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Progress report on first year of WP5.2

Progress report on first year of WP5.2
(including detailed description of planned research for WP 5.2)

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(CATO-2 Director)

1 Executive Summary

This document contains the progress report on the first half year of the CATO-2 WP5.2 PhD project "Framing effects in communication about CCS". In the first few months, PhD student De Vries has conducted a literature study, both on (factors that influence) public perceptions and acceptance of CCS, and on framing. In the last two month, De Vries has designed a first study. This study consists of an experiment designed to examine how framing a company's involvement in CCS in terms of economic benefits and/or CSR of the organization affects the corporate image, trust, and perceived "greenwashing" (deceit). Furthermore, this experiment serves to test the quality of newly developed questionnaires to measure these variables.
In addition, this document contains a detailed description of the research planned for WP5.2 written by senior (CATO-2) researchers from January on. The objective of the research planned for WP5.2 is to examine whether framing of communications by an organization can improve the perceived credibility and trustworthiness of the organization and the information provided. This issue will be examined by a combination of experimental studies and a survey-type study.

Distribution List
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Document Change Record
(this section shows the historical versions, with a short description of the updates)

Version	Nr of pages	Short description of change	Pages

Table of Content

2 Applicable/Reference documents and Abbreviations

2.1 Applicable Documents

(Applicable Documents, including their version, are documents that are the "legal" basis to the work performed)

	Title	Doc nr	Version date
AD-01	Beschikking (Subsidieverlening CATO-2 programma verplichtingnummer 1-6843	ET/ED/9078040	2009.07.09
AD-02	Consortium Agreement	CATO-2-CA	2009.09.07
AD-03	Program Plan	CATO2-WP0.A-D.03	2009.09.29
AD-04	Program Plan Annex 2 Deliverables	CATO2-WP0.A-D03-Program-Plan-Annexes - Restricted.xls / Annex2-Deliverables	2010.05.31
AD-05	Program Plan Annex 3 PhD List	CATO2-WP0.A-D03- Program-Plan-Annexes - Restricted.xls / Annex3-PHD	2010.05.31

2.2 Reference Documents

(Reference Documents are referred to in the document)

	Title	Doc nr	Issue/version	date

2.3 Abbreviations

(this refers to abbreviations used in this document)

SP	Sub-program
WP	Work Package
EB	Executive Board
N/A	Not applicable
CCS	Carbon dioxide capture and storage
CSR	Corporate social responsibility

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3 Progress report on the first half year of WP 5.2

Reporting period: March 15th 2010 - August 31th 2010
Work Package: 5.2
Title: Framing effects in communication about CCS
WP leader: Prof. Dr. Naomi Ellemers, Leiden University
SP leader: Dr. Dancker Daamen, Leiden University
Participants: Leiden University, NUON

Main objectives of WP5.2

The objective of WP5.2 "Framing effects in communication about CCS" is to examine whether framing of communications provided by an organization can improve the perceived credibility and trustworthiness of the organization and information provided. This objective will be pursued by examining (1) how framing communications about CCS activities in terms of Corporate Social Responsibility (CSR) affects the image of the organization in question, and (2) how gain-frames vs. loss-frames affect public responses to CCS activities. These issues will be examined by a combination of experimental studies and a survey-type study.

With regard to the first issue (framing of CCS activities in terms of economic benefits vs. benefits for Corporate Social Responsibility), a survey study will examine current views of the general public with respect to the perceived relation of CCS activities of specific organizations with economic concerns on the one hand and CSR concerns on the other. These perceived concerns will in turn be related to the perceived trustworthiness and credibility of communications and decision-making of the organization in question. Several experiments will be carried out to examine the effectiveness of potential interventions aimed at improving the corporate image by framing their CCS activities in different ways.

The second issue will be examined with similar procedures. This research will assess the extent to which the general public currently tends to perceive CCS activities in terms of gains (e.g., focusing on potential benefits of CO_2 capture) or losses (e.g., focusing on potential risks of CO_2 storage), and how this relates to their acceptance of decision outcomes and willingness to support CCS activities. Experimental studies will systematically examine the effects of providing different frames (i.e., focusing on CO_2 capture vs. storage, and focusing on potential gains vs. losses more generally) on the willingness of the general public to support CCS activities. Note that this research concerns proposed research; adjustments may be made depending on progressed insights and outcomes of the studies.

Progress

PhD student Gerdien de Vries (MPhil.) started working on this project on March 15th 2010. In the first few months, she conducted a literature study, both on (factors that influence) public perceptions and acceptance of CCS, and on framing. In the last two month, she has designed a first study. This study consists of an experiment to examine how framing a company's involvement in CCS in terms of economic benefits and/or CSR of the organization affects the corporate image, trust, and perceived "greenwashing" (deceit). Furthermore, this experiment serves to test the quality of newly developed questionnaires to measure these variables. Data collection for this study is currently in progress.

Key decisions taken (go - no go)

None

Main problems encountered (delays, …)
None

Changes in workplan?
None

Patents applied for
None

Organizational aspects
This PhD project is supervised by Prof Dr. Naomi Ellemers (promotor) and Dr. Bart Terwel (co-promotor).

Internal WP meetings held (results?)
Weekly WP 5.2 meetings at Leiden University. Progress of and next steps in the project are discussed within the research group (De Vries, Ellemers, Terwel - occasionally accompanied by Daamen, Ter Mors, and/or Koot)

Relevant meetings with external parties (results?)
None

Personnel changes
Appointment of Gerdien de Vries at CATO2 WP 5.2 (March 15th 2010-March 14th 2014)

Deliverables due

Deliverable	Title	Due date	Status/remark
CATO2-WP5.2-D01	Progress report on first half year of this PhD project (including detailed description of planned research written by senior researchers)	31/Aug/2010	Report delivered on August 31, 2010. Public.
CATO2-WP5.2-D02	Progress report on the first year of this PhD project	15/Mar/2011	Public
CATO2-WP5.2-D03	Paper on: Framing effects in communication about CCS	31/Aug/2011	Public
CATO2-WP5.2-D04	Paper on: Framing effects in communication about CCS	Year 3	Public
CATO2-WP5.2-D05	Paper on: Framing effects in communication about CCS	Year 4	Public
CATO2-WP5.2-D06	PhD thesis on: Framing effects in communication	Year 5	Public

	about CCS		

Workshops held, or expected
N/A

Presentations and papers
N/A

Presentations held: where, when, which subject?
N/A

Presentations submitted
N/A

Presentations accepted: where, when, which subject?
N/A

Interviews given: where, when, published?
N/A

Papers submitted: title, journal, date
N/A

Papers accepted: title, journal, date
N/A

Need for actions / decisions by CATO management or Steering Committee
None

4   Detailed description of planned research for WP 5.2

Project title: Framing effects in communication about CCS
Duration of the project: March 15 2010 – March 14 2014
PhD student: Gerdien de Vries
Supervisors: Prof. Dr. Naomi Ellemers (WP leader), Dr. Bart Terwel – Leiden University

Abstract

Public acceptance is a crucial precondition for successful implementation of CCS. However, members of the public generally lack the knowledge necessary to judge these (often complex) technologies on their merits and often lack the motivation to reach an informed opinion. Therefore, public acceptance is heavily influenced by how organizations communicate about CCS. An important element of organizational communications is the way information is framed. Framing is a tool that a communication source uses to present an issue to its audience in different ways. The literature on framing is dispersed and little systematic knowledge has been developed about the psychological factors underlying framing effects.

The research proposed in WP5.2 aims to integrate research from different scientific domains and to gain insight into the psychological factors that determine the impact of framing on the effectiveness of organizational communications about CCS. Organizational communications can be considered effective when the image of the communication source is influenced positively, the information about the issue is perceived to be credible, and/or the receiver (the general public) is willing to accept the message. Accordingly, we examine the effects of frames on organizational communications by distinguishing three main aspects involved in framing, namely with respect to (1) the communication source (in terms of corporate social responsibility of the organization), (2) the issue (potential advantages and disadvantages), and (3) the decision process (policymaking).

Introduction

There is increasing scientific and political debate about how to deal with the environmental problems facing the world today (e.g., climate change). In addition to environmental nongovernmental organizations (NGOs), industrial organizations also recognize the need to participate in this debate and to adjust their corporate policies accordingly. Among other things, this is because environmental NGOs traditionally accuse industrial organizations of being mainly concerned with profit maximization and being inconsiderate to the environmental consequences of their actions. Such accusations have been shown quite effective to create public opposition to corporate actions. An example is the Brent Spar case. In this instance, environmental NGO Greenpeace accused industrial organization Shell of being inconsiderate to the environmental effects of the offshore disposal of Brent Spar (Shell's decommissioned oil storage and tanker loading buoy) and of being only motivated by the fact that this was the cheapest disposal option. Eventually, Shell had to give up its plan as a result of the public opposition generated by Greenpeace, even though an environmental assessment showed that the environmental consequences of offshore disposal were negligible (e.g., Löfstedt & Renn, 1997).

Due to the apparent effectiveness of such accusations, industrial organizations have become increasingly aware of the need to engage in policymaking based on the corporate social responsibility (CSR) principle, or to communicate how their actions speak to CSR (Porter & Kramer, 2006). CSR means that instead of solely focusing on profit maximization, companies consider the social aspects of corporate policies, thus also taking into account people and planet ("the triple P bottom line"). Indeed, several industrial organizations are in fact actively involved in the development of CCS (and other measures such as sustainable energy technologies). This is relevant to the CSR principle to the extent that CCS will have both significant environmental,

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economic, and social implications. An industrial organization may avoid accusations of being inconsiderate to the societal consequences of their actions by communicating that it takes environmental and social consequences into account in its policymaking. At the same time, stated concern for the environment may instigate suspicion of "greenwashing"—strategically trying to build public support by spinning corporate actions as being environmentally friendly (Laufer, 2003).

The Brent Spar case suggests that a lack of public acceptance could severely reduce the viability of CCS, but it also shows that organizations are able to influence public opinions by framing their communications one way or the other. Indeed, several studies have shown that public opinions on newly developed technologies are heavily influenced by how parties concerned with the technology frame their communications on the issue (e.g., Chong & Druckman, 2007b; Cobb, 2005; Druckman & Bolsen, 2009; Scheufele, 2004). This is particularly true because members of the public generally lack the knowledge necessary to judge modern environmental technologies on their merits and may also lack the motivation to reach an informed opinion, which make them susceptible to persuasion attempts.

This project aims to integrate research from different scientific domains to develop a coherent cross-disciplinary understanding of framing in communication. Framing has been studied from a variety of separate perspectives, including marketing (e.g., Sen & Bhattacharya, 2001), political sciences (e.g., Druckman, 2001, 2004) and communication sciences (e.g., Lecheler, de Vreese, & Slothuus, 2009). However, this research has not systematically taken advantage of theories and methodological developments in psychology (see Scheufele, 2004). As a result, the underlying psychological processes and factors that determine the impact of frames on the effectiveness of organizational communications have remained unclear. In this project, we will systematically examine the psychological processes involved by distinguishing three aspects of framing, relating to (1) the communication source, (2) the issue, and (3) the decision procedure.

(1) The communication source (CSR of the organization)

The first research question is whether organizational communications about CCS are more effective when framed as part of the corporate social responsibility (CSR) of the organization. Some marketing researchers suggest that people tend to evaluate an organization more favorably when it engages in CSR activities (e.g., Sen & Bhattacharya, 2001). Therefore, industrial organizations may be tempted to frame their involvement in the development of environmental measures (including CCS) as being part of their CSR policy. On the other hand, framing communications in terms of CSR may easily backfire. That is, people sometimes tend to evaluate an organization more negatively when it supports CSR activities that are relevant to the company's core business because it increases the likelihood that people doubt the organization's motives to engage in CSR (Yoon, Gürhan-Canli, & Schwarz, 2006) and suspect "greenwashing" (Laufer, 2003). This project addresses the psychological factors underlying the impact of framing communications in terms of CSR on the effectiveness of such communications.

Trustworthiness. Whether or not organizations frame their communications in terms of CSR is a form of emphasis framing (Druckman, 2001). Effects of emphasis framing have mainly been examined in terms of public preferences, but not in terms of perceived trustworthiness of the communication source. Yet, we do know that trustworthiness is important, as this influences the degree to which people are willing to rely on the judgments of organizations (Terwel, Harinck, Ellemers, & Daamen, 2009a). Therefore, we will examine the impact of framing on effectiveness of organizational communications in terms of trustworthiness. We predict that the image and trustworthiness of a company is influenced positively when its communications about CCS are also framed in terms of economic value rather than only in terms of environmental responsibility, because the organization is regarded as more sincere and trustworthy *(Hypothesis 1a).*

Acknowledgment of responsibility. We further propose that people evaluate an organization more positively when they do not suspect greenwashing. Suspicions of greenwashing turn on elements of deception (Laufer, 2003), and people's attitudes towards

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organizations are likely to be influenced negatively when they perceive deception (even when there is none; Jehn & Scott, 2008). Since the motives that people attribute to the communication source play a large role in their evaluations (Jehn & Scott, 2008; Terwel, Harinck, Ellemers, & Daamen, 2009b; Yoon et al., 2006), we propose that organizations can avert perceptions of deceit by acknowledging responsibility for causing the environmental problem as a motivation to engage in CSR *(Hypothesis 1b)*.

Counter framing. Previous framing research has ignored more interactive aspects of communications. In reality, information is often not provided in isolation, especially when different parties are involved. For example, in the Brent Spar case, Shell tried to restore its image by replying to Greenpeace's initial accusations. This can be called "counter framing"—the ability to alter the influence of an initial frame by providing an alternative or opposing frame. It can be argued that a counter frame would generally be remembered better than the initial frame because the counter frame is more likely to stay in working memory due to recency effects (e.g., Zaller & Feldman, 1992). This would suggest that a counter frame will dominate the influence of the initial frame.

However, we propose that the impact of a counter frame on the effectiveness of organizational communications depends on the trustworthiness of the source providing the counter frame, which is based on the idea that people are more willing to rely on the judgments of organizations that they trust (Terwel et al., 2009a). In the context of CCS, industrial organizations are generally trusted less than environmental NGOs (Terwel et al., 2009b), which is likely to depend on the fact that people more strongly identify with NGOs than with industrial organizations (cf. Harinck & Ellemers, 2006). Accordingly, we hypothesize that communicating a counter frame will be considered less credible and will therefore be less effective when this is done by industrial organizations, as compared to NGOs, regardless of recency effects *(Hypothesis 1c)*.

(2) The issue (framing advantages and disadvantages)

There are multiple advantages and disadvantages associated with CCS. The organizations involved have to choose which ones, and how many, they communicate to the general public. Communication scientists tend to mainly consider the content of the message and may hence argue that it is best to enumerate the advantages and to restrict the disadvantages. Indeed, organizations may be tempted to emphasize as many advantages (i.e., the more the better) and as few disadvantages as possible to persuade members of the general public to accept the technology (Basu & Palazzo, 2008; Druckman & Bolsen, 2009). Based on insights in psychology, however, we propose that organizational communications that emphasize multiple advantages may be less effective than communications that emphasize a single advantage only.

Strength of frames. Research has shown that strong frames are more influential than weak frames (Chong & Druckman, 2007a). A strong frame is compelling and persuasive while a weak frame is typically seen as unpersuasive (Chong & Druckman, 2007a). Several factors have been found to affect persuasion, including personal relevance and national importance (Lecheler et al., 2009; Petty, Cacioppo, & Goldman, 1981; Stroebe, Baretto, & Ellemers, 2010), which may hence be relevant determinants of frame strength. Whereas the effects of frame strength have mainly been studied in contexts in which both advantages and disadvantages were provided (i.e., two-sided frames), we will address the relative impact of weak versus strong frames when only advantages *or* disadvantages are provided (i.e., one-sided frames).

Positive and negative frames. One would expect that in the case of one-sided communications, public attitudes toward CCS will covary with the number of frames in which (dis)advantages of the technology are emphasized, regardless of whether these frames differ in strength. That is, providing multiple disadvantage frames should logically result in less favorable opinions about CCS as compared to providing only one disadvantage frame. Similarly, presenting multiple weak and strong advantage frames should have more impact on people's attitudes than presenting a strong advantage only. However, we predict that this additive effect occurs with disadvantage frames, but not (or to a lesser extent) with advantage frames. This is because

people tend to mathematically average their ratings of each of these advantages into a single rating (the average of all separate ratings; Anderson, 1981; Skowronski & Carlston, 1989). This indicates a cognitive bias (i.e., dilution effect), in the sense that providing a weak advantage frame in addition to a strong advantage frame should logically result in more positive evaluations of CCS. However, based on the averaging principle, it would be more effective to communicate only the strong frame, instead of also expressing weaker frames. In addition to this reasoning, additional psychological processes may come into play, such as that enumerating multiple advantages may also make people suspicious (i.e., too good to be true; cf. Fein, 1996). However, we further expect that people are less likely to fall victim to the averaging bias in the case of multiple disadvantage frames. That is, information about disadvantages is generally processed more systematically, which is on of the reasons why the power of persuasion seems to differ for positively and negatively framed messages (Cobb, 2005; Maheswaran & Meyers-Levy, 1990). As a result, people will be less susceptible to the cognitive averaging bias.

As such, one might expect that the more information provided the more impact it will have. However, we expect this to be true only for CCS information about disadvanteges and not for information about advantages because of dilution due to averaging and suspicion. Accordingly, we hypothesize that communicating multiple strong and a weak disadvantage frames simultaneously increases the effectiveness of organizational communications, as compared to communicating one strong disadvantage frame only (*Hypothesis 2a*), while communicating multiple strong and weak advantage frames together is expected be less effective than communicating only strong advantage frame only (i.e., less is more) (*Hypothesis 2b*).

(3) Framing the decision process (policymaking)

In addition to issue framing and framing organizational communications in terms of CSR, the decision-making procedure used to arrive at CCS policy decisions can be the subject of framing (cf. Besley & McComas, 2005). An important element of decision-making procedures is whether or not interested parties receive an opportunity to voice their opinions in the decision-making process (Terwel, Harinck, Ellemers, & Daamen, 2010). In political science, voice is considered a central element of democracies. Psychological theories of procedural justice (e.g., Lind & Tyler, 1988; Thibaut & Walker, 1975) take the concept to the personal level and suggest for instance that voice affects how people see themselves in relation to the decision maker, thus emphasizing the social functions of voice. That is, people who receive voice feel that their input and opinions are valued and that the decision maker respects them. As a result, people are more willing to accept policy decisions (even when the decision made is not the decision they would have preferred; Tyler & Folger, 1980). The social function of voice is particularly relevant because of the importance attached to perceived morality (e.g., being treated respectfully by a decision maker) and the motivation to comply with moral norms (cf. Boezeman & Ellemers, 2008; Ellemers, Pagliaro, Baretto, & Leach, 2008; Leach, Ellemers, & Barreto, 2007).

Voice in environmental decision making. Recent research in the area of CCS policymaking has shown that people more readily accept policy decisions if these are based on fair voice procedures, because such procedures indicate that the decision maker is trustworthy (Terwel et al., 2010, also see Stahl, Vermunt, & Ellemers, 2008). We hypothesize that when organizations frame their policymaking about the development of CCS in terms of a decision-making procedure in which voice (rather than no voice) was given, people will evaluate the organization more positively and will be more inclined to accept proposed policies (*Hypothesis 3a*). Extending prior research however, we also propose that although voice has often been found to have positive consequences, giving voice may also instigate skepticism in the public mind that in fact "pseudo voice" is offered and may hence backfire.

Pseudo-voice. Perceived pseudo voice can be defined as the extent to which people perceive decision makers to create an illusion of voice opportunity, without the intention to actually use their input (De Vries, Jehn, & Terwel, 2010). We suggest that perceived deceit (i.e., perceived immorality) will play a significant role in explaining public reactions to pseudo voice (cf.

Jehn & Scott, 2008). We predict that people who suspect pseudo voice will feel deceived which, as a result, reduces the effectiveness of organizational communications about the decision procedure, even when compared to decision procedures in which no voice is offered (*Hypothesis 3b*). Thus, contrasting prevailing convictions, we aim to show that giving voice opportunity can also have negative effects.

Framing policies in terms of loss and gain. We will further examine whether framing the policy problem in terms of gains and losses influences the effectiveness of organizational communications about the decision procedure. Psychological theories suggest that casting the same information in either a positive or negative light affects people's attitudes and policy preferences (Tversky & Kahneman, 1981). We propose that whether CCS is framed as a gain (e.g., a technology that helps to reduce global warming by removing CO_2 from the air) or as a loss (e.g., a technology to store CO_2 underground with risks for public health) influences how people respond to decision procedures in which (no) voice is given or pseudo voice is suspected. That is, we expect people to value voice to a greater extent if the issue is framed as a potential loss than as a potential gain. More specifically, we predict that the effects of type of decision procedure (including the negative effects of perceived pseudo voice) are stronger when the technology is framed in terms of potential loss rather than gain *(Hypothesis 3c)*.

Scientific and practical importance

The aim of this project is to examine psychological processes and factors that determine the impact of framing on the effectiveness of organizational communications. The proposed research contributes to framing literature by offering a systematic analysis of psychological processes relating to three main aspects of framing, namely with respect to the communication source (in terms of corporate social responsibility), the issue (advantages and disadvantages), and the decision process (policymaking). This is important because previous framing research has mainly focused on the impact of communication frames on public attitudes toward an issue, without paying systematic attention to the psychological processes underlying such effects, hence leaving pitfalls and remedies unidentified. We will consider the processes that are responsible for (1) how framing communications in terms of CSR influences the effectiveness of organizational communications, (2) how multiple frames about advantages and disadvantages affect public attitudes and preferences, and (3) how framing the decision process affects the effectiveness of organizations communications. By doing so, we aim to integrate and extend framing research as conducted within a variety of scientific disciplines (e.g., marketing, communication sciences, political sciences) to develop a single coherent scientific framework that includes these three distinct aspects involved in framing.

From a practical perspective, it is important to realize that public perceptions and attitudes toward CCS not solely depend on the technical aspects or the pros and cons of the technology. Instead, how people think of CCS will to a considerable extent depend on their perceptions of the communication source, the message communicated, and the decision process. Organizations involved in the development of CCS may frame their communications on each of these issues in an attempt to influence public perceptions and attitudes. By raising awareness of the impact of different aspects and concerns in communication, the findings from this project will be relevant for different types of stakeholders, including companies, policy makers and the general public. Since only little attention has been given to psychological processes in (mass) communication, we expect to raise awareness especially in this domain. The project helps CCS organizations and policy makers to understand when relevant information is perceived as credible by members of the general public (and when it is not), and which psychological mechanisms play a role. These results are relevant to the general public to the extent that developing insights into the psychological processes that affect the effectiveness of organizational communications about CCS increases the likelihood that people will be able to optimally process information and will benefit from this information in forming their opinions (without suspicion of being persuaded or

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manipulated). We aim to provide useful strategies for improvement of CCS communications about both the issue and the decision-making process.

Method

Framing effects have been studied from a variety of scientific perspectives, but a systematic analysis of the underlying psychological processes and factors that determine whether and how frames impact the effectiveness of organizational communications is lacking (Scheufele, 2004). A combination of experimental research and field research will be used. The field research enables us to explore initial support for our reasoning and serves to pre-test the strength and ecological validity of the frames used in subsequent experiments. The experimental research enables us to examine causal relations between the variables under controlled conditions, and to quantify their isolated and combined effects.

(1) Communication source (CSR of the organization)

Study 1a: A field study will serve to examine public perceptions of CSR and corporate reputations of CCS stakeholders. This study will also serve to pre-test the strength of possible communication frames to be used in subsequent experiments. A sample of the Dutch general public will be invited to complete a questionnaire.

Study 1b: This study examines how the image and perceived trustworthiness of an organization are influenced by framing its communications about CCS in terms of economic value (profit frame) or environmental commitment (CSR frame). The experiment uses a 2 (profit frame: yes vs. no) by 2 (CSR frame: yes vs. no) between-subjects design. The main dependent variables are perceived trustworthiness of the source, perceived greenwashing, and the image of the organization. We hypothesize that the image of an organization is influenced positively when its communications about CCS are framed in terms of economic value rather than in terms of environmental commitment, because the organization is regarded as more sincere and trustworthy *(Hypothesis 1a)*.

Study 1c: This study examines the impact of acknowledging responsibility and stated environmental commitment (i.e., a CSR frame) on perceived greenwashing and trustworthiness of the source. The experiment uses a 2 (CSR frame: yes vs/ no) by 2 (acknowledging responsibility: yes vs. no) between-subjects design. The main dependent variables are perceived greenwashing and trustworthiness of the source, and the corporate image. We hypothesize that expressed environmental commitment positively affects the corporate image and reduces suspicion of greenwashing only when it acknowledges direct responsibility for the environmental problem (i.e., being responsible for CO_2 emissions), as compared to when it does not acknowledge direct responsibility *(Hypothesis 1b)*.

Study 1d: This study examines whether organizations can effectively counter frame communications after being accused of greenwashing, thereby focusing more on the interactive aspects of communications about CCS. The experiment uses a 2 (source of accusation: environmental NGO vs. industrial organization) by 2 (framing order: providing the initial frame vs. providing the counter frame) between-subjects design. The main dependent variables include perceived credibility of the message, perceived trustworthiness of the organizations, and identification with the source. We hypothesize that providing a counter frame after being accused of greenwashing will only be effective if the source of the accusation is another industrial organization (and not if the organization that accuses is an NGO due to high levels of public trust in this type of organization) *(Hypothesis 1c)*.

(2)The issue (advantages and disadvantages)

Study 2a: This is a study to identify factors that determine the strength of different advantage and disadvantage frames. We expect frame strength to depend on nation importance and personal relevance, but other factors may have an influence as well (e.g., scientific evidence). The study will serve as a pretest to determine the strength of frames used in the next experiment.

Study 2b: This study tests the hypotheses that presenting multiple advantage frames that differ in frame strength will be less effective than presenting only a single strong advantage frame (*Hypothesis 2a*), but that presenting multiple disadvantage frames that differ in frame strength will be more effective than presenting only a single strong disadvantage frame (*Hypothesis 2b*) The experiment has a 2 (direction of frame: advantage vs. disadvantage) by 2 (number of frames: single vs. multiple) between-subjects design. The main dependent variables are public perceptions of CCS, people's willingness to accept a message, and perceived trustworthiness of the source.

(3) The decision process (policymaking)

Study 3a: This experimental study compares people's reactions to different frames of the decision process concerning CCS: no voice vs. voice vs. pseudo voice. The dependent variables are image of the communication source, acceptance of the proposed policy, perceived fairness, and perceived trustworthiness. We predict that the image of the organization and policy acceptance are influenced positively after a voice procedure, as compared to a no voice procedure (*Hypothesis 3a*). However, we also predict that people who suspect pseudo voice form a more negative image of the communication source, and show less acceptance of the proposed policy than when no voice is given because they feel deceived (*Hypothesis 3b*).

Study 3b: This study tests the prediction that whether CCS is framed in terms of a potential gain or loss influences people's reactions to how the decision process is framed. The study uses a 2 (issue frame: gain vs. loss) by 3 (procedure: no voice vs. voice vs. pseudo voice) between-subjects design. The main dependent variables are willingness to voice opinions, perceived fairness, perceived trustworthiness of the source, and acceptance of the proposed policy. We hypothesize that people value voice to a greater extent when the policy issue is framed as a potential loss, as compared to a potential gain (*Hypothesis 3c*). As a result, if the policy issue is framed a potential loss rather than a potential gain, we expect people to display more negative reactions when they suspect pseudo voice and more positive reactions when they think that 'true' voice is given (*Hypothesis 3d*).

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