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Effectiveness of value congruent disclosures and firm credibility in mitigating legitimacy threats

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ABSTRACT

This paper examines whether value congruent framing in firm disclosures, and firm credibility, help to repair or restore legitimacy following a legitimacy-threatening event. The methodology consists of two experiments. First, a pretest assesses whether participants judge negative information in a news article about a firm as a legitimacy-threatening event. Second, a main study determines whether participants' legitimacy judgements and intention to oppose the firm are influenced by firm credibility and value congruent disclosures. Our findings demonstrate that firm credibility, in the form of past performance, partially repairs judgements of legitimacy and fully mitigates intention to oppose the firm. However, value congruent disclosures, in the form of firm messages that align with values strongly held by individuals making the legitimacy judgement, do not influence legitimacy judgements or behavioural intentions after a legitimacy-threatening event, even when firm credibility is high. Taking both value congruence and firm credibility into consideration, this research indicates something rather challenging – value congruent disclosures do not matter but firm credibility does. The study contributes to the debate on the relative importance of what firms say compared with what they do by demonstrating the inefficacy of disclosures (what firms say) and, instead, the importance of firm credibility (what firms do) in legitimacy.

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Legitimacy; stakeholder judgements; environmental values; experimental study; firm credibility; disclosure

1. Introduction

When firms face a threat to their legitimacy due to controversial behaviour, two key ways in which their legitimacy can be repaired are: disclosures providing context and argumentation around a controversy, and/or a record of past performance that demonstrates firms' credibility (e.g. Cho et al., 2012, 2015). An increasingly rich body of work in the social and environmental reporting (SER) literature investigates the different impacts of firm disclosures (what firms say) and their credibility (what firms do). However, given the complexity of issues associated with both disclosures and credibility, there is still much to learn about how they influence legitimacy. This

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is particularly true when shifting focus from the dominant view of legitimacy as a societal or firm level construct, to investigating where judgements of legitimacy are made – at the individual level.

The SER literature assumes that disclosures are values-based, and that congruent disclosures are particularly effective in repairing legitimacy (for reviews see Deegan, 2014; Lindblom, 1993; Neu et al., 1998). Value congruence can be understood as the match between a stakeholder's own values and "his or her perceptions of the organization's values" (Edwards & Cable, 2009, p. 655). Thus, disclosures that explicitly use particular values (intentionally or not), are more likely to repair legitimacy with stakeholders who share these values. Practitioners also adopt this assumption, with firms framing their social and environmental engagement as "shared values" Nestlé', for example, have adopted a "Creating Shared Value" approach (Nestlé, 2015). Practitioners are advised that to create trust with non-corporate stakeholders, disclosures should demonstrate how firms enact values held by society (e.g. PricewaterhouseCoopers, 2016). However, the assumption that value congruent disclosures lead to a repair of legitimacy following an environmental controversy, has received little empirical attention.

In terms of credibility, the SER literature focuses mainly on credibility of firms' *messages*, e.g. assurance and quantification of disclosures (Aerts & Cormier, 2009; Kuruppu & Milne, 2010), rather than credibility of the firms as *sources* of disclosures – firm credibility. However, research in financial reporting and psychology demonstrates that credibility of a source is crucial (Du et al., 2010; Mercer, 2004; Pornpitakpan, 2004). In the context of firms it represents stakeholder perceptions of whether a firm has a record of fulfilling stated intentions in its disclosures (trustworthiness) and enacting such intentions (competence), e.g. accuracy of firms' prior earnings forecasts (Mercer, 2004; Williams, 1996).

In this paper, we use an experimental design to investigate whether firms facing a legitimacy-threatening event can influence individual (message recipient) judgements of legitimacy and behavioural intentions through (i) a value congruent disclosure, and (ii) a statement of firm credibility. Surprisingly, we find that value congruent disclosures *do not* improve individual judgements of legitimacy or decrease individuals' intention to oppose a firm in the context of a legitimacy-threatening event, even when firm credibility is high. However, high firm credibility is *very influential*, such that legitimacy judgements are partially repaired and intention to oppose the firm is fully mitigated after a legitimacy-threatening event.

This research contributes to debates on the importance of what firms say compared with what firms do. Previous research provides mixed evidence regarding the impact of environmental disclosure on mitigating legitimacy threats (e.g. Lee & Sweeney, 2015). For example, while Freedman and Patten (2004) suggest environmental disclosure could repair a firm's legitimacy, research by Kuruppu and Milne (2010) indicates that this is only evident in relation to some stakeholders. Cho et al. (2012) argue that disclosures are more influential in repairing legitimacy than past performance. Thus, while there has been some debate about the influence of firm disclosures, our research suggests that when framed as value congruent disclosures, legitimacy is *not* repaired.

2. Theoretical background and hypothesis development

This section brings together literature from a range of disciplines to discuss three key concepts central to this research: one, a discussion of value congruence and

environmental value orientations; two, an argument for the need to better understand legitimacy at the individual level; and three, an argument for the need to understand the role of firm credibility within judgements of legitimacy.

2.1. Value congruence in disclosures

If a firm's legitimacy depends on "the extent [to which] its means and ends appear to conform with social norms, values, and expectations" (Ashforth & Gibbs, 1990, p. 177), then shared values, or value congruence, play a central role in individual judgements of legitimacy. For instance, it is regularly argued that legitimacy is created in situations where there is a match between a firm's actions and the values of relevant stakeholders (Deegan, 2014; Neu et al., 1998).

Individuals attach varying degrees of importance to values that are widely shared in society (Campbell et al., 2003; Eagly & Kulesa, 1997). Many studies, for example, show that some people strongly adhere to environmental values while others do not attach high importance to these values (Verplanken, 2002; Verplanken & Holland, 2002). A much smaller body of research has examined the connection between values and legitimacy judgements.

Fukukawa et al. (2007), for example, find that MBA students who strongly value universalism were more likely to support ethical and socially responsible firms than those who value universalism less. Finch et al. (2015) report that individuals who value environmentalism more than others view the oil sands industry as less legitimate; in contrast, individuals who value economic development more than others have higher legitimacy judgements of the same industry. These examples support the notion that the values of stakeholders matter in judgements of legitimacy, but neither study included value congruence as a possible reason for the positive relationships described.

Instead, the SER literature presumes the importance of value congruence when a firm's legitimacy is under threat (Deegan, 2014; Lindblom, 1993). A threat is described as a mismatch between societal values and perceptions of the values of the firm (Cho & Roberts, 2010). The resulting legitimacy gap (Neu et al., 1998) can be mitigated through value congruent disclosures, a vital tool to repair or restore legitimacy after a threatening event (Deegan, 2014). It is also one of the approaches most likely to be chosen by managers facing a legitimacy threat (O'Donovan, 2002).

Previous research on legitimacy challenges mainly describes and compares the strategies firms use to restore their legitimacy (Tilling & Tilt, 2010). For example, in comparing four strategies – denial, defiance, decoupling and accommodation – Lamin and Zaheer (2012) find that denial and defiance hinders the recovery of legitimacy among the general public but has no impact on the investment community. Instead, decoupling is the most effective strategy for firms to garner favourable judgements among the latter. Hahn and Lülfs (2014) also find that firms use different legitimation strategies to report their negative events. They find most firms adopt a symbolic approach, aimed at modifying stakeholders' perceptions of firm actions. They further speculate that a symbolic strategy is ineffective because stakeholders could view it as a marketing practice and therefore not credible (Colleoni, 2013). However, not all strategies are used deliberately by firms to manage legitimacy. Byrch et al. (2015) demonstrate that firms are much more pluralistic in their understandings of sustainability, and pragmatic in the tactics used for managing these issues. Rather than

deliberately adopting a strategy consistent with a method of influencing legitimacy, firms often focus instead on just “getting on with it” in whatever way they think works.

Thus, these studies provide insights into the effectiveness of different strategies and the extent to which they are employed, intentionally or not. However, studies leave untested the assumption that value congruence in disclosures can help firms to (intentionally or otherwise) restore legitimacy (Lindblom, 1993; O'Donovan, 2002). The question then becomes with what values might firms be congruent, especially in the context of an environmental controversy?

2.1.1. Environmental value orientations

Rokeach (1973, p. 5) provides one of the most cited definitions of value as “enduring belief[s] that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence”. Within the environmental psychology and sociology literature, the link between values and proenvironmental behaviour is guided by Schwartz (1992) universal values system, drawing on the distinction between self-transcendence and self-enhancement values. It has been consistently shown in environmental studies that people who give priority to prosocial values (self-transcendence) have stronger proenvironmental beliefs than people who give priority to individual values (self-enhancement) (De Groot & Steg, 2008). Basing their work on Schwartz's self-transcendent and self-enhancement values, Stern and Dietz's (1994) value-basis theory suggests that peoples' beliefs about environmental issues are based on the relative importance that a person places on the individual (self-enhancement), others humans and the biosphere (self-transcendence). Stern and Dietz referred to these value groups as “value orientations”:

- Altruistic value orientation – reflects the importance that people attach to valued objects such as the welfare or protection of other human beings. People who apply such values make a judgement based on costs or benefits for a human group, such as a community, ethnic group, nation state or all of humanity.
- Biospheric value orientation – reflects the importance people attach to non-human species or the biosphere. People who apply such values make a judgement based on costs or benefits to ecosystems or the biosphere, including individual animals and ecosystems.
- Egoistic value orientation – reflects the importance people attach to the self; it is based on self-interest. People with an egoistic value make a judgement based on aspects of the environment that affect them personally, or they oppose protection of the environment if personal costs are perceived as too high.

Stern and Dietz's value orientations model has been demonstrated repeatedly within the environmental literature as having strong reliability and validity when investigating values in conjunction with environmental attitudes and behaviour (De Groot & Steg, 2008).

2.2. The importance of investigating legitimacy at the individual level

Most existing research on legitimacy focuses on the societal level, reflecting collective assessment or common impressions of a firm as appropriate or acceptable (e.g. Aerts & Cormier, 2009; Tilling & Tilt, 2010). However, given that legitimacy is “conferred upon

the organisation by ... individuals ... external to it” (Lindblom, 1993, as cited in Milne & Patten, 2002, p. 382), and that individuals’ subjective perceptions are a necessary part of the legitimisation process (Cho et al., 2012; Kuruppu & Milne, 2010), understanding the mechanisms by which individuals make legitimacy judgements is important. Alongside this, there are few empirical studies that directly investigate how legitimacy is measured. Some, such as Cho et al. (2012) use an indirect measure where legitimacy is inferred through factors including membership of environmentally-sensitive industries. Aerts and Cormier (2009), one of few studies to investigate legitimacy directly, coded the valence of news (positive, neutral and negative) as a measurement of legitimacy. While these measures provide interesting insights into legitimacy, further enriching the construct, particularly as used at the individual level of analysis, will enable fresh insights into the legitimisation process.

Using the three value orientations as the most appropriate construct to measure values in an environmental controversy, combined with the assumption that value congruence is crucial for a firm when defending its legitimacy in the face of threats (Deegan, 2014; Lindblom, 1993), we argue that if a firm creates (intentionally or otherwise) (O’Donovan, 2002) a disclosure that matches the altruistic, biospheric or egoistic value orientation of individuals to address a legitimacy threat, it can lead to higher legitimacy judgements among those stakeholders who have high altruistic, biospheric and egoistic value orientations than with those who have low orientations. Thus, our first hypothesis is:

H1. In a legitimacy-threatening event, a firm’s disclosure that is congruent with stakeholders’ value orientations leads to a higher legitimacy judgement among stakeholders with high value orientations (high value congruence) compared to stakeholders with low value orientations (low value congruence).

Legitimacy judgements, in addition, elicit behavioural outcomes (Tost, 2011). This includes many types of behaviour, such as active support, tolerance, sanctions or trying to change the way a firm operates (Bitektine, 2011). Aspects of social sanctions include trying to affect regulation, lobbying, protesting and signing petitions (Handelman & Arnold, 1999; Hybels, 1995). For instance, Kuruppu and Milne (2010) demonstrate that a higher legitimacy judgement (or what they term attitude towards the company) leads to a higher intention to join the firm. This, therefore, implies that individuals with higher legitimacy judgements of the focal firm are less likely to oppose it. Thus, a second hypothesis:

H2. In a legitimacy-threatening event, a firm’s disclosure that is congruent with stakeholders’ value orientations leads to lower intention to oppose the firm among stakeholders with high value orientations (high value congruence) compared to stakeholders with low value orientations (low value congruence).

2.3. Firm credibility and value congruent disclosures

In addition to value congruence, credibility plays a key role in stakeholder legitimacy judgements (Ashforth & Gibbs, 1990; Suchman, 1995). Communication, marketing and psychology research shows that credibility is a complex construct composed of different source and message components (Pornpitakpan, 2004).

The SER literature focuses primarily on credibility of firms’ *disclosures*, often through the evaluation of disclosure features such as assurance statements and objective

information. In the communication and psychology literatures, this concept is called message or *disclosure credibility* (Mercer, 2004). The concept, in the SER literature, is investigated in three ways: one, the features of disclosure credibility that create environmental reputation (e.g. Cho et al., 2012; Toms, 2002); two, the relationship(s) between disclosure credibility and environmental performance (e.g. Clarkson et al., 2008); or three, the influence of the environmental sensitivity of a firm's industry on the perceived credibility of a firm's disclosures (e.g. Aerts & Cormier, 2009). Often, this work investigates how certain features of disclosure credibility contribute to environmental reputation. For instance, positive disclosures from firms may be regarded by users as biased, because the information corresponds to situational incentives, such as a manager's self-serving motivation to enhance firm image, whereas bad news disclosures are regarded as more credible because they are less consistent with managers' incentives to look good (e.g. Chen et al., 2016). Similarly, assurance statements are often regarded as adding credibility by improving the plausibility of firms' disclosures (Adams & Evans, 2004; Dando & Swift, 2003), although Kuruppu and Milne (2010) find mixed evidence for the effect of assurance on stakeholders' perceptions of environmental disclosure credibility.

Thus, the SER literature provides rich insights into credibility of firms' disclosures, but as yet has not investigated the credibility of the *sources* of messages i.e. firm credibility (Aerts & Cormier, 2009). This is noteworthy because other disciplines clearly demonstrate that firm credibility plays an important role in how stakeholders respond to firms and their messages (Mercer, 2004; Vanhamme & Grobбен, 2009; Williams, 1996).

Firms develop credibility by engaging in consistent behaviour over time (Fombrun, 1996; Goldsmith et al., 2000). For instance, in financial reporting research, investors assess whether management's prior financial forecasts correspond with prior financial results, which determines investors' perceptions of management competence and trustworthiness (Williams, 1996). This is stakeholders' assessments of a firm's prior behaviour: whether a firm has fulfilled stated intentions in its claims – trustworthiness and has enacted such intentions – competence (Goldsmith et al., 2000; Newell & Goldsmith, 2001). Across marketing and financial reporting literatures, trustworthiness and competence are acknowledged components of firm credibility (Newell & Goldsmith, 2001). Our conception of firm credibility therefore follows this research. We define firm credibility as stakeholder perceptions of whether a firm has fulfilled stated intentions in its environmental disclosures (trustworthiness) and has enacted such intentions (competence).

Legitimacy research in related disciplines indicates that firm credibility acts as a "capital reserve" in times of crises, by acting as a buffer against threats to firm legitimacy (Suchman, 1995, p. 596; Vanhamme & Grobбен, 2009). Stakeholders have a higher tolerance of credible firms when firms deviate from stakeholders' expectations of firms' behaviour (Ashforth & Gibbs, 1990). Empirical studies in crisis management support this assumption by demonstrating that firms' prior behaviour – a signal of their credibility – acts as a buffer against stakeholders' negative reactions to controversies (Zhou & Ki, 2018). This research shows that firms perceived as having a record of good CSR behaviour are judged more favourably (and more legitimate) by individuals

than firms perceived as having a record of bad CSR behaviour in the face of crises (Coombs & Holladay, 1996; Vanhamme & Grobбен, 2009).

In addition to a buffering effect, it is predicted that firm credibility interacts with value congruent disclosures. Studies across business communication, financial reporting and marketing literatures show that disclosures of firms perceived to have high credibility are more likely to be believed by stakeholders compared to disclosures of firms perceived to have low or no credibility (Goldsmith et al., 2000; Hirst et al., 1999; Williams, 1996). Investors and analysts have been shown to place greater weight on present-day predictions from firms who have a history of accurate or reliable prior forecasts (the degree of difference between management's forecast and actual earnings) compared to firms with a history of less accurate prior forecasts (Hirst et al., 1999; Hodge et al., 2006; Williams, 1996). Thus, it is expected that the effects of firm credibility on legitimacy judgement and intention to oppose the firm are stronger when value congruence is high than when value congruence is low.

In sum, we predict that (1) firm credibility acts as a buffer against threats to firms' legitimacy – it leads to higher legitimacy judgement and lower intention to oppose the firm and (2) that these firm credibility effects are stronger when value congruence is high compared to when value congruence is low.

H3a. In a legitimacy-threatening event, high firm credibility leads to a higher legitimacy judgement than low firm credibility. This effect of firm credibility on legitimacy judgement is stronger when value congruence is high compared to when value congruence is low.

H3b. In a legitimacy-threatening event, high firm credibility leads to lower intention to oppose the firm than low firm credibility. This effect of firm credibility on intention to oppose the firm is stronger when value congruence is high compared to when value congruence is low.

3. Method overview

This section provides detailed information on the method used and the process of its execution. This research uses a two-study design. First, our pretest confirms that our experimental stimuli worked as we expected, namely, that the negative news story we developed creates a legitimacy threat – it decreases participants' legitimacy judgement and increases their intention to oppose the firm. The main study then uses the verified stimuli to test H1-H3.

3.1. Pretest design and results

162 participants from the same sample pool, but who did not take part in the main study, were randomly assigned to read either a neutral news story (Figure 1) or a negative news story (Figure 2) of the firm. Both stories were presented as news reports in the same local media. The neutral news story gave background information about the firm only, and the negative story gave the same background information together with concerns raised by non-governmental organisations (NGOs). These concerns were described in terms of altruistic, biospheric and egoistic value orientations.

The independent *t*-tests suggest that the negative news story leads to lower legitimacy judgement ($t_{160} = 7.57$, $p = 0.001$, two-tailed; $M_{\text{Neutral}} = 4.96$, $SD = 1.00$, $M_{\text{Negative}} = 3.64$,

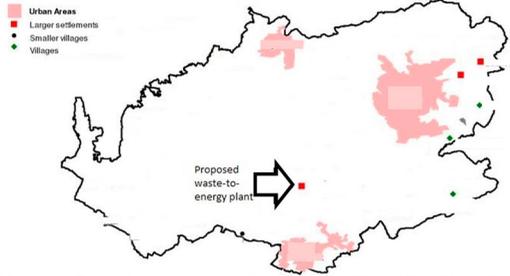
The City Chronicle

Waste Plant Dispute

Environmental Groups and Company clash over City Waste Plant

For years councils and environmentalists have been at loggerheads over what should be done with City's growing rubbish mountain. A waste disposal company – Green Treat – was revealed last week as the preferred bidders for a contract to deal with City's waste for the next 20 years. The company proposes to deal with City's rubbish by building a pioneering waste-to-energy plant at a site in Plant Location – a local area south west of City (see map below). The proposed plant will treat about 180,000 tons of City's waste each year through a relatively new waste treatment process known as gasification. This process treats waste that cannot be recycled by burning it at a low temperature and turning it into ash. This process will produce gas which can be burned to produce electricity. The company plans to sell this to a local utility firm. If approved, it will be the largest plant of its type in the United Kingdom and will be running by the middle of next year – 2014.

Green Treat is currently considering two different design options for the plant – a high chimney plant design where the chimney stack would be high above ground level, or a low chimney plant design where the chimney stack would be close to ground level.



Proposed waste-to-energy plant to be built at Plant Location.

Green Treat's application to build the waste plant is being considered by Local Area council. The dispute is likely to continue in the coming weeks and months as both sides battle to win the hearts and minds of people in Local Area.

End of news report

Figure 1. Pretest experimental materials – neutral news story.

$SD = 1.20$) and higher intention to oppose the firm ($t_{160} = -3.621$, $p = 0.001$, two-tailed; $M_{Neutral} = 2.83$, $SD = 1.31$, $M_{Negative} = 3.67$, $SD: 1.61$). Thus, the negative news story manipulation was successful in creating a legitimacy-threatening event and was brought forward for use in the main study.

3.2. Main study

3.2.1. Participants and design

A total of 231 participants (119 female) from a UK university in the south-west of England were recruited to take part in the main study.¹ We recruit students because our experimental tasks – individual reactions to local firm's environmental impacts – did not require experimental subjects to have professional expertise. For experiments that do not require specialised knowledge, research shows that student subjects make

¹One-way ANOVA analyses show that participants do not significantly vary between the experimental conditions of the pretest and the main study on demographic variables: university subject studied, gender and age.

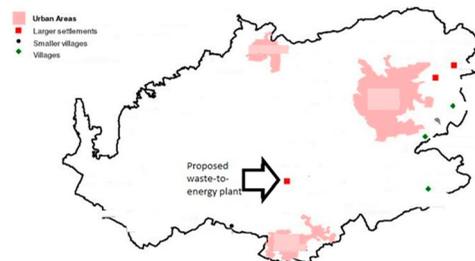
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For years councils and environmentalists have been at loggerheads over what should be done with City's growing rubbish mountain. A waste disposal company – Green Treat – was revealed last week as the preferred bidders for a contract to deal with City's waste for the next 20 years. The company proposes to deal with City's rubbish by building a pioneering waste-to-energy plant at a site in Plant Location – a local area south west of City (see map below). The proposed plant will treat about 180,000 tons of City's waste each year through a relatively new waste treatment process known as gasification. This process treats waste that cannot be recycled by burning it at a low temperature and turning it into ash. This process will produce gas which can be burned to produce electricity. The company plans to sell this to a local utility firm. If approved, it will be the largest plant of its type in the United Kingdom and will be running by the middle of next year – 2014.

Green Treat is currently considering two different design options for the plant – a high chimney plant design where the chimney stack would be high above ground level, or a low chimney plant design where the chimney stack would be close to ground level. **Previous studies have showed that emissions from plants similar to the one proposed by Green Treat release emissions, including nitrogen dioxide, nano-particles and dioxins into the air that are harmful to health.**



Proposed waste-to-energy plant to be built at Plant Location.

Environmental groups believe that a high chimney plant at Plant Location would leave the Plant Location area unaffected. They claim emissions released from a high chimney stack, will be carried by prevailing winds, from the area, into City. Such a design will result in emissions from the plant causing respiratory diseases and shorter life expectancy of you and other people living within City. Due to the likely effects on you and other city residents, environmental groups believe the company should not be allowed to build a plant at the proposed site.

Environmental groups believe that a low chimney plant at Plant Location would result in only the Plant Location area being affected. They claim emissions released from a low chimney stack will not be carried away by prevailing winds, and so will not reach City. Such a design, they say will result in emissions from the plant causing respiratory diseases and shorter life expectancy of people living within the Plant Location area. Due to the likely effects on Plant Location's residents, environmental groups believe the company should not be allowed to build a plant at the proposed site.

In addition, environmental groups believe that a low chimney plant design will have a negative impact on the health of species in the Plant Location area. Plant Location hosts 150 different species of birds every year and is home to one of the largest populations of red squirrels in the UK. Such a design, they say will result in emissions from the plant causing respiratory diseases and shorter life expectancy of these and other species. Due to the negative impact on wildlife in Plant Location, they believe the company should not be allowed to build a plant at the proposed site.

Green Treat's application to build the waste plant is being considered by Local Area council. The dispute is likely to continue in the coming weeks and months as both sides battle to win the hearts and minds of people in Local Area.

End of news report

Figure 2. Pretest & main study experimental materials – negative news story.

similar decisions to those made by “real-world” individuals (Libby et al., 2002). Research by Liyanarachchi (2007) shows students have similar reactions in the context of environmental information about firms.

The main experiment is a 3 (value orientation in firm disclosure: altruistic versus biospheric versus egoistic)×2 (value orientation level: high versus low)×2 (firm credibility:

high versus low) $\times 2$ (firm credibility order: high credibility first versus last) mixed factorial design.²

Firm credibility is a manipulated within-subjects variable, with each participant making legitimacy judgements of a firm and indicating their intention to oppose it, for both a high credibility firm and a low credibility firm. Previous research suggests perceptions of credibility depend, not only on message source and message content, but also message recipients (Pornpitakpan, 2004). Indeed, in credibility research it is shown that message receivers associate a piece of information with different sources and with different amounts of source credibility (Greenwald, 1976; Knobloch-Westerwick et al., 2015). Thus, in order to ensure internal validity, without sacrificing external validity, firm credibility was designed as a within-subjects variable. However, a within-subjects design may create demand and carryover effects. In order to address these potential threats, we took the following two actions: First, the order of firm credibility (high credibility first vs last) was randomised across different conditions. This helps rule out that results are driven by the order of firm credibility conditions. Second, at the end of the experiment, all participants were asked to guess the purpose of our research. Most participants failed to correctly indicate the true purpose of our research. This indicates that the results were not influenced by demand effects.³

Value orientation in firm disclosure is a manipulated between-subjects variable. Firm disclosures employ language consistent with biospheric, altruistic and egoistic value orientations. Value orientation is a between-subjects variable; high and low levels are created by median splits of participants' responses to value orientation measures that match the value orientation language in each firm disclosure.

3.2.2. Experimental procedure

Participants were randomly assigned to one of the six manipulated experimental conditions. The experiments took place in university teaching rooms. Participants were informed that they were involved in a study "to investigate perceptions of democracy in local environmental and waste issues" to reduce possible demand effects. In order to increase mundane realism (Milne & Patten, 2002), our experimental materials were based on a real controversy surrounding the siting of a gasification plant that happened two years prior to our study, and in a distant part of the country. Gasification (a process that disposes of rubbish by burning it at a low temperature) was chosen because local UK governments promoted it as different to "older" incineration technologies, and thus claimed it to be less environmentally polluting. However, this was challenged by various actors, such as special interest groups and local chapters of Greenpeace and Friends of the Earth (FoE), sparking a controversy around the environmental impacts

²The main experiment consists of 24 (12 \times 2) cells. 12 cells are spread across the between-subjects variables: 3 \times (value orientation in firm disclosure) \times 2 (value orientation level) \times 2 (firm credibility order) and 2 cells across the within-subjects variable (firm credibility: high vs low). 231 recruited participants are divided between the 12 cells of the between-subjects variables (all participants experienced the 2 cells of the within-subjects variable). On average, this amounts to 19 (231 / 12) participants per main experiment cell. 231 participants exceed the sample size of 175 participants (15 participants per cell) calculated using the statistical power calculator: G*Power (version 3.1). G*Power calculation is based on a significance level (α) of 0.05, effect size of 0.30 and a strong level of statistical power (β : 0.95). This indicates that a sufficient number of participants were recruited for the main experiment.

³20% of participants generally guessed the firm credibility purpose. The results of the analyses do not change when this 20% is excluded. These participants are therefore included in the analyses.

of the associated facility. To further increase mundane realism, our reports of the waste gasification dispute were structured to include similar words and phrasing to the real-life controversy, derived from our media analysis (via the LexisNexis database). In our scenario, the firm proposing the plant is fictitious, to control for pre-existing beliefs/attitudes towards the firm.

The main study began by collecting pre-stimulus measures (see the Appendix for more details) from participants to assess their opinion towards waste incineration, their environmental knowledge, their environmental value orientations and thirteen filler questions relating to local democracy (to disguise the purpose of the experiment). At the end of these questions, each participant was given the following instruction: “[w]hen reading the news report, please imagine that you are resident (living) in XXX city now and for the next few years”.

Then all participants received the same negative news story as in the pretest. After this, participants were randomly assigned one of three firm disclosures, consistent with *either* altruistic, biospheric or egoistic value orientations. These were written as having originated from the same local media as the negative news report and included a statement of firm credibility that was either high or low. In other words, after the negative news report, each participant was twice exposed to a firm disclosure consistent with a particular value orientation (e.g. altruistic), one from a high credibility firm and one from a low credibility firm, with the order of firm credibility randomised across participants (see [Figures 3](#) and [4](#) for example in the case of altruistic value orientation).

After each firm disclosure, post-stimulus measures (see the Appendix for more details) were collected from participants to assess their legitimacy judgements of the waste disposal firm, their intentions to oppose the firm, their demography, filler questions and manipulation check questions. Finally, all participants were asked to guess the purpose of the research. Once all participants had finished the experiment, they were thanked, debriefed, and provided with £5 (GBP) each in exchange for their time and participation (see [Figure 5](#) for full details of experimental procedure).

3.2.3. Independent variables operationalisation and manipulation

Value congruence was operationalised by matching the value orientation in firm disclosures with the measures of participants’ altruistic, biospheric and egoistic value orientations. Value orientations were measured by asking all participants to rate the extent of their concern for the environment, on a 7-point Likert scale, because of consequences for phenomena such as “people in the community”, “future generations” (altruistic value orientation), “plants”, “birds” (biospheric value orientation) and “me”, “my health” (egoistic value orientation). Participants were categorised into high and low value orientation levels by splitting responses to each value orientation measure at the median: (median: 6.50 for altruistic value orientation; median: 5.50 for biospheric value orientation; median: 6.00 for egoistic value orientation). If participants, scoring above the median in a particular value orientation (e.g. high altruistic value orientation level), were exposed to firm disclosure language which matches that value orientation (e.g. altruistic), it represents high value congruence. If participants, scoring below the median in a value orientation (e.g. low altruistic value orientation level), were exposed to firm disclosure language which matches that value orientation, it represents low value congruence.

The City Chronicle**Green Treat Responds****Company responds to environmental groups' claims**

Green Treat has indicated that it will build a low chimney plant at the Plant Location site.

Green Treat was established in 1992 and is headquartered in City, UK. It has been named by The Times as one of British Top 100 socially conscious corporate citizens. Since its establishment, the company has maintained a good environmental performance record. It has never breached Environment Agency permitted emission levels in the operation of its waste plants, and the company's claims that it operates its plants in an environmentally responsible manner have consistently been validated by reports in local and national media. In addition, it has always demonstrated its expertise in environment issues. The data that it discloses about its future environmental performance, including projected emission levels of its waste plants is always consistent with its own performance data and with Environmental Agency monitoring data.

In response to the environmental groups' claims, Green Treat's communication manager indicated:

"Our company will use a technology in our low chimney waste plant called gasification, which is different from incineration. One reason for choosing this technology is its low emission levels, which is just a fraction of the limits permitted by the European Union. We have also provided extra information to the council which demonstrates that the facility will only make a very small contribution to nitrogen dioxide, nano-particle, and dioxin levels".

The communication manager further said: "We will use the latest environmentally-sensitive technology in our low chimney waste plant which will ensure that emissions will not be harmful to the health of local people in Plant Location. We will also open a clinic in Plant Location offering free health check and treatment for the local residents living in Plant Location on a regular basis". The company also indicates they will continue to work with those who have a responsibility for safeguarding public health to ensure the appropriate steps are taken to avoid any damage".

End of news report

Figure 3. Main study experimental materials – altruistic value orientation & high firm credibility.

In terms of firm disclosure, all participants were randomly assigned to a firm disclosure in the format of a reactive press release that is consistent with altruistic, biospheric or egoistic value orientation (see [Figures 3](#) and [4](#)). To enhance external validity, we presented this as a news report in a local newspaper, using a third-person style like the actual news reports, and in which the expression of each value orientation was consistent in structure. For example, in the disclosure consistent with altruistic value orientation, the firm's communication manager first acknowledged that the new technology "make [s] a very small contribution to nitrogen dioxide, nano-particle, and dioxin levels". He then indicated that the organisation "will ensure that emissions will not be harmful to the health of local people" and that a clinic will be opened to provide free health checks and treatment for the local residents on a regular basis. Similar structures were also used for firm disclosure consistent with egoist and biospheric value orientation.

A reactive press release was used because this format allows for a more immediate and detailed response to legitimacy threats (O'Donovan, 2002) but is not often used in SER literature (Aerts & Cormier, 2009). We also adopted the same legitimisation strategy: accommodation, in each of our disclosures to avoid alternative explanations. Accommodation was chosen as the key strategy for the firm disclosures because Hahn and Lülfs

The City Chronicle

Clean Bin Responds

Company responds to environmental groups' claims

Clean Bin has indicated that it will build a low chimney plant at the Plant Location site.

Clean Bin was established in 1992 and is headquartered in City, UK. It has been named by The Times as one of 100 British companies that need to improve their social consciousness. Since its establishment, the company has maintained a bad environmental performance record. It has regularly breached Environment Agency permitted emission levels in the operation of its waste plants, and the company's claims that it operates its plants in an environmentally responsible manner have been consistently contradicted by reports in local and national media. In addition, it lacks knowledge in environment issues. The data that it discloses about its future environmental performance, including projected emission levels of its waste plants, is rarely consistent with its own performance data and with Environment Agency monitoring data.

In response to the environmental groups' claims, Clean Bin's communication manager indicated:

"Our company will use a technology in our low chimney waste plant called gasification, which is different from incineration. One reason for choosing this technology is its low emission levels, which is just a fraction of the limits permitted by the European Union. We have also provided extra information to the council which demonstrates that the facility will only make a very small contribution to nitrogen dioxide, nano-particle, and dioxin levels".

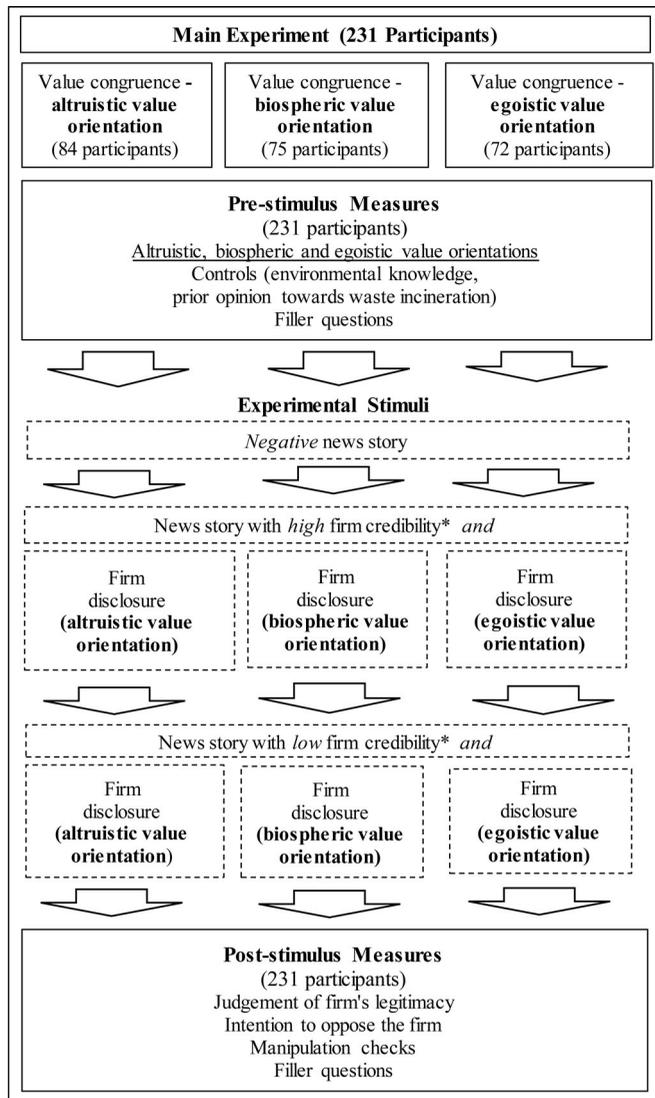
The communication manager further said: "We will use the latest environmentally-sensitive technology in our low chimney waste plant which will ensure that emissions will not be harmful to the health of local people in Plant Location. We will also open a clinic in Plant Location offering free health check and treatment for the local residents living in Plant Location on a regular basis". The company also indicates they will continue to work with those who have a responsibility for safeguarding public health to ensure the appropriate steps are taken to avoid any damage".

*****End of news report*****

Figure 4. Main study experimental materials – altruistic value orientation & low firm credibility.

(2014) found it to be one of the most popular strategies used by firms to improve legitimacy in negative controversies yet its effectiveness is relatively under-researched (Lamin & Zaheer, 2012).

Firm credibility was measured through firm trustworthiness and competence in environmental performance (see Figures 3 and 4). For example, a high credibility firm was described as "named by The Times as one of British Top 100 socially conscious corporate citizens. Since its establishment, the company has maintained a good environmental performance record ... In addition, it has always demonstrated its expertness in environment issues." By contrast, a low credibility firm was described as "named by The Times as one of 100 British companies that need to improve their social consciousness. Since its establishment, the company has maintained a bad environmental performance record ... In addition, it lacks knowledge in environment issues." The manipulation is consistent with the operationalisation of firm credibility in previous research (Goldberg & Hartwick, 1990; Lafferty, 2007; Newell & Goldsmith, 2001).



*High firm credibility preceded low firm credibility information in experimental materials given to half of the participants. Firm credibility information was in the opposite order - low preceded high - in materials given to the other half of participants. All participants were randomly assigned to experimental conditions.

Figure 5. Main study experimental materials – full experimental procedure.

3.3. Measurement of variables

The pre- and post-stimulus measures of our variables – control variables: prior opinion towards waste incineration and environmental knowledge⁴ and dependent variables:

⁴One-way ANOVA analyses show that participants do not significantly vary between the main study experimental conditions on the control variables: prior opinion towards waste incineration or environmental knowledge.

Table 1. Main experiment: Overview of measures.

Variable	Number of items	Scale points	Bottom anchor(s)	Top anchor(s)
Pre-stimulus measures				
Prior opinion towards waste incineration	1	1–7	Strongly oppose	Strongly support
Environmental knowledge	10		Yes	No
Value orientation: Altruistic, biospheric and egoistic	12 (3 × 4)	1–7	Not important	Supreme importance
Post-stimulus measures				
Firm Credibility: Trustworthiness and competence	8 (2 × 4)	1–7	Strongly disagree	Strongly agree
Judgement of firm's legitimacy	9	1–7	Unacceptable, immoral, bad ...	Acceptable, moral, good ...
Intention to oppose the firm	5	1–7	Unlikely	Likely

judgement of firm legitimacy and intention to oppose the firm were collected from participants as outlined in the Experimental procedure section. Table 1 summarises these measures and further details are provided in the Appendix.

4. Results

4.1. Manipulation checks

To examine the effectiveness of firm credibility manipulations, we asked participants about their perceptions of the waste firms' trustworthiness and competence. Results of paired-sample *t*-tests showed, as intended, that participants perceived the low credibility firm as significantly less trustworthy than the high credibility firm ($t_{230} = 20.12$, $p = 0.001$, two-tailed; $M_{Low} = 2.44$, $M_{High} = 4.52$). Paired-sample *t*-tests also showed that participants perceived the low credibility firm as having significantly lower competence than the high credibility firm ($t_{230} = 20.58$, two-tailed; $p = 0.001$, $M_{Low} = 2.93$, $M_{High} = 5.12$). Thus, our manipulation was successful.

4.2. Analysis of main experiment

Results of a mixed analysis of variance (ANOVA) of the effect of the main experiment variables – value orientation in firm disclosure, value orientation level and firm credibility – on judgement of firm legitimacy are presented in Table 2. Firm credibility order is not included as it has a non-significant main effect and does not significantly interact with any other variables ($p < 0.05$). Results of a mixed ANOVA analysis of the effect of the main experiment variables, inclusive of firm credibility order, on intention to oppose the firm are presented in Table 3. Firm credibility order has a significant main effect ($F = 5.802$, $p = 0.017$, two-tailed, Table 3) but does not significantly interact with other variables.

To test hypotheses, the experiment variables are analysed by value orientation (in firm disclosure) – altruistic, biospheric and egoistic. Tables 4 and 5 present descriptive statistics across value orientation levels (high vs low) and firm credibility conditions (high vs low) by value orientation. Tables 6 and 7 present 2 × 2 mixed ANOVA analyses for

Table 2. Main experiment: Mixed ANOVA analysis for the effects of value orientation in firm disclosure, value orientation level and firm credibility on judgement of firm's legitimacy.

Source of variation	df	Mean square	F-statistic	Two-tailed <i>p</i> -value
Value Orientation in Firm Disclosure	2	10.929	5.209	0.006
Value Orientation Level	1	0.220	0.105	0.746
Value Orientation in Firm Disclosure×Value Orientation Level	2	0.245	0.117	0.890
Error	225	2.098		
Firm Credibility	1	87.506	112.183	0.000
Firm Credibility×Value Orientation in Firm Disclosure	2	0.008	0.1	0.990
Firm Credibility×Value Orientation Level	1	1.144	1.466	0.227
Firm Credibility×Value Orientation in Firm Disclosure×Value Orientation Level	2	0.205	0.263	0.769
Error	225	0.780		

Notes: Dependent variable: Judgement of firm's legitimacy. Highlighted *p*-values show significant *F*-statistic results ($p < 0.05$). Value Orientation in Firm Disclosure (Altruistic versus Biospheric versus Egoistic) is a between-subjects variable. Value Orientation Level (High versus Low) is a between-subjects variable created by median-splits of participants' responses to value orientation measures that match the value orientation in the firm disclosure that participants are exposed to. Firm Credibility (High versus Low) is a within-subjects variable. Firm Credibility Order (High credibility first versus Last), a between-subjects variable, is not included in the mixed ANOVA analysis because the variable has non-significant main and interaction effects on judgement of firm's legitimacy.

Table 3. Main experiment: Mixed ANOVA analysis for the effects of value orientation in firm disclosure, value orientation level, firm credibility and firm credibility order on intention to oppose the firm.

Source of variation	df	Mean square	F-statistic	Two-tailed <i>p</i> -value
Value Orientation in Firm Disclosure	2	10.231	3.505	0.032
Value Orientation Level	1	8.918	3.055	0.082
Firm Credibility Order	1	16.936	5.802	0.017
Value Orientation in Firm Disclosure×Value Orientation Level	2	5.523	1.892	0.153
Value Orientation in Firm Disclosure×Firm Credibility Order	2	1.899	0.650	0.523
Value Orientation Level×Firm Credibility Order	1	3.298	1.13	0.289
Value Orientation in Firm Disclosure×Value Orientation Level×Firm Credibility Order	2	1.668	0.571	0.566
Error	219	2.919		
Firm Credibility	1	158.769	169.554	0.000
Firm Credibility×Value Orientation in Firm Disclosure	2	0.817	0.872	0.419
Firm Credibility×Value Orientation Level	1	0.537	0.573	0.450
Firm Credibility×Firm Credibility Order	1	1.132	1.209	0.273
Firm Credibility×Value Orientation in Firm Disclosure×Value Orientation Level	2	0.026	0.027	0.973
Firm Credibility×Value Orientation in Firm Disclosure×Firm Credibility Order	2	0.419	0.448	0.640
Firm Credibility×Value Orientation Level×Firm Credibility Order	1	0.711	0.760	0.384
Firm Credibility×Value Orientation in Firm Disclosure×Value Orientation Level×Firm Credibility Order	2	0.352	0.376	0.687
Error	219	0.936		

Notes: Dependent variable: Intention to oppose the firm. Highlighted *p*-values show significant *F*-statistic results ($p < 0.05$). Value Orientation in Firm Disclosure (Altruistic versus Biospheric versus Egoistic) is a between-subjects variable. Value Orientation Level (High versus Low) is a between-subjects variable created by median-splits of participants' responses to value orientation measures that match the value orientation in the firm disclosure that participants are exposed to. Firm Credibility (High versus Low) is a within-subjects variable. Firm Credibility Order (High credibility first versus Last), a between-subjects variable, is included in this mixed ANOVA analysis because the variable has a significant main effect on intention to oppose the firm.

Table 4. Main experiment: Means, standard deviations (SD) and participant numbers (#) by value orientation for the effects of value orientation level and firm credibility on judgement of firm's legitimacy.

Value orientation in firm disclosure	Value orientation level	Firm credibility					
		High			Low		
		#	Mean	SD	#	Mean	SD
Altruistic	High	43	4.27	1.40	43	3.25	1.63
	Low	41	4.15	1.13	41	3.45	1.32
	Combined	84	4.21	1.27	84	3.35	1.48
Biospheric	High	40	4.50	0.86	40	3.49	1.31
	Low	35	4.33	0.91	35	3.57	1.26
	Combined	75	4.42	0.88	75	3.52	1.28
Egoistic	High	32	4.83	1.02	32	3.93	1.12
	Low	40	4.70	0.88	40	3.84	1.18
	Combined	72	4.76	0.94	72	3.88	1.15

Notes: Means and standard deviations (SD) for judgement of firm's legitimacy are calculated based on an average of nine 7-point Likert-scale responses with bipolar endpoints (e.g.: 1 = Bad and 7 = Good; 1 = Improper and 7 = Proper; 1 = Immoral and 7 = Moral). Value Orientation Level: High and low levels are created by median-splits of participants' responses to value orientation measures that match the value orientation in the firm disclosure that participants are exposed to. Firm Credibility: Participants receive high credibility and low credibility treatments of the firm making a disclosure.

Table 5. Main experiment: Means, standard deviations (SD) and participant numbers (#) by value orientation for the effects of value orientation level and firm credibility on intention to oppose the firm.

Value orientation in firm disclosure	Value orientation level	Firm credibility					
		High			Low		
		#	Mean	SD	#	Mean	SD
Altruistic	High	43	3.19	1.62	43	4.38	1.50
	Low	41	3.06	1.46	41	4.34	1.31
	Combined	84	3.13	1.53	84	4.36	1.40
Biospheric	High	40	3.08	1.22	40	4.30	1.29
	Low	35	2.30	1.09	35	3.63	1.53
	Combined	75	2.72	1.22	75	3.98	1.44
Egoistic	High	41	2.80	1.35	41	3.76	1.49
	Low	31	2.74	1.28	31	3.82	1.44
	Combined	72	2.77	1.31	72	3.78	1.46

Notes: Means and standard deviations (SD) for intention to oppose the firm are calculated based on an average of a five-item measure. Items include: "please indicate the likelihood that you would" ... sign a petition, participate in a protest against the waste plant. Items have 7-point scales with endpoints of 1 (Unlikely) and 7 (Likely). Value Orientation Level: High and low levels are created by median-splits of participants' responses to value orientation measures that match the value orientation in the firm disclosure that participants are exposed to. Firm Credibility: Participants receive high credibility and low credibility treatments of the firm making a disclosure.

the effects of value orientation level and firm credibility on judgement of firm legitimacy and intention to oppose the firm by value orientation.⁵ Firm credibility order is excluded from the analyses because the variable has non-significant effects on the dependent variables.

⁵2 × 2 mixed ANCOVA analyses were initially run to assess the effects of control variables: prior opinion about waste incineration and environmental knowledge. Control variable effects are non-significant across value orientations and dependent variables in all but one case. Prior opinion towards waste incineration has a statistically significant effect on judgement of firm legitimacy in the case of egoistic value orientation level ($F = 10.365$, $p = 0.002$, two-tailed), but the variable does not alter statistical effects of the independent variables – egoistic value orientation level or firm credibility. We therefore exclude control variables and report results of 2 × 2 ANOVA analyses.

Table 6. Main experiment: Mixed ANOVA analyses by value orientation for the effects of value orientation level and firm credibility on judgement of firm's legitimacy.

Value orientation in firm disclosure	Source of variation	df	Mean square	F-statistic	Two-tailed p-value
Altruistic	Value Orientation Level	1	0.050	0.016	0.898
	Error	82	3.026		
	Firm Credibility	1	31.134	38.821	0.000
	Firm Credibility×Value Orientation Level	1	1.102	1.374	0.244
	Error	82	0.802		
Biospheric	Value Orientation Level	1	0.063	0.036	0.850
	Error	73	1.759		
	Firm Credibility	1	29.458	43.376	0.000
	Firm Credibility×Value Orientation Level	1	0.538	0.792	0.376
	Error	73	0.679		
Egoistic	Value Orientation Level	1	0.554	0.407	0.526
	Error	70	1.364		
	Firm Credibility	1	27.255	31.710	0.000
	Firm Credibility×Value Orientation Level	1	0.012	0.014	0.906
	Error	70	0.859		

Notes: Dependent variable: Judgement of firm's legitimacy. Highlighted *p*-values show significant *F*-statistic results ($p < 0.05$). Value Orientation Level (High versus Low) is a between-subjects variable created by median-splits of participants' responses to value orientation measures that match the value orientation in the firm disclosure that participants are exposed to. Firm Credibility (High versus Low) is a manipulated within-subjects variable. *P*-values for Firm Credibility indicate that there is a significant difference in judgement of firm's legitimacy between high and low firm credibility conditions for each value orientation. Firm Credibility Order (High credibility first versus Last), a between-subjects variable, is not included in these mixed ANOVA analyses because the variable has non-significant main and interaction effects on judgement of firm's legitimacy across value orientations.

Table 7. Main experiment: Mixed ANOVA analyses by value orientation for the effects of value orientation level and firm credibility on intention to oppose the firm.

Value orientation in firm disclosure	Source of variation	df	Mean square	F-statistic	Two-tailed p-value
Altruistic	Value Orientation Level	1	0.286	0.084	0.772
	Error	82	3.400		
	Firm Credibility	1	63.585	65.973	0.000
	Firm Credibility×Value Orientation Level	1	0.075	0.078	0.780
	Error	82	0.964		
Biospheric	Value Orientation Level	1	19.450	7.975	0.006
	Error	73	2.439		
	Firm Credibility	1	60.249	67.396	0.000
	Firm Credibility×Value Orientation Level	1	0.114	0.128	0.722
	Error	73	0.894		
Egoistic	Value Orientation Level	1	1.399	0.000	0.998
	Error	70	2.991		
	Firm Credibility	1	36.731	40.117	0.000
	Firm Credibility×Value Orientation Level	1	0.144	0.157	0.693
	Error	70	0.916		

Notes: Dependent variable: Intention to oppose the firm. Highlighted *p*-values show significant *F*-statistic results ($p < 0.05$). Value Orientation Level (High versus Low) is a between-subjects variable created by median-splits of participants' responses to value orientation measures that match the value orientation in the firm disclosure that participants are exposed to. Firm Credibility (High versus Low) is a manipulated within-subjects variable. *P*-values for Firm Credibility indicate that there is a significant difference in intention to oppose the firm between high and low firm credibility conditions for each value orientation. Firm Credibility Order (High credibility first versus Last), a between-subjects variable, is not included in these mixed ANOVA analyses because the variable has non-significant main and interaction effects on intention to oppose the firm for each value orientation.

4.2.1. H1 & H2 (value congruence)

Results of the 2×2 mixed ANOVA analyses of the effects of value orientation level and firm credibility on legitimacy judgement in Table 6 show that value orientation level does

not significantly impact participants' legitimacy judgement. This result is consistent across value orientations: altruistic: ($F_{1,82} = 0.016$, $p = 0.898$, two-tailed; $M_{\text{High orientation}} = 3.76$, $M_{\text{Low orientation}} = 3.80$); biospheric: ($F_{1,73} = 0.036$, $p = 0.850$, two-tailed; $M_{\text{High orientation}} = 3.99$, $M_{\text{Low orientation}} = 3.95$); egoistic: ($F_{1,70} = 0.407$, $p = 0.526$, two-tailed; $M_{\text{High orientation}} = 4.37$, $M_{\text{Low orientation}} = 4.25$).⁶ Overall, these results indicate a lack of support for H1 that value congruence leads to higher legitimacy judgements.

2×2 mixed ANOVA analyses of the effects of value orientation level and firm credibility on intention to oppose the firm in Table 7 show that value orientation level does not significantly affect intention to oppose the firm across value orientations: altruistic: ($F_{1,82} = 0.084$, $p = 0.772$, two-tailed; $M_{\text{High orientation}} = 3.78$, $M_{\text{Low orientation}} = 3.70$); egoistic: ($F_{1,70} = 0.000$, $p = 0.998$, two-tailed; $M_{\text{High orientation}} = 3.28$, $M_{\text{Low orientation}} = 3.28$). For biospheric value orientation, orientation level, however, has a significant influence but not in the direction predicted by H2 ($F_{1,73} = 7.975$, $p = 0.006$, two-tailed; $M_{\text{High orientation}} = 3.69$, $M_{\text{Low orientation}} = 2.97$). These results indicate no support for the prediction in H2 that value congruence leads to lower intention to oppose the firm.⁷

On the whole, results of analyses indicate that exposure to a value congruent disclosure from a firm *does not have the predicted impacts* on individual's intention to oppose the firm and judgement of firm legitimacy. Firm disclosure congruent with biospheric value orientation increases (rather than decreases) the intention of individuals to oppose a firm.

4.2.2. H3a & H3b (firm credibility and value congruence)

Results of the $3 \times 2 \times 2$ mixed ANOVA analysis of value orientation in firm disclosure, value orientation level and firm credibility in Table 2 reveal that firm credibility has a significant main effect on judgement of firm legitimacy ($F_{1,225} = 112.183$, $p = 0.000$, two-tailed). Results of the 2×2 mixed ANOVA analyses of value orientation level and firm credibility in Table 6 similarly demonstrate the significant firm credibility effect on participants' legitimacy judgement across value orientations: altruistic: ($F_{1,82} = 38.821$, $p = 0.000$, two-tailed; $M_{\text{High credibility}} = 4.21$, $M_{\text{Low credibility}} = 3.35$); egoistic: ($F_{1,70} = 31.710$, $p = 0.000$, two-tailed; $M_{\text{High credibility}} = 4.76$, $M_{\text{Low credibility}} = 3.88$) and biospheric: ($F_{1,73} = 43.376$, $p = 0.000$, two-tailed; $M_{\text{High credibility}} = 4.42$, $M_{\text{Low credibility}} = 3.52$). These results support the main effect prediction in H3a that firm credibility leads to higher legitimacy judgements.

The 2×2 mixed ANOVA results in Table 6 also show that value orientation level by firm credibility interaction does not have a significant effect on judgement of firm

⁶Means (M) for H1 and H2 are not reported in the descriptive statistics in Tables 4 and 5 because means of main effects of the between-subjects variable (value congruence) in 2×2 mixed ANOVA models are estimated.

⁷Participants' responses to value orientation measures indicate negatively skewed distributions. High median values are consistently greater than mean values (altruistic-median: 6.50 vs -mean: 6.10; biospheric-median: 5.50 vs -mean: 5.36; egoistic-median: 6.00 vs -mean: 5.88). To address skewness concerns, value orientation levels are alternatively categorised by quartiles (value orientation levels are categorised by median-splits in the Tables), specifically the highest quartile (75th percentile) and lowest quartile (25th percentile) of participants' responses. Results of 2×2 mixed ANOVA analysis tests of H1 and H2 with the quartile categorisations show non-significant main effects of value orientation levels on judgement of firm legitimacy and intention to oppose the firm with one exception. The effect of egoistic value orientation level (highest vs lowest quartile) on judgement of firm legitimacy is statistically significant: ($F_{1,39} = 4.475$, $p = 0.041$, two-tailed; $M_{\text{High orientation}} = 4.69$; $M_{\text{Low orientation}} = 4.16$). Results of continuous measures of value orientations in mixed ANCOVA analysis tests show non-significant main effects of value orientation levels across value orientations and dependent variables.

legitimacy across value orientations: altruistic: ($F_{1,82} = 1.374, p = 0.244$, two-tailed); biospheric: ($F_{1,73} = 0.792, p = 0.376$, two-tailed) and egoistic: ($F_{1,70} = 0.014, p = 0.906$, two-tailed). Thus, results do not support the firm credibility and value congruence interaction predicted in H3a.⁸

For intention to oppose the firm, results of the $3 \times 2 \times 2 \times 2$ mixed ANOVA analysis in Table 3 shows that firm credibility has a significant main effect ($F_{1,219} = 169.554, p = 0.000$, two-tailed). The 2×2 mixed ANOVA analysis of value orientation level and firm credibility in Table 7 similarly demonstrates that firm credibility significantly affects participants' intention to oppose the firm across the value orientations: altruistic: ($F_{1,82} = 65.973, p = 0.000$, two-tailed; $M_{\text{High credibility}} = 3.13, M_{\text{Low credibility}} = 4.36$); egoistic: ($F_{1,70} = 40.117, p = 0.000$, two-tailed; $M_{\text{High credibility}} = 2.77, M_{\text{Low credibility}} = 3.78$) and biospheric: ($F_{1,73} = 67.396, p = 0.000$, two-tailed; $M_{\text{High credibility}} = 2.72, M_{\text{Low credibility}} = 3.98$). These results indicate support for the main effect prediction in H3b that firm credibility leads to lower intention to oppose the firm.

The 2×2 mixed ANOVA results in Table 7 also show that the value orientation level by firm credibility interaction does not have a significant effect on intention to oppose the firm across value orientations: altruistic: ($F_{1,82} = 0.078, p = 0.780$, two-tailed); biospheric: ($F_{1,73} = 0.128, p = 0.722$, two-tailed) and egoistic: ($F_{1,70} = 0.157, p = 0.693$, two-tailed). Thus, results do not support the interaction of firm credibility and value congruence predicted in H3b.

In sum, results show no support for firm credibility and value congruence interaction, but the firm credibility main effects are supported. That is, high firm credibility leads to higher legitimacy judgement and lower intention to oppose the firm compared to low firm credibility.

4.3. Tests of the extent to which high firm credibility can mitigate a legitimacy threat

Tests of H1-H3 demonstrate that value congruence has no effect on legitimacy judgements, but firm credibility does. This section provides evidence of further tests to *determine the extent* of effect of high firm credibility on legitimacy judgement and intention to oppose the firm.

In order to ascertain the extent to which high firm credibility *restores* legitimacy in the face of a legitimacy threat, we compare responses of participants in the high firm credibility condition from the main study with the negative news story and neutral news story conditions from the pretest. We considered legitimacy *fully* restored when the legitimacy judgements of participants in high firm credibility were not significantly different from legitimacy judgements of participants who had received only neutral news about the firm (as this condition reflected their judgement of the firm without any negative news about it), but significantly higher than judgements of participants who had received the negative news about the firm.

⁸Results of the highest vs lowest quartile categorisations of value orientation levels in the 2×2 mixed ANOVA analysis tests of H3a and H3b show non-significant interaction effects ($p > 0.05$) of value orientation level \times firm credibility. Results of continuous measures of value orientations in mixed ANCOVA analyses similarly show non-significant interaction effects across value orientations and dependent variables.

We considered legitimacy to be *partially* restored when legitimacy judgements of participants in the high firm credibility condition were significantly lower than judgements of participants who received only neutral news about the firm but were significantly higher than the judgements of participants who received only negative news about the firm (negative news story condition).

There is *no* restoration of legitimacy when legitimacy judgements of participants in the high credibility condition are significantly lower than judgements of participants who only received neutral information about the firm and is not significantly different from judgements of participants who only received negative news about the firm. The same differences between main study and pretest conditions apply to intention to oppose the firm, except that the direction of the mean is opposite.

4.3.1. Mitigation of a legitimacy threat: legitimacy judgement

Planned contrast tests⁹ show that participants in the high firm credibility condition have a significantly higher legitimacy judgement than those in the negative news story condition ($t_{388} = 5.93$, $p = 0.000$, two-tailed; $M_{\text{High credibility}} = 4.46$, $M_{\text{Negative}} = 3.64$). However, it is significantly lower than the judgement of those in the neutral news story condition ($t_{388} = 3.55$, $p = 0.000$, two-tailed; $M_{\text{High credibility}} = 4.46$, $M_{\text{Neutral}} = 4.96$). Therefore, when firm credibility is high, it can partially restore legitimacy judgement of the firm.

4.3.2. Mitigation of a legitimacy threat: intention to oppose the firm

Planned contrast tests show that participants in the high firm credibility condition have a significantly lower intention to oppose the firm than those in the negative news story condition ($t_{388} = 4.403$, $p = 0.000$, two-tailed; $M_{\text{High credibility}} = 2.87$, $M_{\text{Negative}} = 3.67$) and it is not significantly different from those in the neutral news story condition ($t_{388} = 0.228$, $p = 0.818$, two-tailed; $M_{\text{High credibility}} = 2.87$, $M_{\text{Neutral}} = 2.83$). Therefore, when firm credibility is high it can fully mitigate participants' intention to oppose the firm as a result of the legitimacy-threatening event.

4.4. Summary of findings

The results of the main study demonstrate that in the wake of an environmental controversy, value congruence fails to influence legitimacy judgement and intention to oppose the firm. However, further examination indicates that when firm credibility is high, not only does it significantly improve legitimacy judgement and lower intention to oppose

⁹We conduct two one-way ANOVA analyses for participant responses to dependent variable measures (judgement of firm legitimacy and intention to oppose the firm) completed by participants after they receive the high firm credibility treatment. We include the two pretest conditions – neutral news story and negative news story and the three value orientation in firm disclosure conditions (firm credibility is crossed with the firm disclosure conditions) from the main study in 5 level between-subjects one-way ANOVA analyses. We make two planned contrasts in each ANOVA: neutral news story vs the 3 value orientation in firm disclosure conditions (combined) and negative news story vs the 3 value orientation in firm disclosure conditions (combined). We obtain the effects of these two contrast tests on judgement of firm legitimacy and intention to oppose the firm after participants receive the high firm credibility treatment. We initially included control variables and value orientation measures in the analyses by using ANCOVA analyses. These variables do not change the statistical effects of contrast tests on dependent variables. We therefore exclude the variables from the analyses.

the firm, it also helps a firm partially restore legitimacy and fully mitigate intention to oppose the firm.

5. Discussion and conclusion

Our experimental investigation into one part of the complex messaging and response process – the role of value congruence (what firms say) and influence of firm credibility (what firms do) in legitimacy judgements and intention to oppose the firm – has provided some interesting results. First, the results demonstrate that negative publicity, in the form of a news report, can threaten a firm's legitimacy because it influences individuals to judge the actions of the firm as having lower legitimacy. They are also more inclined to act against the firm. This finding is consistent with research that has examined the effects of media reports on legitimacy perception (Aerts & Cormier, 2009).

Second, when a firm uses a “shared values” or value congruent disclosure (what firms say) to justify its actions after a negative publicity event, there appears to be no significant change in individuals' legitimacy judgements of that firm. Intention to oppose the firm does not significantly change for altruistic and egoistic values, while a disclosure congruent with a biospheric value orientation increases (rather than decreases) intention to oppose a firm. Value congruence disclosure effects do not become significant when the firm has high credibility compared to when it has low credibility. Overall, these value congruence results show that when exposed to a disclosure that is congruent with their environmental values, individuals who strongly endorse the same value orientation, have legitimacy judgements and behavioural intentions similar to those who do not strongly endorse those value orientations.

These results challenge the notion of value congruence in legitimacy – values may not play the central role presumed in the literature in defining and shaping legitimacy. Results link to a small body of critical work that questions the role of disclosures as symbolic tools of legitimation (Ashforth & Gibbs, 1990; Hahn & Lülfes, 2014). For instance, it has been suggested that when firms use self-serving disclosures, to address legitimacy threats, this leads to “the self-promoter's paradox” (Ashforth & Gibbs, 1990, p. 186). Such disclosures may not only fail to maintain or repair a firm's legitimacy, but also might engender increased societal scepticism and widen perceived legitimacy gaps (e.g. O'Dwyer, 2002).

Signalling theory may help to explain why the value congruence results are non-significant. Values are stable beliefs that are used as normative standards to guide actions (e.g. Rokeach, 1973). It can be argued that values only matter if firms convey those beliefs into actions (Ciulla, 1999). Thus, a firm's belief alone is a less convincing signal, as firms can express beliefs without using any resources to put beliefs into action.

The non-significant value congruent disclosure effects when firm credibility is high and when it is to low challenges findings in accounting and marketing research that disclosures of high credibility firms are more believable, i.e. have stronger effects on judgements and behaviours (e.g. Hirst et al., 1999). These results can be explained by studies in social psychology which show that effects of disclosures are not always enhanced by credibility. For example, the more individuals feel that their opinion on an issue will have unimportant consequences, the less inclined they are to engage in effortful message processing i.e. they are less likely to use message contents in making their

judgements, regardless of the credibility of the message source (Chaiken & Maheswaran, 1994).

Third, our firm credibility (what firms do) results demonstrate another interesting turn. Firm credibility significantly changes (increases) judgement of firm legitimacy and decreases intention to oppose the firm to the extent that it partly restores legitimacy judgements and fully mitigates behavioural intentions following a threat. The results demonstrate that for non-corporate stakeholders (e.g. Killian & O'Regan, 2016), legitimacy judgements depend upon what firms do – past performance. It is likely that this general tendency for high firm credibility to partially repair legitimacy judgements and mitigate intentions to oppose the firm stems from the buffering effect. This is where stakeholders are “more willing to give the benefit of the doubt to an accused firm that has a history of being perceived in a positive light” (Lamin & Zaheer, 2012, p. 59).

Different results for intention to oppose the firm (full mitigation) and legitimacy judgement (partial repair) indicate a gap between behaviour and judgement – a phenomenon extensively observed and discussed in ethics and psychology. For example, individuals may be more willing to revise their behavioural intention to oppose the firm than their legitimacy judgement, because behaviours require more commitment and effort than stating a judgement (e.g. Shaw et al., 2016). These credibility findings add to legitimacy theory in SER research, by demonstrating the importance of a firm's credibility in the construction of individual judgements of legitimacy. This research shows that both source *and* message credibility variables are needed to understand legitimacy.

Taking both value congruence and firm credibility into consideration, this research indicates something rather challenging – value congruent disclosures do not matter but firm credibility does. Thus, firms' past actions matter sufficiently to change stakeholders' judgements of legitimacy and intentions to oppose the firm, but what firms say about themselves – value congruent disclosures – do not impact stakeholders' legitimacy judgements or behavioural intentions.

This work contributes to the debate in the SER literature on the relative importance of what firms say compared with what they do (Aerts & Cormier, 2009), and contradicts recent work. For instance, Cho et al. (2015) suggest that symbolic talk can be beneficial because it can encourage firms to work towards what they promise. Another study by Cho et al. indicates that firms' membership in the Dow Jones Sustainability Index (DJSI) is positively related to what firms say (environmental disclosure) but not what they do (environmental performance) (Cho et al., 2012). The discrepancy with previous work can be partly attributed to two key factors: first, Cho et al. (2012) focuses on firms in environmentally sensitive industries, which is not the case in our research. Second, in Cho et al. (2012), DJSI membership is used as a proxy for firm reputation; in this research, legitimacy is measured in terms of individual stakeholders' judgements.

Methodologically, this study contributes to the legitimacy literature in two ways: one, we provide one of the few empirical studies to directly measure legitimacy; and two, we do so at the individual, rather than firm or societal level. We combine the well-established and reliable construct for measuring an individual's moral evaluation of a firm (Dabholkar & Kellaris, 1992) with additional endpoints. These additions encapsulate commonly employed adjectives in legitimacy theory (e.g. Suchman, 1995) and moral

judgement research – “undesirable/desirable”, “improper/proper” and “inappropriate/appropriate” to define a morally based legitimacy judgement. Our measure enables a deeper understanding of the process of legitimation (Owen, 2008) and a more focused framing of legitimacy theory (Unerman & Chapman, 2014).

Our results suggest some opportunities for future research. First, Shiu and Yang (2017) demonstrate that a firm’s positive environmental and social performance can protect its stock price in the first occurrence of a negative event but not following the occurrence of subsequent negative events. This suggests that repeated offences may undermine firm credibility, causing it to fail to mitigate potential threats. In our research we have only focused on a one-off negative incident, future research could investigate whether a firm’s credibility can mitigate legitimacy threats from a series of negative incidents.

Second, participants in our experiments were asked to assume a situation in which they would be directly affected by an environmental issue in their locality. Participants’ association with the legitimacy threat in our experiments is only one of many ways that individuals are impacted by threats. Future research should consider how different types of associations with legitimacy threatening-issues affects individuals’ reactions.

Third, participants’ value orientation scores are highly skewed towards the upper ends of the distributions, i.e. most participants scored high on value orientation measures. The resulting difference between high and low levels of value orientation levels, may not have been sufficient to observe value congruence effects in tests of our hypotheses. Future studies should consider alternative value orientation measures that ensure sufficient difference between high and low value orientation levels. Study participants, for example, could be asked to rank value orientations in order of importance.

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Appendix

Pre-stimulus variable measures

- **Prior opinion about waste incineration (control variable)** – Participants answered the following question: *Do you support or oppose incineration (the burning of waste) as a method of treating household waste?* Answer options to this question were on a seven-point Likert-scale anchored by 1 (Strongly oppose) and 7 (Strongly support).
- **Environmental knowledge scale (control variable)** – Environmental knowledge is calculated as the mean response to a ten-item scale based on Kaiser et al. (1999), with a Yes/No response. Items in the measure had been the subject of considerable public discussion in the past such as melting of polar ice caps, burning of fossil fuels. Items were thus updated to reflect topical

environmental issues such as ocean acidification, deforestation, nitrogen run-off and waste incineration, including incinerator emissions.

- **Environmental value orientations** – Participants responded to Schultz’s (2001) 12-item environmental concerns measure, which uses a seven-point Likert-scale response with endpoints of 1 (Not important) and 7 (Supreme importance). This scale uses four items each to measure egoistic, altruistic and biospheric value orientations. Factor analysis results showed the presence of three factors, each with an eigenvalue exceeding 1, that in total explained 77% of the variance. Factors were rotated using the oblique rotation approach (direct oblimin). Results suggest items measuring egoistic, altruistic and biospheric values strongly loaded (> 0.5) on the three factors, corresponding to the egoistic, biospheric and altruistic value dimensions of Schultz’s (2001) scale. The three sets of items demonstrated good reliability: Cronbach’s $\alpha = 0.88$ (biospheric value); Cronbach’s $\alpha = 0.89$ (altruistic value); Cronbach’s $\alpha = 0.91$ (egoistic value). Value orientations comprise the average responses to each of the four items.

Post-stimulus variable measures

- **Individual judgement of firm legitimacy (dependent variable)** – By assessing the moral dimension of evaluation at the individual level, it allows us to assess the normative content central to judgements of legitimacy. Thus, a direct measure of legitimacy was based on an adapted version of the six-point judgement scale originally developed by Dabholkar and Kellaris (1992) with three additional items to encapsulate morally based individual evaluations and reflect common terms in the legitimacy theory literature when defining legitimacy judgements (Suchman, 1995). Our scale comprised a nine-item measure and uses a seven-point Likert-scale response. Items in this scale are well established and tested as single- and multi-item measures of moral judgement (see Dabholkar & Kellaris, 1992; Mudrack & Mason, 2013). Six endpoints of our scale items were adjectives representing the endpoints of the Dabholkar and Kellaris scale: Unacceptable/Acceptable; Immoral/Moral; Bad/Good; Wrong/Right; Unethical/Ethical; Incorrect/Correct. Three other endpoints were added because the adjectives involved encapsulate morally based individual evaluations and reflect common terms in the legitimacy theory literature when defining legitimacy judgements (Suchman, 1995): Undesirable/Desirable; Improper/Proper; Inappropriate/Appropriate. The lowest and highest correlation values for items in our scale were 0.570 and 0.798, respectively. In addition, all these items loaded on a single factor with Cronbach’s $\alpha = 0.95$. Therefore, these data suggest our scale has high convergent and construct validities. We used the average response to the nine items in our analyses as indicative of participants’ legitimacy perceptions.
- **Intention to oppose the firm (dependent variable)** – A five-item measure with seven-point scales was used to measure individual behavioural intentions to oppose the focal firm. These items were adapted from Handelman and Arnold (1999). Sample statements included: *An online copy of the petition has been made available, please indicate the likelihood that you would sign this petition; Please indicate the likelihood that you would object to X Council about the proposed plant; Please indicate the likelihood that you would participate in a protest against X’s proposed waste plant.* Factor analysis results show the items loaded onto a single factor with Cronbach’s $\alpha = 0.90$. We used the average response to the five items in our analyses as indicative of intention to oppose the firm.
- **Firm credibility (manipulation check)** – We used an eight-item measure comprising four items each for trustworthiness and competence (Newell & Goldsmith, 2001). Sample statements included: *“XXX Company has a great amount of experience; XXX Company has great expertise; I trust XXX Company; XXX Company is honest”.* Factor analysis suggests items loaded on a two-factor structure – trustworthiness and competence, demonstrating good reliability, with Cronbach’s $\alpha = 0.91$ (trustworthiness) and Cronbach’s $\alpha = 0.86$ (competence). We used the average responses to trustworthiness and competence items in our analyses.