability tasks. For example, performance-related paradoxical tensions arose between the dedicated work tasks of an environmental manager demanded by their employer and their individual interpretation of their job duties, e.g., to inform the public and be honest about environmental issues, instead of hiding or disguising sustainability issues.

As a consequence, paradoxical tensions became salient when the interviewees talked about their experiences with EGB. These tensions appeared in the data in the form of irony (Gylfe et al., 2019) or humor (Hatch & Erhlich, 1993; Jarzabkowski & Lê, 2017), but also in the form of frustration, anger, and sadness (cf. Table 2).

Perception of performing (and belonging) tensions. In the interviews, episodes in which performing tensions were mentioned by the interviewees, also belonging tensions could be identified in the data. In most cases a combination of paradoxes of performing and paradoxes of belonging could be found. This particular paradox combination has been described as a "clash between identification and goals as actors negotiate individual identities with social and occupational demands" (Smith & Lewis, 2011, p. 383). In the following two quotes, it can be seen that performing tensions arose around business travel, company

goals, and company expectation that did not match with employees' green beliefs and agenda:

> *The new company goals and guidelines for the company were presented in a company meeting, where it [company's green idea] was mentioned, but not exactly in detail. But only some slides were shown and presented. For the next year. Whereas many things are unrealistic [laughs].*
> Researcher: *What's unrealistic?*
> *What it said there, well, these company and sales goals, because this financial restructuring process drags on quite a lot. And I fear, that then maybe, maybe the implementation of that green idea will suffer under that, that they look at more "important" things, that the company survives and only a few new investments are made, regarding the green area. Clearly, where money can be saved, then yes, to make the production more efficient, but I don't know if that green idea really is in focus. (Peter)*

The interviewees further perceived paradoxical tensions resulting from paradoxical acts by their employer. For example, organic products were sold in the company shop, but at the same time the company was known for producing genetically modified seeds—the opposite of organic production:

> *So, what I noticed recently, for example, which I found super crazy and totally ironic: At the canteen there is an employee store and, as I said, we are talking about a company that produces genetically manipulated seeds. And in this employee store, however, there are organic products, i.e., all really serious organic companies like [title*

of organic brand] and I don't know, so they, as employees, don't want to eat this genetically manipulated stuff, but it is sold by their own company on a large scale in countries where it is possible. In Europe, this is not possible, it is forbidden, but in the USA, Brazil, I don't know…on a large scale, but one then reaches for the organic product in the employee store. So that's what I found now [laughs]. (Elizabeth)

The discrepancy between her (environmental self-identity) and the way Elizabeth's employer displays contradictory behavior in regard to (environmental) sustainability can easily be taken from this quote. Now I will move on to further elaborate on the perception of belonging tensions.

Perception of belonging tensions. Paradoxical identity tensions are found to originate from paradoxes of belonging (Smith & Lewis, 2011) and appeared in the data in descriptions about feeling misunderstood, the feeling of being an outsider or being excluded, or being confronted with biases because of their EGB and environmental self-identity. There were several instances during the interviews where the green employees engaged in individual sensemaking and identity work. The existing paradoxes made them question their role in the company as well as their behavioral response. Actors are prone to overreact and focus on one pole when confronted with paradoxical tensions, which in turn creates a stronger pull from the opposite pole (Lewis, 2000). The paradoxical tensions appeared around the individuals' feelings of being too pragmatic or being too different from work colleagues. It reached the point where they heavily questioned their belonging to the company

and their ability to perform according to their personal standards and values. The paradoxical identity tensions manifested in "me versus them" descriptions, the perception of being an outsider, a feeling of not belonging to the organization, or of being misunderstood, as can be taken from the following quote:

> *For example, they [colleagues] talk about the nature protection law and then it is totally ridiculed. And then you sit there and think: "Something is wrong here" [laughs]. You have to learn that other people tick differently. And at some point, you simply say, "Okay, they are different from me"—they think differently—and somehow you have to deal with that. It is not that they are silly or not nice to me or shitty to me, it is simply that from their basic structure they are different. And if that's missing there is no rational exchange [with them possible]. (Charlotte)*

In the following section, I will present the second aggregate dimension.

Ambiguity of EGB

While looking more closely at the descriptions of the green employees' experiences with EGB, a picture started to emerge that can be referred to as "ambiguity of EGB". This ambiguity stems from positive attitudes toward EGB and the intrinsic motivation to engage in EGB of these green employees on one hand, but on the other hand, interviewees conveyed fears that their EGB results in damaging their career and/or negatively impacts on their relationship with colleagues, and supervisors. The following section will highlight these findings.

Analyzing the data, I found that green employees apply doublethink, i.e., they hold two opposing and contradictory views on the same activity (El-Sawad et al., 2004). For example, flying is described as bad (for the environment) and good (for managing your workload in the assigned time) (cf. Table 2), or regarding behavioral freedom: “I don't want to sit higher and design more freely. I can really design very, very freely.” (Sarah)

There is also the case of Dylan. He worked for a big, internationally operating corporation. As a green employee, on one hand, he saw an advantage in working for a big corporation because of the bigger potential for green ideas and the possibility to achieve more than if he was an external activist demonstrating for his cause. On the other hand, he perceived paradoxical tensions and was aware of the limitations of working for a big corporation in which his green ideas were not welcome:

> *I think it is also a motivation for me, or can also be perceived as a motivation, that of course you also have a lever with such a large corporation. I mean, in my private life, if I were to go out on the street and hold up a poster saying “Don’t waste mobiles,” people would say, “What does he want from me?” But let’s assume that I continue to do this for another 5 years and that it has an impact, so let’s assume that it does now, that’s always difficult. […] Working in a group is always totally nebulous, you don’t know what effect it has, but assuming that it has had an effect in the [country], that I have said this again and again, have written it again and again, have created awareness for it again and again, then that’s tens of billions, where you’ve saved billions*

> *of dollars, where you've saved waste in principle. And that's just a huge lever with such a huge corporation, if it works, I don't know. (Dylan)*

As can be taken from this quote, green employees are motivated by the hope that they can be a source of change at their workplace. However, this hope is often shattered by the fact that many attempts to achieve a certain environmental goal have been unsuccessful. Partly, green employees attribute this to limitations that are set by the organizational structures, but also to individual persons, such as supervisors. The following section will highlight the structural limitations that impact on EGB.

Structural limitations to conducting EGB. As previously observed by Berti and Simpson (2019), the handling of paradoxical tensions is not fully defined by oneself but rather limited by a variety of factors. The data analysis showed that hierarchical limitations, i.e., work roles with specifically assigned tasks, result in tensions of not being able to freely engage in EGB. Green employees reported that the reason they were hired was not to engage in EGB, and that getting into EGB would cause them trouble. One point mentioned was that they would not be able to manage their individual workload (e.g., compared to flying, taking the train would be the preferred option, but this was impossible because the time taken would mean that the workload could not be completed). Another reason that was mentioned was that engaging in EGB would be harmful to their career. Consequently, they were coerced into a pre-designed role:

> *There are not really any possibilities, you are a one-trick-pony, you focus on one trick or one area which you can do well and intensify that but you don't have a broad spectrum of tasks … . I try to reach out to the [sustainability] area, but partly it is really frustrating that you cannot sidestep or go in that direction. (Elizabeth)*

Apart from that, there was the recognition that a single person has limited possibilities and the possibility of success depended on the position in the company or of being part of a bigger entity or group of people:

> *[I am always] looking for gaps, because in the end I have such an idea of where I, not necessarily where I want to take this company, I'm not sitting high enough for that. But what I think is justifiable and what I want to bring about. … I think that if you had the ambition to make a DAX company, regardless of which one, even those that are excellent, really, truly sustainable, I don't think you could manage that … generally speaking. (Sarah)*

In a Kafkaesque sense, the individual is trapped in a vicious circle of rules and regulations and is dependent on them (Clegg et al., 2016). In a highly organized entity, every task has its place, is assigned to a certain department and individuals are assigned to conduct specific tasks. However, if the department responsible for EGB existed and at the same time did not implement or support EGB (because it was perceived as being the wrong place to go to if ideas for EGB came up) it created a paradoxical moment:

> *"Yes, it's a great idea, sounds totally exciting, there's also the Corporate Social Responsibility department, why don't you talk to them?" But they are totally with blunt knives, well, if they have knives, they are blunt. So, who talks to them? (Dylan)*

It can be concluded that interviewees' paradoxical tensions resulted from the Kafkaesque organizational setting that inhibited the implementation of EGB. As a result, engaging in EGB was likened to pointlessness and an impossibility. Mostly the impossibility was seen in the organizational structure and hierarchies, and the basic assumption was either that an individual green behavior had long been executed, or that a greening activity only worked if it was initiated by the top management:

> *Although I took many attempts to get onto the roofs of [Company X], and to build a photovoltaic system there, after all, I had this giant reference project here in my hometown. And I never succeeded there and I had many discussions with the whole corporation, I was on the roofs all over Germany, but always in the end when it climbed up the hierarchy, then the acceptance became less and less. And my thinking today is that I say, either it comes from the top and it is a "we want that," but to fight your way through from the bottom and then to get a contract in such a company for 20 years [life time of PV system] is [pause], well [pause] [it] was not crowned with success in my case. (Thomas)*

After a PV system was successfully installed on the company's roof, one of the organizers described that this was only possible because the way for it was paved by the company's recent sustainability plan and the company's support:

> *And the company's sustainability plan came along, which of course also got my managing director at the time behind the project. Because naturally you need an advocate very high up, otherwise it won't work. … I believe that it would not have been possible politically without it. If the major direction wasn't like that, and it wasn't like that in the past, which, as I said, isn't something we had 10 years ago, then it wouldn't have worked. (Andrew)*

Next to structural limitations that impacted on the conduction of EGB, interviewees described the negative aspects of engaging in EGB, leaving them with feelings of frustration or disappointment. The findings will be described in more detail in the following section.

Harmfulness of EGB. Interviewees found EGB harmful either to their career or themselves as a person. In several instances they likened engagement in EGB to bodily harm. The following two interview sequences contain descriptions of pain as well as other limitations that impacted on EGB:

> *It's always like a game, so do you feel like burning yourself again? So, I mean, apart from that the day is also very limited and the number of hours is also very limited and if you are already too busy with work, whether you have time to do*

> *something else is very difficult again. But I try to address it [green topics] again and again and bring it up again and again, such topics, so I don't use 50 percent of my day for that, no, not at all, but I try to address it with a suitable person every now and then to get awareness for it again. (Dylan)*

Dylan described his fruitless trials and then took the view of his supervisors who would never take a risk for an unknown opportunity, such as a project directed at environmental protection:

> *I always run against walls. It's not welcome, it's not well received. Because as a large corporation, if you go too far, you can always lose. If you do nothing, you do nothing wrong! That's an exaggeration, but that's when you have a hundred balls and can shoot three of them, and you have to consider very carefully, as a supervisor, which three balls are these? … It's quite clear that it's a risk–opportunity assessment. The opportunities are not so tangible at first, and it's not worth taking risks for opportunities that are not tangible. (Dylan)*

As Berti and Simpson (2019) have noted, the handling of paradoxical tensions is not equally feasible for all, but rather depends on power relations. A rather extreme example was delivered by an interviewee who actually belonged to the board and, based on her position, presumably had more freedom to choose strategies to handle perceived tensions. Instead, she did feel great limitations on engaging in EGB. In a move to reduce the paradoxical tensions between her being business-oriented yet wanting to act pro-environmentally, she secretly bought electricity from a green, but more expensive electricity provider:

I myself am a member of the board. But it's simply not easy, because it is always about: "Everything as cheap as possible." Well, it is really not easy for me. But I stick to it and try that and I said that they simply should buy clean power. They simply should do that. … I think it is 300 euros more per year. And then I thought, why not? That will be done now. And I don't talk about that, I just do it. I can sign the contracts and nobody really knows that. (Susan)

Research has pointed out that the willingness to engage in EGB depends on supervisory and organizational support (Ramus & Steger, 2000); the data analysis also showed that the activities themselves, as well as their scale, highly depended on supervisory and organizational support. Furthermore, the impact of power inequality and the ability to choose freely on dissolving paradoxical tensions around EGB was also hindered by supervisors or company rules and regulations. Some interviewees reflected on their dependency on direct supervisors for engaging in EGB, especially if they went beyond smaller activities, such as shutting down computers, turning off lights in empty rooms, saving water, they needed the support and approval of direct supervisors. Others likened their dependencies to coercion or the impossibility of acting according to their own will:

It was not really the case that I was constantly pushing it. I was always looking to see when does it fit, when would such a window open, where you can go back in. And above all, does my supervisor enjoy it or does it bother him. That was actually the main topic. … I had different superiors. Everyone thought

renewable energies were good and everyone wanted more. But then it was different, they didn't really do anything else [laughs], they had other things to do. But at least they didn't put any obstacles in my way, actually they weren't particularly helpful either. It was more like: "Do it. If it works, good, if it does not, also good." (Luke)

There was a perceived coercion to give in to work demands instead of being able to apply EGB. In the case of Anna (see Appendix Table A1) the tensions were caused by the recognition that there was a need to fly and "do your thing" and in case of opting out and choosing the environmentally friendly alternative of taking a train, the workload could not be fulfilled. Sustainable alternatives were hence not feasible because of the workload. This resulted in the paradoxical tension that if you were to fly, it would not be okay because of the environmental harm caused; if you were not to fly, it would be equally bad because one could not fulfill one's workload. Consequently, this led to coercing one green employee to give in to flying although she preferred the environmentally friendly alternative of taking the train.

An extreme form of organizational domination was reported by Emily. She worked for a producer of renewably energy. Commonly the company offered shares of their renewable energy projects to the public, and she and other colleagues always wanted to buy some. However, since the shares were not affordable for them, the company's CEO suggested that the employees founded their own employee cooperative:

For us it is the other way around, because our board of directors simply said: "Now do it. And how far are you now with your

> *cooperative?" [Laughs] ... We already work a lot. ... In our contracts it says so nicely: at least 8 hours. Well, we have to work at least 40 hours a week, so it's at least 8 a day. And I usually work from 9 a.m. onwards. And so does everyone else. So, you don't really have much time to set up a cooperative along the way. (Emily)*

Apart from the perception of paradoxical tensions, and the ambiguity of EGB, I formulated a third aggregate dimension "responses to paradoxical tensions".

Responses to paradoxical tensions

The responses to paradoxical tensions of green employees are described in the following section. Three major lines can be distinguished: purely personal consequences, mostly affecting oneself (individual sensemaking), consequences that appeared between the green employees and supervisors and colleagues, and consequences that could also be felt directly or indirectly by the organization (e.g., disengagement of workplace green activity, work time reduction, or change of position).

As a consequence of the existence of paradoxes, employees develop handling strategies to be able to deal with the paradoxical tensions and to create some form of relief (Keegan et al., 2019a; Lewis, 2000; Smith & Lewis, 2011). In one way, actors form defenses to paradoxical tensions to be able to cope with negative feelings (Lewis, 2000.). This usually leads only to a short-term relief from

the existing paradoxical tensions (Jarzabkowski et al., 2013). In another way, actors can also decide to handle the tensions in a proactive style, i.e. accepting the paradoxical tensions and thus creating a long-term solution to the existence of paradoxes (ibid.).

The data entailed a range of coping strategies. At one end, employees reacted with suppression or splitting of paradoxical tensions, which resulted in thinking of work time reduction to have more time for their real passion, or even more drastically, they focused on exit strategies with the aim of leaving their workplace for good. The proactive and long-term focused responses showed some forms of opposing and accepting. However, that often implied secrecy about their EGB to avoid confrontation with their employer.

Proactive handling strategies of paradoxical tensions

Aiming for virtuous cycles, paradox theory favors proactive responses since they create the possibility of creativity and long-term solutions (Smith & Lewis, 2011). Proactive strategies among green employees include persistence in achieving environmental goals but also opposing and questioning of existing organizational ways of doing things.

The following quotes describe interviewees' proactive handling strategies and include strategies of accepting, adjusting, and opposing (Jarzabkowski et al., 2013; Lewis, 2000; Smith & Lewis, 2011). Accepting can be described as exploring tensions, tapping into their potential energy and working through them (Smith & Lewis, 2011). Adjusting means to recognize opposing poles, acknowledge and achieve both poles (Jarzabkowski et al., 2013). Opposing means that

two parties work towards opposing ends, each fulfilling their own needs in a way that occasionally ends in a head-on confrontation (ibid.).

Green employees took proactive strategies to enable EGB. Although paradoxical tensions existed, they tried to fit in or adapt to their work environment. To achieve this, pragmatism was applied as a coping mechanism:

> *Because when I do sustainability here, in the company, why did I join a company, because I believe I can give something. If I sit in the headquarters of a multinational, …, where can I achieve more, should I stay in front of it with a banner or do I sit here and have daily discussions. Here I am in a mining company, highly exciting for sustainability. From my point of view, all topics of the sustainability discussion must be addressed here, some are more important than others or bigger and have more impact. But basically all [have an impact]. [I] find that totally fascinating and having these not always nice discussions constantly, this is my drive. And I am happy when we move a little bit forward in certain areas. (Sarah)*

Defensive handling strategies

The defensive handling strategies oscillate between suppressing, splitting, and denying paradoxical tensions (Jarzabkowski et al., 2013; Lewis, 2000). Suppressing is used for describing moments when one element is overridden in favor of the other element of the paradox (Jarzabkowski et al., 2013). Splitting involves the temporal or spatial separation of contradictory elements (Lewis, 2000; Poole & van de Ven, 1989). Denial or repression happens when the awareness of

paradoxes and subsequent tension is blocked (Lewis, 2000). The handling strategies ranged from denial (realizing that one's own job contributes to environmental damage) to negative consequences for one's career and the impossibility of achieving something on their own to a full separation between work and private environmental activities and commitments.

We're building steam turbines for big power plants. … coal plants, combined power plants, nuclear power plants. Everything that is big. And everything that causes a lot, yes damage, that's the wrong word. Well, that has a big impact on the surroundings. And what we have seen with the Energiewende in Germany, it obstructs the development of renewable energy. The more conventional electricity I have, the less electricity from renewable energy fits into the net. Of course, it could [fit more electricity from renewable energy] but then the bigger power plants are not profitable any longer, no one buys any longer power plants. Bad for my job [laughs].

Researcher: *That's a real dilemma. How do you cope with it or what do you do with that?*

I tell myself, at the moment, we are not ready yet, to produce all electricity from renewable energy. That's because mostly we cannot save electricity properly. Because of that, power plants that are fast and always available are needed, at least for the lifestyle that we allow ourselves. Because of that the power plants and the steam turbines that we build are needed, and fulfill somehow their purpose. But what bothers me is that there is no long-term strategy, neither political nor from the company to get away from conventional power plants. Well, we notice that we sell fewer power plants. Actually, the

need to act is there, but I don't see that this is somewhere implemented—not politically, not economically. (Patrick)

The defensive handling strategies and the limitations to cope with paradoxical tensions lead to different consequences for affected employees, but also their employers. The data analysis revealed a range of consequences.

Consequences of defensive handling strategies to paradoxical tensions

Interviewees worked through various paradoxical tensions, which resulted in mostly defensive responses (Jarzabkowski et al., 2013; Smith & Lewis, 2011). The strongest responses were found in splitting, withdrawal, and exit strategies, which are presented in the following.

Splitting

In a set of interviews, the responses to paradoxical tensions took the form of splitting, a temporal or spatial way of separating tensions (Poole & van de Ven, 1989). Being confronted with being unsuccessful in engaging in EGB, some interviewees focused on their private environmental activities and discontinued and defended their non-engagement in EGB:

Well, I have not started here to do something with sustainability. That's not the aim of my job or the job description. And to be honest, there's no point in getting worn out, and to bang your head against the wall all the time. Except that I beat my head bloody, for I am in the wrong place. Actually, as I said, that's not the point of my job

and I knew that all along, that I can't achieve anything in that regard with this position. Let's say that wasn't my goal. (Elizabeth)

Withdrawal and disengagement

The data analysis further revealed a set of defensive handling strategies that green employees implemented in response to the perceived paradoxical tensions. In line with previous research by Tracy (2004) that stated that unattended tensions led to withdrawal behavior, one of the observations was that green employees gave up on engaging in EGB. Loss of motivation, exhaustion, and not being able to engage in EGB were given as individual reasons why they disengaged from EGB. The following quotations illustrate this point:

It is more like it doesn't matter anymore. Personally, I don't have that commitment any longer to change anything. And you are into your job, in your flow and yes, the idealism falls by the wayside. (Peter)

The following quote is from a sustainability manager who decided to change her job when she could not achieve her desired sustainability goals:

That's very exhausting, I notice, that's really very exhausting. On a regular basis I am happy about something, but often I am also angry about something, But I don't despair… At some point I reach the point where I think that my possibilities to change something are too low for me, then I have to draw consequences. Well, I decide that then I won't do anything anymore. (Sarah)

In the most severe cases, green employees focused not only on the withdrawal from EGB, but from taking distance from their jobs. I summarized this behavior under the term “exit strategies”.

Exit strategies

Because of their inability to find adequate, pro-active handling strategies to paradoxical tensions (Poole & van de Ven, 1989), green employees tried to reduce their working time to be able to do environmental activities in their free time, which led to a separation between work and private environmental activities. Others aimed for or already had changed their position in the company, while others applied for different jobs in a more sustainability-oriented company or used any possibility to exit their workplace for good. Regardless of their response to paradoxical tensions, negative consequences resulted for them (e.g., no longer being a full team member), and/or for the organizations (e.g., by losing employees). The following quotes illustrate these points:

> *I could imagine very well or what I’d find very nice is to further reduce my work hours. I have 90% now. … 50% would be fantastic but then I am not a full team member any longer. (Anna)*

However, before exit strategies were taken, interviewees tried to work through paradoxical tensions in different ways. After an attempt to move to a position that would be a better fit failed, one interviewee contemplated that she would then focus on leaving the company for good:

> *And that’s why at the moment I’m once again trying to apply and get a job somewhere else, so that I can just, well, I’m just not*

giving up on it, I want this idea of being on the road to somewhere more sustainable or in [the field of] social responsibility for a company somewhere, that's what I'm trying to do. I also applied internally for another job, but unfortunately, I failed there, which I think is also due to the fact that my boss, of course, wants to keep me in the project, for which he hired me, and that …, so at least one position, that would have actually been a great fit for me, then I would have been an in-house consultant again and would have been able to illuminate and redesign processes with regard to their sustainability, that would have been great. I think I was too well suited to the job, because then, I was just honest and told my boss that I had applied, because of course at some point internally you start asking for references, and maybe I shouldn't have been so honest, I don't know, but, so then the rejection came relatively quickly. I don't even want to accuse my boss of having done that, but I know that he had just communicated it to the project management and I suspect that someone had pulled some strings and that then—bang—the rejection came pretty quickly, yes. So that was actually a bit of a pity, because that would have really rounded off the picture, that would have been great for me and yes, good. But now my boss risks losing me altogether. (Elizabeth)

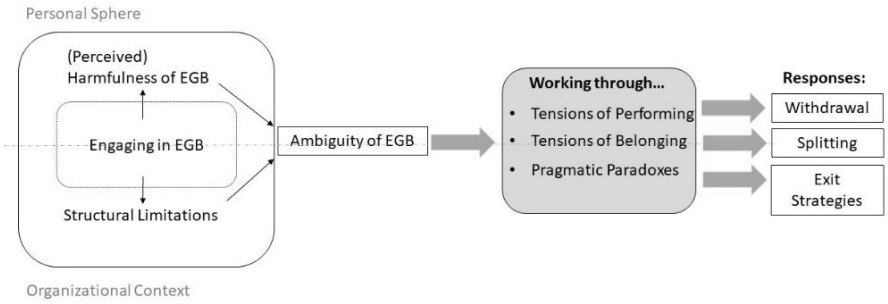
This very detailed quote illustrates the result of the structural limitations for green employees to handle their paradoxical tensions. After being rejected for a position that would have allowed the interviewee to meet her personal interest of (environmental)

sustainability, she is left with her old position and paradoxical tensions. As a result, she considers leaving her job, and to find a more fitting position elsewhere.

Discussion

This study set out to inquire about the paradoxical tensions green employees perceive in their efforts to engage in EGB and how they respond to these tensions. While engaging in EGB, interviewees reported structural limitations, but also perceived engaging in EGB as harmful. Although these green employees are motivated to engage in EGB, they hold ambiguous views on EGB: on one hand, they focus on the achievement of their environmental goals, on the other hand, they notice negative impacts on their career, and/or relationship to colleagues, and supervisors. The findings further show that green employees mostly perceive paradoxical tensions of belonging and performing (Smith & Lewis, 2011), but are also confronted with pragmatic paradoxes (Berti & Simpson, 2019). Responses to the tensions among the interviewees varied, yet there are strong observations of negative responses (Smith & Lewis, 2011), such as separation (e.g., withdrawal or disengagement from EGB), splitting (focus on greening activities outside of work), or exit strategies (e.g., reduction of work hours, change of position within organization, or change of job). The study's findings resulted in the building of a theoretical model (cf. Figure 2).

Figure 2 Theoretical model



The data analysis supports the assumption that employees are confronted with structural limitations and limited agency in their efforts to engage in EGB (Heikkurinen et al., 2021; van Marrewijk, 2003). As partly noted in previous research, the limited agency ranges from limitations set by the organization (e.g., work activities are specifically assigned to certain positions, which often exclude EGB) and the general organizational context (Norton et al., 2012; Ruepert et al., 2016; Strauss et al., 2017), dependence on supervisors (Ramus & Steger, 2000), and other parameters affecting the possibility of engaging in EGB (e.g., general workload, EGB as a career breaker).

The data analysis further reveals that, in particular, the perceived difference between green employees and their colleagues, supervisors, or the organization itself can be profound. The question of how to keep one's individuality while being part of a group (Lewis, 2000) is causing paradoxical tensions. Green employees often resort to "me versus them" descriptions and describe a profound feeling of being an outsider. This outsider metaphor, which has been described before for sustainability managers (e.g. Carollo

& Guerci, 2018; Wright et al., 2012), is fueled by feelings of not belonging, or being coerced into "being" someone else ("I arranged myself a bit"). This in return can cause new paradoxical identity tensions and is displayed in the form of self-accusations ("Sometimes I think I am too flexible with what I tolerate").

The perceived tensions stemming from paradoxes of performing cannot easily be separated from the paradoxes of belonging; rather, they seem to go hand in hand. Paradoxes of belonging and paradoxes of performing overlap to form belonging–performing paradoxes (Jarzabkowski et al., 2013; Smith & Lewis, 2011), since the performing of EGB is triggered by the green employees' environmental self-identity and the aim to act accordingly.

In trying to cope with paradoxical tensions triggered by EGB, green employees often use defensive handling strategies (Smith & Lewis, 2011). In particular, their lack of agency generates defensive responses (Berti & Simpson, 2019). Upon receiving mixed messages while trying to engage in EGB, green employees feel misled regarding what their organizations claim they do for climate and environmental protection and what they actually do.

I found that the organizations express their power in various ways - thus limiting the handling strategies of green employees -, such as coercion (e.g., supervisor laughs at employee's green ideas), domination (e.g., company car policy only offers standard models with combustion engines or no car at all), or subjectification (e.g.,

employees trying to be more pragmatic or arranging themselves with non-sustainable solutions to respond to paradoxical tensions). In particular, the underlying organizational domination (Fleming & Spicer, 2014) puts green employees' coping strategies under strain and easily leads to withdrawal from EGB, or exit strategies. In this study, this can be seen in the form of worktime reduction ("I'm now in the process of reducing the time I spend in the 'club,' the time I spend there every day"), or the strict separation between work and private activities by engaging in environmental activities only in their free time. Looking at the chosen handling strategies of green employees, it is clear that a lack of agency results in defensive responses (Berti & Simpson, 2019). Defensive responses take the form of splitting (private environmental engagement versus EGB), suppressing, e.g., through denial ("My employer, I can't tell them anything, they know 10 times better"), or withdrawal.

Green employees made various contradictory observations and hold contradictory views themselves. In the literature, different types of contradictions are distinguished (El-Sawad et al., 2004): contradictions between organizational policy and practice, contradictions between different accounts of organizational members, and doublethink. Green employees experience contradiction between policy and organizational practice: "On top of everything it says 'living the green idea', but so really recognizing that—I can't" (Peter); and engage at the same time in doublethink "However, there was this internal competition now where you could enter [green] ideas, some were actually awarded" (Peter). As pointed

out by Berti and Simpson (2019), doublethink is formed by the contradiction between professional and social identities. It is problematic in so far as it impacts on the individual self and affects the individual's aim for coherence (Festinger, 1957).

Overall, the handling of tensions is highly influenced by decisional autonomy (Berti & Simpson, 2019). Many responses are directly or indirectly influenced by the organizational context. In this case, complying means pursuing organizational expectations, but failing to pursue personal goals; challenging the organizational status quo means risking professional opportunities. Unlike top managers, low-level managerial or non-managerial staff have only limited resources, networks, or influence to freely engage in EGB. This group of employees depends highly on the support of supervisors or management. This might explain why some green employees engage in hidden and secretive EGB to avoid discovery and confrontation with their supervisors. As a consequence of limited handling options to paradoxical tensions, green employees either disregard their own green spirit ("idealism dies"), or opt for exit strategies: in the mildest form, this means reducing working time and, in the strongest form, leaving the company for good (Hirschman, 1970, cited in Ciocirlan, 2016).

This paper thus makes the following contributions to the existing literature: First, it extends previous theoretical findings on the harmfulness of EGB (Ciocirlan, 2016). This "counterproductive" EGB has mostly been described in organizations from a financial point of view. However, in my study, the harmfulness of EGB is

connected to the person and their job. More explicitly, EGB is considered harmful to one's career or is feared to lead to the non-achievement of work goals, thus leading to contract termination. This study further shows that green employees hold ambiguous views on EGB. On one hand, they describe their various attempts and activities, yet on the other, they are well aware that EGBs are harmful to their career or relationships with supervisors. Emotional responses like fear and anger indicate that green employees perceive paradoxical tensions, however, do not find handling strategies that suit them better and being paralyzed in vicious cycles (Pradies et al., 2021), while other green employees use humor as a low-risk form of handling paradoxical tensions (Hatch & Erhlich, 1993; Jarzabkowski & Lê, 2017).

Second, by applying a paradox lens, this study shows that engaging in EGB is hindered not only by barriers (Yuriev et al., 2018), but also mixed messages (Berti & Simpson, 2019; Lüscher & Lewis, 2008). It can be stated that it is not only CSR managers (Ghadiri et al., 2015), sustainability managers (Carollo & Guerci, 2018; Wright et al., 2012) or HR managers (Keegan et al., 2019b), along with middle (Lüscher & Lewis, 2008) and top managers (Jarzabkowski et al., 2013), but also other groups of employees who face paradoxical tensions. This paper fills this apparent gap when it adds another group of employees—non-managerial staff and employees in lower management positions, like specialists, technicians, and lower-tier white-collar workers who are also environmentalists—to the paradox field of research.

Extensive identity work results from paradoxical tensions. In particular, the paradoxical identity tensions of belonging can be observed among green employees. Similar or the same kind of paradoxical identity tensions that were observed before among CSR and environmental managers (Carollo & Guerci, 2018; Ghadiri et al., 2015; Wright et al., 2012) apply in this setting, too. However, not all green employees' perceptions and handling strategies allow the conclusion that they suffer from paradoxical tensions. Similar to the findings made by Allen et al. (2015), some green employees live with apparent paradoxical tensions.

Conclusion

This paper was aimed at inquiring into paradoxical tensions in EGB. This data reveals two major findings. First, it shows that paradoxical tensions arise around EGB. Among the interviewees who aim to engage in such activities, many suffer from paradoxical tensions. This can be seen in the emotional, humorous, and ironic responses of the interviewees. Paradoxical tensions perceived by green employees lead to a variety of different responses. Depending on contextual factors and degrees of freedom, dealing with paradoxical tensions is done in a proactive fashion in some cases, while most engage in defensive responses. Responses to paradoxical tensions also include denial and repression of paradoxical tensions. Defensive responses range from hidden and secret behaviors to avoid confrontation or career drawbacks, to totally giving up on engaging

in any EGB, to even more drastic responses in the form of different exit strategies.

Limitations and Future Research

Although the study's main focus was on exploring the paradoxical tensions that green employees perceived while engaging in EGB, this study was not designed as a paradox study per se. When the data were collected, the idea was to focus on the barriers to EGB as they were perceived by green employees. The paradox theory lens was used ex post to understand and explain the tensions and contradictions that emerged during the data analysis. Future studies could address this point and create a more fitting study design that more strongly focuses on paradoxical tensions in EGB. Although this study tried to capture the organizational context, it cannot offer triangulation insight of the green employees' workplaces. Since the organizational context is found to have a major impact on the perception and handling of paradoxes (Berti & Simpson, 2019; Smith & Lewis, 2011), future micro-level studies of paradoxical tensions should include the organizational context in more detail. Studies would also gain from inquiring into individual degrees of freedom to engage in EGB and decision-making in more detail, since these factors are found to affect the way employees respond to paradoxical tensions. An interesting but disregarded observation is about the different perceptions of paradoxical tensions in EGB between male and female green employees. Future research in the field of paradox research and also research on EGB might explore this in more detail. Since EGB is perceived as positive and needs to

be fostered (Alt & Spitzeck, 2016; Carrico & Riemer, 2011; Graves et al., 2013), future research should also address the harmfulness and ambiguity of EGB.

Practical implications

This research shows that there is a need for awareness of paradoxes in all sustainability activities in companies and at all organizational levels. Paradoxes are made visible through paradoxical tensions, which can cause negative emotions in affected employees, but can also be a source of creativity and change (Aust et al., 2017). Regarding EGB in companies, paradoxical tensions can be used by organizations to surface and discuss sustainability issues as well as tap into the creative forces of their green employees. If existing paradoxical tensions stay unattended and employees find no satisfying response, there is a risk of losing out on employees' potential, commitment or even losing the employees to more fitting, sustainability minded competitors or employers.

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Appendix

Table A1 Data supporting interpretations of second-order themes

Perception of Paradoxical Tensions		
Perception of performing tensions	*And then the whole flying thing. You just had to really fly there and once in a while I took the train to Sweden, but it was simply, well, like that you cannot manage the program. You really have to see how is the travel time and then you fly, do your thing and fly back. I find that somehow totally crazy. (Anna)* *He expected that now "she" will switch from her SEAT to a BMW or such. … There was some lack of understanding. "How come?" … And naturally, they would not even consider to offer an e-car [as a company car]. Only standard models are allowed. "Here it's simply not like that." (Elizabeth)* *And as I said, I tried to apply for a job, but otherwise I don't see many opportunities to influence things, especially in IT consulting, where it's difficult. So, what is probably already done, are such small things: Screen savers that put the PC to sleep after a certain time in order to save energy and the printing options are optimized so that not so much toner is blown and not so much paper is wasted, so that, for example, the printers all print on both sides by default, these are such small things, yes, but, well, they might make a difference, but otherwise, I think, in such a large corporation you are usually a pretty small cog and, yes, have few opportunities there in the team. (Elizabeth)*	

	"Throw this [harmful sulfuric acid] in the trash." I say no. "You dump this in the trash." I say no, I don't. I say, and if you dismiss me here, I say, I can't, don't put that in the container. I say, first of all the whole area will be contaminated and the garbage collectors. I say they will be vitriolized and everything. So that's where I started war. … Well, he could have threatened me with dismissal, I wouldn't have cared, that isn't okay at all! Especially in a company, where we work with natural products, etc. That doesn't fit at all. … It was a one-time thing but it was extreme. … Some [specialized] company came later on and picked that up. He [supervisor] gave in. He had to. (Cecilia) *And … it got so far that because I kept clashing with corporate lobbying, that in 2008 sales was a unique absurdity in the entire electricity industry in Germany. [Laughs] The [company's]sales department got its own lobby department, which I managed. And I was allowed to collect all green topics with the obligation that I just keep my mouth shut on the topics of nuclear power and lignite. (James)* *Well, exotic is just, for example, would be—so I've never suggested, I wouldn't even dare, in this carnivorous company—a vegetarian day in the canteen. Something like that would be extremely exotic. (Charlotte)*
Perception of belonging tensions	**Feeling of not belonging/outsider feeling:** *Sometimes I think I don't belong here. (Susan)* *Some think that I am a weirdo. (Susan)*

	In my case, the people [at work] don't even see the connection between a vegan diet and the environment. For them, one thing has nothing do with the other. (Sophie) *[After 10 years of working for this company] I had a crisis, so psychologically, a kind of burnout and yes, things have changed a little bit. I thought that I have to become more pragmatic, because before I was always worried that I am with this company and actually I wanted to do something completely different. They don't build bombs or so, actually it is totally okay, right. (Anna)* *So, for the basic/common work [activities], he's supporting me. But if I then have any exotic ideas —which are simply exotic for him—then I'm laughed at….. (Charlotte)* *My supervisor is actually completely in line with me. That was a problem with one project [laughs]. He has changed now, but the one before that, who was his superior, who I was having lunch with a week or two ago. And then he found out that I am a vegetarian. And I think that somehow swept him off his feet. He couldn't understand that people are vegetarians. And that he knows one now … . Above all, on the other side of him it turned out that there was also a vegetarian. [laughs] "You all just want my meat." [laughs] … Yes. It was really funny. Some are quite surprised that for example there is life without meat. There are also people who I think are surprised that people like me can be in the power plant. (Patrick).* *I have a scientific background and … let's say pure business people are not scientifically attached, they think primarily of the turnover. … There are/were clashes with pure business people.* (*David)*

	I believe, I am pretty value-driven. I can very well accept that others have other values. But there are other things that I don't like to do urgently and then I reach a limit. So, when my values aren't accepted and I am not let alone then. So, I really need a terrain where I can move, am allowed to and should [move]. I cannot describe that very well. (Sarah) *I think that's always the problem that one thinks: eco-companies are also social. … Which is not the case at all. So, I think: our employment contracts just meet this minimum standard that one is allowed to do. And we're slowly developing from 24 vacation days to 25 or 26 vacation days. And it is precisely this passage that says "you have to work at least 40 hours a week, and overtime is included in your salary, unless you work infinitely too much for 6 weeks at a time." So, you can understand that the boss doesn't want a works council. But he is also, so he also says: He is approachable. (Emily)*
Ambiguity of EGB	
Structural limitations	*You are a fighter and then you envision the aim, you make your influence here, you are too practically oriented that this chance is missed, you have to use this chance and make your influence. [I] don't claim I achieved anything, you can do that only with a massive team and one alone achieves nothing, you need to be a bigger entity to be able to achieve something in this way. (David)* *I didn't do that much in the firm for the firm [regarding sustainability]. They had their own department—an environmental department. … And as I said: The firm organizes once a year EHS [environment health safety]. That's one week where … they inform employees about something. As there was this energy story, it was about energy saving. And we [environmental group] would have been allowed to put up posters, if we had one. [Laughs] (Scott)*

	If I could decide freely, I would do that differently. (Susan) *I believe that you shouldn't do sustainability in a company and think that the company is perfectly sustainable [in a short time]. It is about, to really see what are from a theoretical point of view, the most important topics. And for me it's always important to work that out collectively, because otherwise … I can sit down here now for 2 weeks and then it [sustainability report] is done, everything is done, the whole strategy is done and so on—totally useless. There is no value in that, that's why the processes are longer. … I have to go through the processes, have to explain the causal mechanisms for some time and such things. (Sarah)* *So, let's say if I present that [green idea] to my employers, I can't tell them anything, they know 10 times better than I do. Well, … we are not a fries stand I would say, there are … experts sitting there … who think anew every day about how to solve the energy problem … and I can't help them any further. So, I'll just say that as far as my employer is concerned … zero, I can't exert any influence. (David)* *Here it's organized like that, I can start nothing. I can only discuss with colleagues. Let's say I send an email to the board or to employees of board members and say, wouldn't you like to consider saving energy, I bet I will receive an email where it says, this has long been done, we informed about that two years ago. I will walk against a wall. … It is too far developed, and the ones that deal with it, I think, I don't have to show them anything or that I have to push them, I don't think so. No, in such a big company, everything is organized from top to bottom, they don't need me to teach them how to walk. (David)*

	Well, I would like to make the topic [sustainability] a little more [of] a topic for us, but as I said … I'll try to win my boss over because he does employer relationship management and all these topics as well now, and I will first see if he sees an opportunity to maybe move it forward a little more. … I think it also depends a little on his personal interest. Because that's what you do when it's important to you, and I can't really assess that yet. (Sophie)
Harmfulness of EGB	*If I get engaged [in green workplace behavior] now and use my time, to get into other areas somehow, that would not do anything for me, except that I get into trouble, because I would not achieve my work objectives. (Elizabeth)* *Actually, actively, in the job I would not actually do that now. I really have an assload full of work. And, well, there is no time here now, somehow. So, there are enough other things that, I think, would be expected to be taken care of rather than doing something like that. (Benjamin)* *Sometimes I think that I am too flexible with what I tolerate. Subconsciously I follow an internal guideline which I don't overstep. And anytime it gets crossed, I do everything [so] that this doesn't happen. For example, in this situation, at several instances I said we can't write that, but it returns just like it was. Then I say at that point: "You tried everything but when we write it like that like it will be read over." … I find that very annoying. … Then I think, that I must be more radical. … The result would be that I wouldn't say anything for much longer. And nothing is gained with that. … I cannot describe it in words properly, but somehow that's how it is. It's always this searching for gaps, because in the end I know where I would like to lead this company to—not really that, for that I don't sit high enough—but what I find justifiable and what I want to achieve … a more conscious dealing with sustainability. (Sarah)*

Responses to EGB tensions	
Splitting	*I arranged myself there [at her workplace] a bit and [I am] pragmatic and yes, I live a bit in two worlds. … The other world is quite a business world, I think. Sometimes I think, that I got off at the wrong station [laughs]. (Anna)* *It was always possible during that time, as long as I was working at [car company], that I made my living and in the free time I did my hobbies. (Thomas)*
Withdrawal/Disengagement	*So, I don't see why I should be totally frustrated now. You just completely ruin yourself. I'm now in the process of reducing the time I spend in the "club," the time I spend there every day. Then I'll notice less of it. Then I'm sure I'll feel better again [laughs].* Interviewer: *So, you're working full-time now?* *I'm full-time at the moment and then I'd like to go part-time starting in the fall. (Sally)*
Exit strategy	*It was more an orientation to elsewhere and to apply somewhere else. … I thought of nature protection or becoming an environmental protection officer. Something like that. (Anna)* *And then [a local energy provider] hired me … . And at least there was cogeneration, but still no nuclear power, no lignite, but then [employing company] was bought by [energy provider which sources from coal and nuclear power]. Then I suddenly found myself back in a lignite nuclear power company. That was just without question not my choice of things. … And at the same time it was like that, that friends from early days founded a solar company … . And it was clear that I actually wanted to go back there. (James)*

	[Car company] undertook an enormous rationalization. In the areas in which I worked, 30 percent of the employees were released and then, then of course I took the opportunity. … I already had job offers from solar companies at the time, there was an incredible boom here in Germany, and then, then it was actually only out at [Car company] and then [I] made my calling into my profession. (Thomas) *But then with half the position—that was of course great. So, I really reduced it to 50 percent because: I think it was only fair to the employer that he could buy another half-job, or bring someone new into the team. And then it relaxed a lot, no. … Oh what can I say? I don't know what the last year—or the last 1 1/2 years—have done to me. [Sighs,] But I am very happy. (Liz)* *Certain basic things must be there. And they change over time … but when the overall conditions don't fit any longer, then I leave. There is this: love it, leave it or change it. And if you wear down in trying to change [the company], then it's the time to leave. (Sarah)* *I have applied externally before. So, not only internally, but also externally 1, 2 years ago or so. (Patrick)*

Chapter 4 – Paper 3

Paper 3

The role of environmental self-identity, supervisory and organizational support in predicting employee green behavior

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The role of environmental self-identity, supervisory and organizational support in predicting employee green behavior

Abstract

Individuals' social-psychological mechanisms have a significant impact on employee green behavior. However, the influence of environmental self-identity has been neglected so far in studies on employee green behavior. This study investigates the organizational and psychological mechanisms leading individuals in organizations to engage in employee green behavior. Therefore, the conjoint influence of environmental self-identity and supervisory support toward the environment on the relationship between perceived organizational support and employee green behavior are examined. Results from a survey of 744 employees from different organizations suggest that high levels of environmental self-identity weaken the influence of supervisory support on employee green behavior and when supervisory support and environmental self-identity are low no relation between perceived organizational support toward the environment and employee green behavior could be identified. The highest impact on employee green behavior can be reported for environmental self-identity. Theoretical and empirical implications of the findings are discussed.

Keywords: Employee green behavior, environmental self-identity, perceived supervisory support toward the environment, perceived organizational support toward the environment

Introduction

Environmental degradation and the problems caused by a changing climate continue putting pressure on societies and business organizations across the globe. Business organizations are considered to be a significant contributor to these negative developments (United Nations, 2021), yet can remedy their impact through pro-environmental programs (Testa et al., 2014; Testa et al., 2017). Research on corporate greening has identified that employees play an important role in the success of environmental programs such as ISO14001 in particular (Boiral, 2007) and corporate greening in general (Andersson et al., 2013; Andersson & Bateman, 2000; Temminck et al., 2015). Employee green behavior (EGB) at the individual level was identified as a means to establish environmental sustainability in organizations (Norton et al., 2015). EGB has been defined as "scalable actions and behaviors that employees engage in that are linked with and contribute to or detract from environmental sustainability" (Ones & Dilchert, 2012, p. 87). Prior research has grouped EGB into abstract and specific behaviors (Francoeur et al., 2021). This study refers to the abstract form of EGB and uses the subscales of eco-helping and eco-civic engagement of the organization citizenship behaviors for the environment (OCBE) scale developed by Paillé and Boiral (2013). While eco-helping encompasses behaviors such as the encouragement of colleagues to behave in an environmentally friendly manner and to develop ideas directed at environmental issues, eco-civic engagement refers to participating in organizational environmental events and being informed about environmental initiatives at work (Paillé & Boiral, 2013).

Research in the field of corporate greening has advanced our knowledge of the influences of various personal and organizational factors on EGB. Among the organizational factors, perceived organizational support (Ramus, 2001), perceived supervisory support (Raineri & Paillé, 2016; Ramus & Steger, 2000), organizational green policy (Ramus & Steger, 2000), and leadership behavior (Cheng et al., 2021; Graves et al., 2013; Graves & Sarkis, 2018) have been found to play a particularly important role in encouraging EGB (Paillé & Raineri, 2015; Ramus & Steger, 2000; Robertson & Barling, 2013). However, individual factors are considered to play an equally important and influential role in EGB. Attitudes (Baker et al., 2014), identification with nature (Schmitt et al., 2019), motivation to perform sustainable behaviors (Graves & Sarkis, 2018), environmental beliefs (Raineri & Paillé, 2016), and personal norms (Ciocirlan et al., 2020) have been identified as predictors of EGB. These individual factors are considered as playing an equally important and influential role in EGB as organizational factors.

Two aspects deserve further attention and have been so far neglected in studies on EGB. First, one recurring point of criticism refers to the lack of studies that combine individual and organizational factors in studies on EGB (Lo et al., 2012; Raineri & Paillé, 2016; Starik & Kanashiro, 2020). The second aspect refers to the dominance of studies that explore the role of attitudes, beliefs, motivation, and norms in explaining EGB (Baker et al., 2014; Bissing-Olson et al., 2013; Ciocirlan et al., 2020; Graves & Sarkis, 2018). Regarding the first critique, most studies have isolated either individual factors or organizational factors, with the exception of a few studies that included both (Alt & Spitzeck, 2016; Paillé & Raineri, 2015). Another exception is the study on recycling

behavior in a health organization, in which Tudor et al. (2007) included attitudes as individual determinants, and organizational culture as an organizational determinant. Graves and Sarkis (2018) found that environmental leadership behavior as well as internal motivation with strong environmental values facilitates EGB.

Regarding the second critique, prior research on green behaviors outside of the workplace started to explore the role of environmental self-identity (EnvID) in explaining such behavior (Fielding et al., 2008; Whitmarsh & O'Neill, 2010). Research on identity theory found that self-identity is indirectly and directly linked to behavior (Biddle et al., 1987). EnvID is a psychological, intra-individual determinant that has been used as a predictor and moderator in studies on green behavior outside the workplace (Carfora et al., 2017; Fielding et al., 2008; Whitmarsh & O'Neill, 2010). The influence of social identity on sustainable workplace behaviors has been explored in a study by Carmeli et al. (2017). In cases where employees' beliefs align with their organizations', it was found that employees' identification with their workplace indirectly increases their engagement in sustainability-related behaviors (Carmeli et al., 2017). With the exception of a few studies (Ruepert et al., 2016; van der Werff et al., 2021), researchers have so far neglected to study the relationship between EnvID and EGB (Ciocirlan, 2016). Unlike pro-environmental behavior in the private sphere, green workplace behavior is influenced by various organizational determinants, such as organizational support (Lamm et al., 2015), supervisory support (Ramus & Steger, 2000), and green policy (Raineri & Paillé, 2016). Therefore, the observation of

organizational determinants demands the inclusion of individual variables to explain EGB and vice versa.

By exploring a model that investigates how EnvID and perceived supervisory as well as organizational support influence EGB, this study aims to address these gaps. Considering the conjoint influence of EnvID and supervisory support as a moderator on the relationship between organizational support and EGB, this study functions as an extension to previous findings on the impact of EnvID on sustainable behavior in the private sphere (Carfora et al., 2017). Although similar antecedents, such as environmental beliefs (Raineri & Paillé, 2016), attitudes (Bissing-Olson et al., 2013), or values (Whitmarsh & O'Neill, 2010) have been investigated before, this study offers a new explanation for the role of EnvID in the execution of EGB. Since self-identity is seen as something that a person can grow into by repeated behavior, it persists and might even override attitudes: “Once such a role identity becomes central to the self, the importance of attitude and norms in determining behavioral intention diminishes” (Charng et al., 1988, p. 316). By exploring both individual and organizational determinants, this study thereby tries to respect workplace-specific influences, such as supervisory and organizational behavior, on EGB. Therefore, a three-way interaction has been calculated: perceived supervisory support toward the environment (PSS-E), environmental self-identity (EnvID), and perceived organizational support toward the environment (POS-E) are studied as independent predictors of EGB. My research is guided by the following research question: To what extent does the conjoint interaction between EnvID and PSS-E affect the relationship between POS-E and EGB?

The study makes the following contributions to research in the field of corporate greening. First, by studying the influence of EnvID on EGB under the influence of perceived supervisory and organizational support toward the environment, this study extends previous findings on EnvID to green behavior in the work context (Gatersleben et al., 2014; van der Werff et al., 2021; Whitmarsh & O'Neill, 2010). Second, in considering individual as well as organizational determinants, this study tries to address the call for more studies combining social-psychological and organizational factors to explain their influence on EGB (Lo et al., 2012).

The remainder of this paper is organized as follows: In the next section the theoretical background and the study's model are presented. This section also contains the development of the research hypotheses. In the Methods section, the research methods and analytical procedure are laid out. This is followed by the Findings section. The implications of the study are discussed in the Discussion section.

Theoretical framework

Research on corporate greening has made a convincing case that EGB leads to more effective greening processes in organizations and thus improves environmental performance and contributes to environmental sustainability in organizations (Andersson et al., 2013; Daily & Huang, 2001; Paillé, 2020). Under the framework of identity theory, this study explores the conjoint role of EnvID, POS-E, and PSS-E in predicting EGB.

Previous research has found that EnvID is found to play an decisive role in predicting green behavior (Ciocirlan, 2016; Whitmarsh & O'Neill, 2010). Self-identity is about the description of oneself, which might include values attached to that self. By definition, “through the process of categorization or identification, an identity is formed” (Stets & Burke, 2000, p. 224). Whether an identity leads to a certain behavior depends on the salience of a particular identity. Research suggests that the more relevant an individual identity is, the more likely it is that the identity-congruent behavior is enacted (Laverie & Arnett, 2000). Self-identity fulfills two purposes: differentiation from others and confirmation of one’s set of values, beliefs, and behaviors, which re-enforces positive emotions (Christensen et al., 2004). Identity theory is thus not only about individual choices, but includes the context or social structure in which a person is embedded (Stets & Biga, 2003). Stets and Burke (2000) stated that self-identity is only played out if it is activated, and that depends on the individual’s structural embeddedness or commitment: “The more persons one is tied to by holding an identity (i.e., the greater the embeddedness of the identity in the social structure), the more likely it is that the identity will be activated in a situation. In brief, the stronger the commitment, the greater the salience” (p. 230).

An EnvID implies that actions are in accordance with the self, that is, being a person who acts in environmentally friendly ways, and while doing so, establishes consistency between the individual parts of a person’s self and their behavior (Festinger, 1957; Whitmarsh & O'Neill, 2010). Depending on the salience and strength of a person’s self-

identity, he or she is thus more likely to act in a pro-environmental way (van der Werff et al., 2013). In previous studies, self-identity has been identified as predictor and mediator that influences greening behaviors outside of work (Fielding et al., 2008; Gatersleben et al., 2014; Stets & Biga, 2003; Whitmarsh & O'Neill, 2010). For example, in a study on recycling behavior, Nigbur et al. (2010) concluded that the identity of being a "recycler" enhances recycling behavior. A recent study by van der Werff et al. (2021) suggested that a stronger EnvID increases the likelihood of employees engaging in green behavior. Cheng et al. (2021) concluded that EnvID can function as a moderator between psychological ownership, i.e., if employees feel a connection to their workplace and feel responsible for the organization. Thus, I predict that environmental self-identity (EnvID) is positively related with EGB (H1).

In workplace settings, POS-E and PSS-E especially are found to encourage EGB (Cantor et al., 2012; Paillé et al., 2019; Raineri & Paillé, 2016; Ramus, 2001; Ramus & Killmer, 2007; Ramus & Steger, 2000). In general terms, perceived organizational support is formed by the organization's concern about their employees' well-being and the organization's acknowledgment of their contributions (Eisenberger et al., 1986). In this study, its narrower form POS-E is used (Lamm et al., 2015). POS-E is defined as "the specific belief held by employees concerning how much the organization values their contributions toward sustainability" (Lamm et al., 2015, p. 209). When employees feel supported by their organizations they are more likely to engage in EGB (Manika et al., 2015; Ramus, 2001). Consequently, POS-E

functions as a facilitator for EGB. Thus, based on findings in previous research (Lamm et al., 2015; Paillé & Raineri, 2015; Ramus, 2001), I predict that POS-E is positively related with EGB (H2).

Perceived supervisory support is another relevant predictor of EGB (Paillé et al., 2019; Paillé et al., 2020; Raineri & Paillé, 2016; Ramus & Steger, 2000). The probability of employees engaging in greening behaviors was found to rise with the regular support of their supervisors (Ramus & Steger, 2000). PSS-E refers here to "the employee's belief that the supervisor provides subordinates with the resources and feedback needed to participate in environmental initiatives'' (Cantor et al., 2012, p. 37). Studies have shown that supervisory and organizational support are linked. Eisenberger et al. (2002) found that they are linked by the supervisor's organizational status and through a temporal link that supervisory support precedes the perception of organizational support. Other studies have reported reliable relationships between these two concepts (Rhoades et al., 2001; Yoon & Thye, 2000). In her study of eco-initiatives, Ramus (2001) found that supervisory behaviors are key to encouraging EGB.

Owing to their position in the organizational hierarchy and their role, individual supervisors play a decisive role in shaping and encouraging EGB (Cantor et al., 2012; Graves et al., 2013; Graves & Sarkis, 2018). However, in the same way they are able to encourage EGB, they are also able to discourage any attempts to engage in EGB (Cantor et al., 2012). A study by Cantor et al. (2012) confirmed that high levels of PSS-E make it more likely for employees to also perceive

organizational support for EGB. This makes PSS-E crucial for employees who attempt to engage in greening behaviors.

In this study, it is thus assumed that PSS-E does not directly influence a person's behavior but affects a person's self-identity, which in turn leads to the desired behavioral outcome. Identity researchers refer to self-identity in explaining behaviors that are guided by how persons perceive themselves (Sparks & Shepherd, 1992; Whitmarsh & O'Neill, 2010). Previous research has pointed out that identity has a greater influence on behavior than attitudes when a specific role identity dictates a certain behavior (Charng et al., 1988). If a preferred self-identity cannot be lived out it is possible that the affected identity is devalued (Pratt et al., 2006) and a person adapts to a social identity (Brown, 2015, 2017). My theorizing thus suggests that the perceived supervisory support affects the living out of one's preferred identity. Thus, I expect that the three-way POS-E × EnvID × PSS-E interaction positively predicts EGB (H3).

However, a self-identity that is contrary to the existing organizational identity can lead to identity tensions. Individuals who perceive a mismatch between their preferred identity and their organizational identity try to work out their identity tensions (Kira & Balkin, 2014). In the worst case, if personal identities do not match with organizational identities, employees may decide to leave their work for good. Only identities that match with organizational identities lead to positive outcomes: if a personal identity and an organizational identity match, employees are found to thrive (Kira & Balkin, 2014). In several studies, the identity tensions of sustainability managers with their work environment have been picked up (Carollo & Guerci, 2018; Ghadiri et

al., 2015; Wright et al., 2012). Carollo and Guerci (2018) found in their study on 26 sustainability managers that, in particular, the double demand of work-related business goals and their personal values regarding social and environmental goals caused tensions. To a certain extent, PSS-E can balance out a low EnvID. However, only if EnvID and PSS-E are strong do they have an impact on the relationship between POS-E and EGB. Thus, I predict: Low levels of both EnvID and PSS-E will result in low EGB (H4).

High levels of PSS-E and high levels one's EnvID on the other hand increase the effect of POS-E on EGB. Thus, I predict that low levels of either PSS-E or EnvID can be balanced out by high levels of EnvID or PSS-E and vice versa (H5).

In sum, EnvID as well as the PSS-E and POS-E are relevant for EGB. The influence of EnvID depends on the organizational context, which is studied by the concept of PSS-E and POS-E. My hypotheses are as follows:

Hypothesis 1: EnvID is positively related with EGB.

Hypothesis 2: There is an overall positive effect of POS-E on EGB.

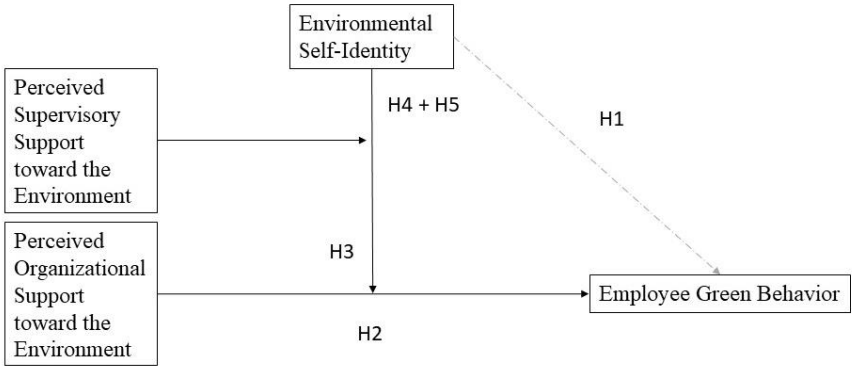
Hypothesis: 3: The three-way POS-E × EnvID × PSS-E interaction positively predicts EGB.

Hypothesis 4: Low levels of both EnvID and PSS-E will result in low EGB.

Hypothesis 5: Low levels of either PSS-E or EnvID can be balanced out by high levels of EnvID or PSS-E and vice versa.

I propose the following model (see Figure 1):

Figure 1 Proposed conceptual model of the hypothesized three-way interaction effect between perceived organizational support toward the environment (POS-E), environmental self-identity (EnvID), perceived supervisory support toward the environment (PSS-E), and employee green behavior (EGB)



Methods

Sample and procedure

The hypotheses were tested using a sample of adults working in a range of organizations and occupations. The data were collected - as a part of a bigger research project running from 2013-2016 - in Germany in the form of an online survey, which was administered through an online panel (www.respondi.com). This panel provider focuses on online surveys and uses established procedures for ensuring data quality (e.g., recruiting suitable respondents, setting time stamps). For our study, the provider was instructed to apply a number of selection criteria during

recruitment. As such, inclusion criteria were set up: white- and blue-collar workers, as well as civil servants from 18 to 67 years old working in an organization with at least 50 employees. This resulted in a total sample size of 922 participants. Of the 922 questionnaires received, 178 were discarded because relevant data were missing, reducing the final sample to 744, of which 345 were women and 399 men. Additionally, gender and age quotas were applied. The age distribution of the sample was controlled to avoid selection effects, e.g., a bias of younger and more technologically adept Internet users (19% 18–25 years, 20% 26–34 years, 20% 35–44 years, 21% 45–54 years, 20% 55–64 years, and 0.5% 65 and older). Approximately 6% had worked for less than 1 year for their organization, 19% had between 1 and 3 years, 22% had between 3 and 6 years, 11% had 6 to 9 years, and the largest group of participants (41%) had 9 years or more of organizational tenure. We also asked for their employment situation: 14% had limited and 86% had unlimited contracts. Finally, 22% percent worked for organizations with 50–99 employees, 16% for organizations with 100 to 199 employees, 10% for organizations with 200 to 299 employees, 11% for organizations with 300 to 499 employees, 15% for organizations with 500 to 999 employees, 10% for organizations with 1,000 to 2,499 employees, 5% for organizations with 2,500 to 4,999 employees, 11% for organizations with 5,000 and more employees.

Measures

For all items, a 7-point Likert scale ranging from 1=fully agree to 7=fully disagree or 1=always to 7=never was applied (the scales were reserved before calculation for easier interpretation). Exceptions to that

have been indicated below at the individual measures. In all scales a "don't know" or if necessary a "not-applicable" option was added to increase reliability and to prevent participants opting for the middle category. The "don't know" and "not applicable" categories were coded as missing data. For single missing values within a scale the mean values were calculated. All items were translated to German, slightly adapted if necessary by the author, and the translation controlled by a back translation by another team member. The reliability of the scales was tested by coefficient alphas, with over .70 indicating an acceptable reliability.

Environmental self-identity (EnvID)

For the purpose of this study, an EnvID scale was developed by using items from previous research. Items 1, 2, 4, and 5 stemmed from a scale by Whitmarsh and O'Neill (2010) and items 3 and 6 from Fielding et al. (2008). The items were: (1) "I consider myself an environmentally friendly person"; (2) "I think of myself as someone who is very concerned with environmental issues"; (3) "I would be embarrassed to be seen as having an environmentally friendly lifestyle"; (4) "I would not want my family or friends to think of me as someone who is concerned about environmental issues"; (5) "I am not the type of person who would be involved in environmental and climate protection"; and (6) "It is important to me to work for environmental and climate protection in my free time." The factor loadings of item 4 (.04) and item 5 (−.05) were below the standard cutoff (Hair et al., 2010) and thus dropped. The remaining factor loadings ranged from .50 to .94. The

items formed a reliable scale (coefficient alpha=.85, M=4.57, SD=1.42).

Perceived supervisory support towards the environment (PSS-E)

PSS-E was measured by five items developed by Ramus (2001): "My immediate superior: (1)…encourages environmental initiatives"; (2) "…makes sure that employees develop environmental skills"; (3) "…listens carefully to and values inputs on environmental topics"; (4) "…gives complete and accurate information regarding environmental issues"; and (5) "…involves employees in environmental problem solving." The items' factor loadings ranged from .90 to .93. The coefficient alpha was .96, M= 3.30, SD= 1.79.

Employee green behavior (EGB)

In this study, EGB was investigated through the construct of OCBE. The scale was developed by Boiral and Paillé (2012) and belongs to the five most common measurement scales in research on EGB (Francoeur et al., 2021). OCBEs are described as "discretionary behaviors performed by employees whereby they demonstrate their willingness to cooperate with their organization and its members by performing behaviors in the workplace that benefit the natural environment" (Paillé & Boiral, 2013, p. 119). The concept of OCBE can be split into three dimensions: eco-initiatives, eco-civic engagement, and eco-helping (Boiral & Paillé, 2012). Although eco-civic engagement was considered, it was not used in the final analysis (for a more detailed explanation see below). Therefore, this study focused only on the subscale eco-helping to measure the encouragement of colleagues to

consider environmental concerns (Paillé & Boiral, 2013). Three items (1–3) measured eco-helping and three items eco-civic engagement (4–6): (1) “I encourage my colleagues to behave in a climate and environmentally friendly way in the workplace”; (2) “I encourage my colleagues to express their ideas and opinions on environmental and climate protection issues”; (3) “I discuss environmental and climate protection issues with colleagues, even if they have a negative or skeptical attitude towards the issues”; (4) “I actively participate in environmental or climate protection events organized by my employer”; (5) “I stay informed about the latest developments on environmental and climate protection issues from my employer”; and (6) “I volunteer for environmental and climate protection projects in my company.” Participants were given a “not applicable” option to indicate behaviors that they had no opportunity to perform in their workplace (e.g., in case there were no events). The “not applicable” option was coded as missing data. Coefficient alpha for all items was measured as .94. (eco-civic engagement only: coefficient alpha= .92; eco-helping only: coefficient alpha= .91). The items were measured on a 7-point scale ranging from 1=never to 7= always, which was reversed for the analysis. Items 4, 5, and 6 were dropped for analysis, because of the high numbers of respondents who indicated that there was no option to participate (N= 245), inform about latest developments (N= 245), or volunteer (N= 281) in environmental events at their workplace. The items’ factor loadings ranged from .84 to .93 (coefficient alpha: .91, M= 4.05, SD= 1.79).

Perceived organizational support toward the environment (POS-E)

Four items measuring organizational support for environmental behavior and the possibility of suggesting and implementing employees' own ideas for environmental and climate protection were taken and slightly adapted from Lamm et al. (2015). The items assessed the opportunities and freedom to engage in environmental activities in the workplace and how they are received in the organization. A 7-item scale was used to measure POS-E ranging from 1= strongly agree to 7= strongly disagree (the scale was reversed for the analysis). The items were: (1) "At my workplace I can behave as environmentally and climate-friendly as I want without restrictions"; (2) "Anyone who brings ideas about environmental or climate protection to my employer will be rewarded (e.g., through vouchers, bonuses)"; (3) "My organization does not care about whether I behave in a sustainable manner or not" (reverse-scored); (4) "At my workplace I have the opportunity to share ideas and initiatives on environmental and climate protection." Since the scale was adapted, I conducted an exploratory factor analysis using principal component extraction with varimax rotation to assess the measure's reliability. This resulted in the expected one-factor solution (Kaiser-Meyer-Olkin: .70) accounting for 53% of common variance with factor loadings between .40 and .85. Item 3 "My organization does not care about whether I behave in a sustainable manner or not" (reverse-scored) was dropped because it was below the cutoff (.40). After dropping item 3, the coefficient alpha increased. The coefficient alpha is acceptable at .73, M= 3.69, SD= 1.58. The individual factor loadings ranged from .62 to .77.

Control variables

Since demographic characteristics have been suggested as potential reasons for green behaviors (Klein et al., 2012; Lamm et al., 2013; Vicente-Molina et al., 2018), in this study the following control variables were used: gender (1=male, 2=female), age (1=18–25, 2=26–34, 3=35–44, 4=45–54, 5=55–64, and 6=65 and older), organizational size (1-4 were excluded; 5=50–99, 6=100–199, 7=200–299, 8=300–499, 9=500–999, 10=1,000–2,499, 11=2,500–4,999, and 12=5,000 or more), and tenure (1=less than 1 year, 2=1 to less than 3 years, 3=3 to less than 6 years, 4=6 to less than 9 years, 5=9 or more years). Correlations between control variables and model variables are reported in Table 1. It can be noted that age correlates with EnvID and EGB, firm size with PSS-E, and tenure with EnvID.

Table 1 Descriptive statistics, correlations, and coefficient alphas for study variables

No	*Variable*	*Min-Max*	*M*	*SD*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	
1	Gender	1–2	1.46	.5								
2	Age	1–6	3.04	1.41	−.165**							
3	Firm size	5–12	3.62	1.35	−.050	−.024						
4	Tenure	1–5	7.84	2.33	−.167**	.640**	.093*					
5	PSS-E	1–7	3.30	1.79	−.167**	−.016	.115**	−.037	(.96)			
6	EnvID	1–7	4.57	1.42	−.044	.146**	.009	.076*	.308**	(.85)		
7	POS-E	1–7	3.69	1.58	−.171**	−.041	.157**	−.017	.689**	.284**	(.73)	
8	EGB	1–7	4.05	1.71	−.101**	.109**	.019	.056	.539**	.619**	.513**	(.91)

**p < .01, *p < .05

Gender (1=male, 2=female), Age (1=18–25, 2=26–34, 3=35–44, 4=45–54, 5=55–64, and 6= 65 or older), firm size (not included in sample: 1=1–5, 2=6–9, 3=10–19, 4=20–49; included in sample: 5=50–99, 6=100–199, 7=200–299, 8=300–499, 9=500–999, 10=1,000–2,499, 11=2,500–4,999, and 12=5,000 or more employees), tenure (1=less than 1 year, 2=1 to less than 3 years, 3=3 less than 6 years, 4=6 to less than 9 years, 5=9 or more years)

Common method variance

Since the study was cross-sectional and used self-reports, I controlled for common method variance (CMV), defined as "variance that is attributable to the measurement method rather than to the constructs the measures represent" (Podsakoff et al., 2003, p. 879). To assess if CMV inflated the data, a confirmatory factor analysis (CFA) was conducted. The first CFA included all items mentioned above and the second CFA was run without the items with low factor loadings. In the original model, the hypothesized factor loadings were not all statistically significant ($p < .05$) and ranged from −.09 to .94. Therefore, items below the cutoff value of .5 (Hair et al., 2010) were removed: item 3, "My organization does not care about whether I behave in a sustainable manner or not" (reverse-scored) of the latent factor POS-E, and items 4, "I would not want my family or friends to think of me as someone who is concerned about environmental issues," and 5, "I am not the type of person who would be involved in environmental and climate protection" of the latent EnvID factor. I recalculated the model without these items. As a result, the hypothesized four-factor model indicated an adequate fit to the data (Marsh et al., 2004), a chi-square (χ^2) of 435.384 (df= 84, N= 744), an acceptable comparative fit index (CFI) of .96, an acceptable root mean square error of approximation (RMSEA) of .08, and a RMSEA confidence interval of [.07, .08] as well as an root mean square residual (SRMR) of .06 (Bentler, 1990). Previous tests to see if the data met the assumption of collinearity indicated that multicollinearity was no concern (POS-E: tolerance .52, variance inflation factor (VIF) 1.93; EnvID: tolerance .89, VIF 1.135; PSS-E: tolerance .51, VIF 1.97) (Field, 2018). Inspection of the correlation

table revealed some high correlations between variables. As such, different factor models were computed (also see Table 2). The four-factor model had a better fit than other computed models. In the case of POS-E and EGB, the two-factor solution showed a better fit (χ^2 of 13.77 (df= 8), CFI: .997, RMSEA: .03, SRMR: .02) than the calculated one-factor solution (χ^2 of 297.08 (df= 9), CFI: .872, RMSEA: .21, SRMR: .09). For EnvID and EGB, the two-factor solution also had a better fit (χ^2 of 134.82 (df= 13), CFI: .97, RMSEA: .11, SRMR: .04) than the calculated one-factor solution (χ^2 of 848.72 (df= 14), CFI: .78, RMSEA: .28, SRMR: .08). The calculated two-factor solution for PSS-E and POS-E showed a better fit (χ^2 of 95.25 (df= 19), CFI: .98, RMSEA: .09, SRMR: .03) than if both were loaded on one factor (χ^2 of 250.02 (df= 20), CFI: .96, RMSEA: .12, SRMR: .05). Thus, although POS-E and PSS-E highly correlated, for theoretical and empirical reasons, treating them as two independent latent factors was found justifiable.

Table 2 Fit indices for alternative measurement models

Model	**χ2**	**df**	**χ2/df**	**CFI**	**TLI**	**RSMEA**	**SRMR**
4-factor model	435.38**	84	5.18	.96	.95	.08 [.07; .08]	.06
3-factor model: PSS-E+POS-E, EnvID, EGB	562.70**	87	6.05	.95	.94	.08 [.08; .09]	.07
3-factor model: EnvID+POS-E, PSS-E, EGB	1200.71**	87	13.8	.88	.86	.13 [.13; .14]	.16
3-factor model: PSS-E+EnvID, POS-E, EGB	2188.94**	87	25.16	.78	.74	.18 [.17; .19]	.16
2-factor model: PSS-E+POS-E+EnvID, EGB	2305.91**	89	25.91	.77	.73	.18 [.18; .19]	.16
1-factor model: PSS-E+POS-E+EnvID+EGB	3348.17**	90	37.2	.66	.60	.22 [.21; .23]	.17

** $p < .001$

Findings

PSS-E as an independent variable, EnvID as a moderator Z, POS-E as moderator W were standardized and together with EGB as a dependent variable entered in model 3 in the PROCESS macro (Hayes, 2013) in SPSS. The overall model measures were: F(7, 736)= 129.57, p< .001; R^2= .55. The model revealed a significant effect of EnvID (β= .52, t (736)= 15.96, p <.001, LLCI= .46, ULCI= .58) and of POS-E (β= .21, t (736)= 5.86, p< .001, LLCI= .14, ULCI= .28). Hypothesis 1 and 2 could thus be confirmed. A significant effect was also reported for PSS-E (β=.27, t (736)=7.59, p<.001).

I also tested for the individual interactions. The three-way interaction between POS-E × PSS-E × EnvID was significant with β =−.02, t (736)=−2.0, p=.04, LLCI=−.04, ULCI=−.001. Thus, H3 can be confirmed. The two-way interaction between POS-E and PSS-E was not significant with β=.03, t (736)= 1.01, p=.31, LLCI= -.03, ULCI= .08, so was the interaction between POS-E and EnvID (β= .05, t (736)= 1.31, p= .19, LLCI= -.02, ULCI= .11). The two-way interaction between PSS-E and EnvID was marginally significant with β= -.06, t (736)= -1.88, p= .06, LLCI= -.13, ULCI= .003. At different levels of PSS-E and EnvID, POS-E was found to predict EGB (see Table 3).

Table 3 Interaction effects at different levels of PSS-E and EnvID on POS-E

PSS-E	EnvID	β	se	t	p	LLCI	ULCI
low	low	.08	.05	1.58	.11	−.02	.18
low	high	.28	.06	4.53	.00	.16	.40
high	low	.24	.08	3.21	.00	.10	.39
high	high	.23	.06	3.76	.00	.11	.34

high: +1SD, low: −1SD

However, when PSS-E and EnvID were low, no significant relation between POS-E and EGB could be identified. Thus, H4 cannot be confirmed. In all other cases, with either PSS-E or EnvID showing a high level, POS-E predicted EGB. However, the effect of EnvID decreased when PSS-E levels were high. The biggest effect size can be reported for low levels of PSS-E and high levels of EnvID (effect: .27, $p < .001$). At high levels of PSS-E the effect slightly decreased with increasing levels of EnvID, ranging from .24 to .23 ($p<.001$). In all other cases, the effect increased with increasing levels of EnvID (effects ranging from .16 to .25, $p < .001$). Overall, it can be said that if EnvID increases the effect of PSS-E on EGB decreases and vice versa. H5 can be confirmed.

Discussion

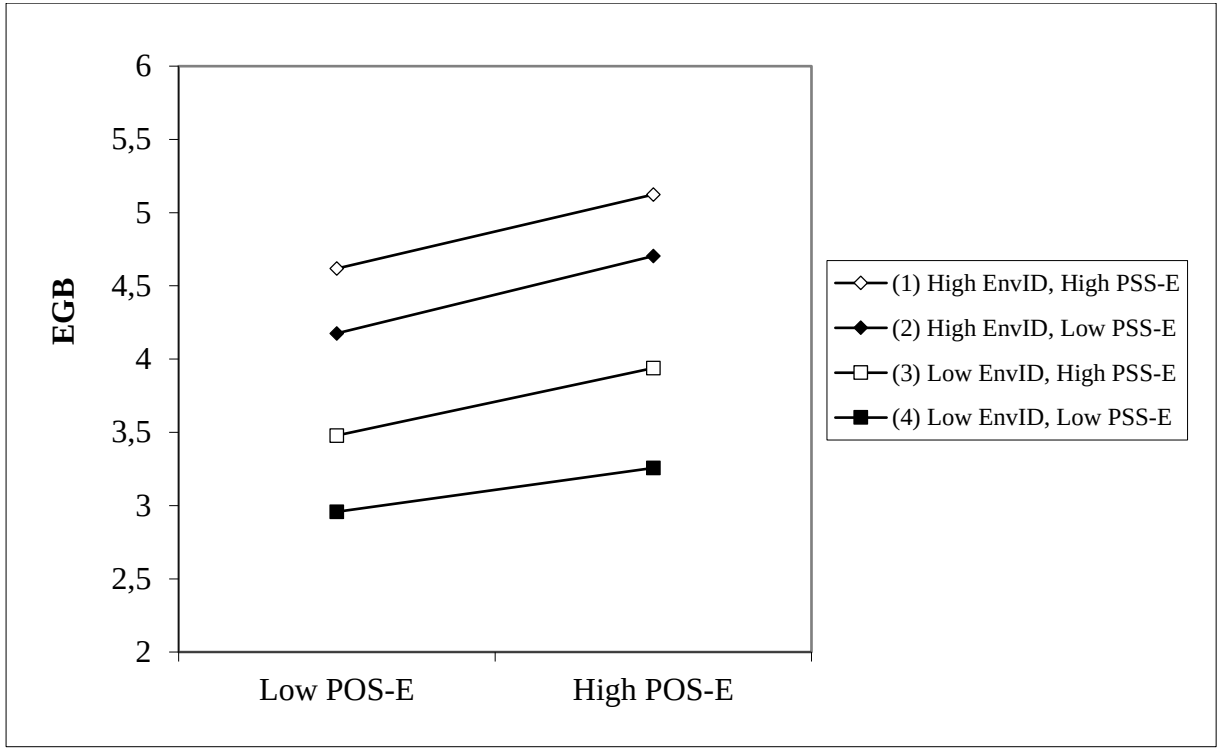
The purpose of this study was to investigate the conjoint influence of EnvID and PSS-E on the link between POS-E and EGB. Therefore, a study with a sample of 744 employees working across different occupations and organizations was conducted.

This study provides evidence that PSS-E and EnvID conjointly moderate the link between POS-E and EGB. However, it was observed that the link is rather weak and EnvID individually more strongly predicts EGB. In line with research on self-identity in predicting private green behavior (Lalot et al., 2019; Sparks & Shepherd, 1992; Whitmarsh & O'Neill, 2010) and EGB (Cheng et al., 2021; van der Werff et al., 2021), EnvID was found to be positively connected with EGB (H1). Employees with higher levels of EnvID are more likely to engage in EGB. This also confirms expectations that intrinsic motivation guides employees' green behaviors (Ciocirlan, 2016).

Analyzing the influence of organizational determinants on EGB, as expected, POS-E positively predicted EGB overall (H2), consistent with previous findings on the influence of POS-E on EGB (Paillé & Raineri, 2015; Ramus, 2001). Under the conjoint influence of PSS-E and EnvID, POS-E predicts EGB. However, the link between POS-E and EGB disappeared when a person reported low levels of PSS-E and EnvID (H4). This is unexpected since it was assumed that it would only result in weak EGB. It differs from previous findings that found that POS-E is directly related with EGB, even when moderated by psychological empowerment of employees (Lamm et al., 2015). However, the study adds to previous research that found that the relation between POS-E and EGB only holds for employees who are committed to the organization (Temminck et al., 2015) or who show environmental commitment and beliefs (Raineri & Paillé, 2016). If either PSS-E or the reported EnvID was high (i.e. the weaker one of the variables, the more positive the effect of the other variable), I expected that the link between POS-E and EGB to be reinforced, which was

confirmed (H5). The strongest influence on EGB was found if employees reported high levels of all three independent variables (H3) (see Figure 2). Consequently, this confirms that the combined effect of individual and organizational determinants influence EGB (Lo et al., 2012; Raineri & Paillé, 2016).

Figure 2 Strength of employee green behavior (EGB) as a function of organizational support (POS-E), environmental self-identity (EnvID), and supervisory support (PSS-E)*



*All independent variables were mean centered.

This study's findings advance theory on EGB in several ways. First, the study contributes to recent but scarce research on the role of EnvID in predicting EGB (Ruepert et al., 2016; van der Werff et al., 2021). EnvID can be regarded as a new influential factor in explaining EGB. This study thus extends previous findings on social-psychological mechanisms (Paillé & Mejía-Morelos, 2014; Paillé & Raineri, 2015; Raineri et al., 2016). It thereby extends previous research on EnvID in the private sphere (Fielding et al., 2008; van der Werff et al., 2013; Whitmarsh & O'Neill, 2010) and studies using self-identity as an extension to the theory of planned behavior to explain pro-environmental behavior in general (van der Werff et al., 2021), combining elements from both streams of research.

Second, combining EnvID and supervisory as well as organizational support in explaining EGB responds to calls to combine individual and organizational factors (Lo et al., 2012), and makes a contribution to studies that have started to combine supervisory and organizational support with psychological-value-related attributes in studies on EGB (Paillé et al., 2019; Paillé & Raineri, 2015; Raineri & Paillé, 2016).

This study adds to the scarce studies addressing the role of EnvID in workplace settings. In particular, green employees with EnvID are found to be intrinsically motivated to engage in EGB (Ciocirlan, 2016). That is, employees connect private environmental interests with their engagement in environmental goals at work (Clayton, 2003; Muster & Schrader, 2011). This study also underpins findings in green HRM that acknowledge the role of empowerment through supervisors and attracting "green job candidates" (Renwick et al., 2013, p. 23).

However, whether an identity is enacted depends on the identity's salience, the relative importance that a person assigns to an individual identity, and the context (Charng et al., 1988; Stryker & Serpe, 1994). In this study, the role of EnvID in EGB has been studied under the influence of supervisory and organizational support toward the environment. Although low levels of EnvID can be balanced with PSS-E, thus confirming previous findings on the influential role of supervisors on EGB (Paillé et al., 2020; Raineri & Paillé, 2016; Ramus & Steger, 2000), it shows that high levels of EnvID decrease the influence of PSS-E on EGB. It is possible that PSS-E might even have countereffects for employees with high EnvID (Davis et al., 2020), discouraging their engagement in EGB.

Basically, there is a need to leverage the salience of EnvID if employees are to stay connected and committed to the organization. It is found that the activation of a preferred identity is connected with positive emotions (Stets, 2005). Therefore, employees with high levels of EnvID play an important role in fostering EGB.

Limitations and Future Research

Some limitations are present in this study. First, the study's item selection did not fulfill common standards. Although, coefficient alphas and other reliability estimates indicate no concern, the implemented item battery of POS-E cannot be fully compared to the variables used in the original scale to measure POS-E (Lamm et al., 2015) since items were changed and adapted to fit the study's German context. I also need to report the high correlation between POS-E and PSS-E which could

raise some concern regarding the independence of these two variables. It is imaginable that the respondents perceived no significant difference between the organizational support and the supervisory support toward the environment in their work environments, thus leading to a high overlap between the two variables.

Second, the study's findings are based on self-reported data, which resulted in CMV, and calls for a study with more objective measures to capture EGB. Therefore, a future study should try to measure actual behavior and/or collect data in waves or measure the dependent and independent variables from different respondents as recommended by Podsakoff et al. (2003).

Third, the data stem from a convenience sample of an online panel. It is of concern that the respondents of such panels are "trained" in filling out questionnaires (although, according to the provider, protections are in place to avoid such a scenario) and, therefore, lead to biased data. In particular, reverse coded, negatively formulated items in general loaded low on the respective factors. The sample was further composed of participants working in a range of different companies and industries that might have reduced the possibility of engaging in eco-civic behaviors (Boiral & Paillé, 2012). It is imaginable that certain types of organizations do not offer any environmental activities in which participants can actually take part (which was also shown in the high number of participants indicating that there were no such options at their workplace). This problem should be addressed in upcoming studies measuring eco-civic engagement.

More research is needed on the influence of EnvID in predicting EGB. Earlier research has pointed at a possible influence of past behaviors on identity (Smith et al., 2007), yet in a recent study, while controlling for past behavior, the interaction effects rose with rising levels of identity (Carfora et al., 2017). However, in the light of the present study this could be interpreted as behavioral spillover from private or public green activism to the workplace (Blazejewski et al., 2018), i.e., past green behavior outside the workplace strengthens the EnvID.

Finally, future research could deepen the study of the organizational context on the unfolding and exertion of EnvID. In particular, in the light that EnvID is positively related to EGB and beyond (Whitmarsh & O'Neill, 2010), it is of great theoretical but also practical interest to understand the mechanisms beyond the influence of EnvID in the work context. Although research on self-identity asserts that identity activation/salience is connected with positive emotions (Stryker), the contextual factors that lead to such an activation in the context of EGB are still to be explored.

Conclusion

Organizations are tasked with demands to achieve environmental sustainability. This study provides an understanding of the role of EnvID in predicting EGB. The results show that supervisory and organizational support play a decisive role in EGB. A strong EnvID together with a high level of supervisory and organizational support result in the strongest levels of EGB. Low levels of either PSS-E or

EnvID can be balanced out by high levels of EnvID or PSS-E in moderating the relationship between POS-E and EGB.

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Chapter 5: Contributions, Limitations, and Future Research

This chapter details the overall contributions of the three papers and their theoretical as well as methodological limitations. The chapter includes avenues for future research and ends with recommendations for practitioners.

Contributions

This dissertation's contribution rests on several pillars: its contribution to research on EGB and corporate greening, its use of mixed methods, rich data, and its contribution to practice which I will describe in turn.

First and foremost, it offers new insights into the role of green employees in EGB and on the influence of sustainability paradoxes on corporate greening activities. Self-identity is identified as being of particular importance to the performance of EGB. It further shows that a person's environmental self-identity is affected by the organizational context through supervisory and organizational support. Both EGB and corporate greening activities are found to render paradoxical sustainability and organizational tensions salient. Data analysis revealed that green employees perceive ambiguity around EGB and responses to paradoxical tensions can lead to disadvantageous consequences for individuals and organizations. On the organizational level, paradoxical tensions appear in the forms of belonging, performing, and organizing tensions. Often, they are knotted and nested at different organizational levels. In response to organizational sustainability tensions, organizational members are found to rather push them away instead of working through them.

In applying qualitative and quantitative methods, this dissertation offers rich and detailed descriptions of context and provides information on individuals and organizations, making it a multilevel work of research. The data collected and analyzed for this dissertation encompass 24 face-to-face interviews, five case studies including a total of 32 face-to-face interviews and one non-participant observation, and a survey including over 700 employees, thus providing a mixed-method research program. Consequently, I present a top-down as well as bottom-up perspective of EGB and corporate greening.

By leveraging insights from identity and paradox theory, this dissertation's three papers offer new insights to the research on EGB and corporate greening. Identity theory offers a new explanation to the development and execution of EGB, thus adding to the scant research on EGB including identity theory (Carmeli et al., 2017; van der Werff et al., 2021). Paradox theory, with its multilevel (Costanzo & Di Domenico, 2015; Lewis & Kelemen, 2002) as well as meta-level (Lewis & Smith, 2014) nature, allowed me to uncover paradoxical tensions in EGB and corporate greening activities. Both theories taken together provided insights into paradoxical identity tensions that arise when individuals feel a discrepancy between their personal self and values and those of their organization. Overall, this dissertation provides a new theoretical framework for further inquiries on paradoxical tensions in EGB and corporate greening.

This dissertation thus makes contributions to several research fields:

First, it contributes to research on EGB. With its multilevel design adding to the scarce multilevel research in EGB (Norton et al., 2015;

Starik & Kanashiro, 2020), and its focus on green employees and their intrinsic motivation to engage in EGB, it provides an alternative view compared to intervention studies in the field (Lo et al., 2012) and the assumption that employees need encouragement through training or feedback (Carrico & Riemer, 2011; Sarkis et al., 2010). In addition, it adds to the scarce research on self-identity as a predictor of EGB (Carmeli et al., 2017; Ciocirlan, 2016; van der Werff et al., 2021). An environmental self-identity is found to influence and predict EGB. However, this study also shows that paradoxical identity tensions impact on lower-level employees, thus complementing previous research on identity struggles of sustainability managers (Carollo & Guerci, 2018; Wright et al., 2012). It thereby also contributes to findings in green HRM (Renwick et al., 2013). Instead of motivating green employees to engage in EGB, the data analysis rather suggested that obstacles that impact their EGB should be removed. These obstacles arise from rigid organizational structures to fixed job roles that do not allow "alternative" activities that are directed at corporate greening.

Second, this dissertation offers rich empirical findings on the influence of sustainability paradoxes in corporate greening, thus adding to the theoretical ground work (Hahn et al., 2010; Hahn et al., 2015; Hahn et al., 2018), and adds new insights from a bottom-up and a top-down perspective to current research. In observing the knottedness and nestedness of paradoxical tensions, this dissertation aims to raise awareness of the complexity of corporate greening activities that have so far underestimated the influence of individual organizational

members. In sum, macro-level research is complemented with insights gained from the individual level.

Limitations and future research

Notwithstanding the empirical richness of the data analyzed for this dissertation, a few limitations should be noted. One of the limitations is its focus on German companies and employees working for German companies. It might well be noted that the dissertation's outcomes would differ if the data were collected in other countries and cultural contexts. Consequently, the employed data do not allow for cross-national comparisons and easy generalizability to other contexts.

Limitations can also be found in the data collection. The self-report survey methods of Paper 3 contribute to concerns about common method variance. The study's cross-sectional design is perceived as problematic (Podsakoff et al., 2003). An improved design would be experimental in nature and work with more objective measurements to avoid social desirability and other effects. An experimental design with interventions could thereby enhance our understanding of individual and organizational determinants and deepen the knowledge of supervisory and organizational support (Lamm et al., 2015) as well as social-psychological mechanisms (Paillé & Raineri, 2015; Raineri & Paillé, 2016). The data analysis showed that certain forms of EGB (e.g., taking part in greening events) resulted in high numbers of missing data because the option to engage in such activities presumably did not exist for many respondents. Therefore, studies that aim to assess the

organizational context objectively could strengthen their findings if they measure the existence and participation in events objectively.

Although it could be perceived as counter-intuitive to study the EGB of green employees (Davis et al., 2020), it can offer valuable insights for future research in the field. For example, interviewees repeatedly referred to negative aspects, in that they perceived that EGB had negative impacts on their job or career. Researchers so far have mostly assessed the positive sides of EGB, neglecting its harmfulness to employees and organizations (Ciocirlan, 2016). Future research could address this aspect and further explore the ambiguity of EGB. The field could also profit from exploring the conflicting nature of EGB for employees, teams, co-workers, and organizations. In addition, the role of paradoxical tensions in EGB could be analyzed further, particularly the repertoire of responses that individuals use to work through belonging or performing tensions.

Implication for practitioners

Employees play an important role in activities directed at corporate greening and environmental sustainability. In neglecting employees' potential and know-how on greening activities, organizations give away the chance to implement greening activities that go far beyond what environmental management systems such as ISO14001 or EMAS can achieve. In particular, green employees with a high intrinsic motivation to engage in EGB are a valuable source for any organization.

This dissertation shows that corporate greening can render paradoxical tensions salient, creating the potential to address environmental

sustainability differently and to form proactive approaches to these tensions, i.e., creating innovative and long-term solutions for existing challenges instead of getting stuck in short-term fixes. Working through paradoxical tensions raises the trustworthiness of organizations regarding greening motives. Instead of holding on to trade-offs or win-win scenarios, new valuable solutions can be found that can help to integrate environmental goals into the organization's business strategy.

On the other hand, ignoring paradoxical tensions can lead to negative consequences for employees and organizations. Green employees who experience paradoxical tensions between their environmental self-identity and their organization's identity might withdraw from EGB or in the worst case might decide to leave their workplace for good. There is a risk of losing employees who cannot "live out" their environmental self-identity. To avoid negative consequences, such as withdrawal, splitting, or exit strategies, organizations should ensure the alignment between work and a worker's identity. Individuals tend to shape their identity to match their work role. However, the role of supervisory support is not neglectable, because it can replace a weak environmental self-identity. Supported by the instruments developed by green HRM, a learning process on how green employees can be activated and supported should be established. Paradoxical tensions should not be seen as a problem but rather a chance to address sustainability paradoxes to initiate proactive approaches that focus on both/and and more-than instead of either/or solutions.

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