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The Role of Compensatory Beliefs in Rationalizing Environmentally Detrimental Behaviors

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Abstract

Compensatory green beliefs (CGBs) reflect the idea that a pro-environmental behavior (e.g., recycling) can off-set the negative effects of an environmentally detrimental behavior (e.g., driving). It is thought that CGBs might help explain why people act in ways that appear to contradict their pro-environmental intentions, and inconsistently engage in pro-environmental behaviors. The present study sought to investigate the nature and use of CGBs. A series of interviews suggested that participants endorsed CGBs to (a) reduce feelings of guilt with respect to (the assumed or actual) negative environmental impact of their actions and (b) defend their green credentials in social situations. Participants also justified detrimental behaviors on the basis of higher loyalties (e.g., family's needs), or the perceived difficulty of performing more pro-environmental actions. In addition to shedding light on how, when, and why people might hold and use CGBs, the research also provides new insight into how CGBs should be assessed.

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Most people are inconsistent in their engagement in pro-environmental behaviors (Lynn, 2014). For example, they may carefully recycle their household goods, but then fly abroad on holiday. There is, therefore, a need to find ways to better understand and promote sustained engagement in pro-environmental behaviors (American Psychological Association, 2015). One current topic of interest in this regard is "spillover" (see, Nilsson, Bergquist, & Schultz, 2017). Spillover is the extent to which engaging in one behavior influences the likelihood of engaging in a subsequent behavior. This may be a different behavior, or the same behavior enacted in a different time or context (Austin, Cox, Barnett, & Thomas, 2011; Nilsson et al., 2017). For example, those introducing a recycling scheme at work might anticipate that this will lead employees to recycle at home. Nurturing "positive spillover" effects is a potentially cost-effective means of reducing the environmental consequences of human activity (see Department for Environment, Food & Rural Affairs [DEFRA], 2008).

Although there are good reasons to expect that encouraging people to engage in one pro-environmental behavior will drive them to engage in other pro-environmental behavior (e.g., cognitive dissonance theory, Festinger, 1957; self-perception theory, Bem, 1972), sometimes the opposite is found. "Negative spillover" effects refer to circumstances where the performance of one behavior (e.g., recycling) reduces the likelihood that someone will perform a complementary behavior (e.g., conserve water; for reviews, see Dolan & Galizzi, 2015; Nilsson et al., 2017). Thus, whereas positive spillover is generally desirable and explains consistencies in people's behavior, negative spillover is typically more problematic, explaining not only the inconsistencies in people's pro-environmental (and other) actions but also the limited effects of some behavior change interventions.

According to a recent conceptual review, negative spillover in environmental behavior is related to notions of "rebound" and "moral licensing" (see, Nilsson et al., 2017). In the context of environmental actions, rebound effects typically refer to situations where technological advancements (e.g., making goods more efficient) not only reduce costs but also—potentially as a consequence—increase use, and so the net impact on the environment is unchanged (e.g., Alcott, 2005; Berkhout, Muskens, & Velthuijsen, 2000; Sorrell, 2009). For example, someone might purchase a new, more fuel-efficient car, but drive it more frequently because the costs of running the car are

reduced. It is also possible for rebound effects to be "indirect," whereby savings resulting from one behavior increase a different behavior. For example, by conserving energy at home, individuals might save money on their household bills, but then spend these savings on air travel (see, for example, Chitnis, Sorrell, Druckman, Firth, & Jackson, 2013; Sorrell, 2009).

Psychological processes, such as moral licensing, may underlie such rebound effects. Moral licensing is a form of self-licensing (Miller & Effron, 2010), where a moral action is seen to permit a subsequent immoral action (Nilsson et al., 2017). For example, individuals might use their efforts to conserve energy at home (a relatively moral behavior) to justify their decision to drive a desirable but inefficient car (a less moral action). Thus, people seem to use a kind of moral bank account, whereby "good" deeds yield credit that is then redeemed against later "bad" deeds (see, Dolan & Galizzi, 2015). The term *moral licensing* is generally used to refer to situations where the performance of a "good" behavior (X) is used to justify a later "bad" behavior (Y). However, there is also evidence that things can work the other way around—namely, that people sometimes seek to atone for (or purge) an initial "bad" behavior (Y) by performing a "good" behavior (X) later (see Dolan & Galizzi, 2015). Like licensing, this "purging" might explain apparent inconsistencies in people's moral behavior (including pro-environmental behavior).

Although a number of studies support the impact of moral licensing on environmentally significant behavior, the psychological processes underlying such licensing are not yet fully understood (Blanken, van de Ven, & Zeelenberg, 2015; Nilsson et al., 2017). There is, though, evidence that "permitting" and "purging" spillovers could be driven by a form of "compensatory ethics" designed to maintain a particular self-image in response to a perceived threat (Zhong, Ku, Lount, & Murnigham, 2010). In short, these behaviors could result from people trying to strike a balance between conflicting goals and desires (e.g., enjoying driving an inefficient, but glamorous, car and wanting to also be seen as concerned about the environment). The current research was, therefore, designed to learn more about the way(s) that people rationalize, justify, or license behavior(s) that have a negative impact on the environment.

Compensatory Beliefs

People often use compensatory beliefs as a way of rationalizing (or justifying) behaviors that are not in line with their values or long-term goals (Knäuper, Rabiau, Cohen, & Patriciu, 2004; Rabiau, Knäuper, & Miquelon, 2006). Much of the work to date has been conducted in relation to health

goals where, for instance, people evoke such beliefs as a means of condoning unhealthy behavior. For example, Monson, Knäuper, and Kronick (2008) found that dieters spontaneously generated compensatory beliefs when faced with tempting but highly calorific foods (e.g., planning to eat less at their next meal). Compensatory beliefs are, therefore, considered to be a cognitive strategy for those seeking an "optimal balance between maximising pleasure and minimizing harm" (Rabiau et al., 2006, p. 139). They offer an appealing solution to individuals experiencing goal conflict (e.g., to be healthy, to experience pleasure), enabling them to act in a way that is incongruent with one of the goals, while also retaining the belief that they are still committed to that goal. For this reason, compensatory beliefs can be seen as a means by which people maintain a positive self-image while engaging in behaviors that conflict with their longer term goals (Dolan & Galizzi, 2015).

Just as there are situations in which people are tempted to justify engaging in unhealthy behaviors, there are also likely to be situations in which people feel the need to justify engaging in environmentally detrimental behaviors. For example, many carbon-intensive behaviors (e.g., air travel, eating red meat, driving) may be deemed desirable by many individuals, leading to a psychological conflict for those individuals who simultaneously appreciate the need to be pro-environmental. It is, therefore, possible that people activate compensatory beliefs to license the environmentally harmful transgression, while protecting their self-image. For example, people might trade off an act of recycling at home against the decision not to recycle at work. As with compensatory beliefs in the health domain, however, there may be problems with such logic; particularly, where the intended compensatory behavior is either not sufficiently compensatory and/or is not followed through.

Despite the potential importance of compensatory beliefs in helping to explain why people behave in ways that have a negative impact on the environment, research on whether and how notions of compensation are used in such circumstances is very much in its infancy. Indeed, the extant empirical work on the topic only provides a partial account of whether, when, why, and how so-called compensatory green beliefs (or CGBs) are held and/or acted upon. Furthermore, although there is evidence that people will sometimes hold and endorse CGBs (e.g., Kaklamanou, Jones, Webb, & Walker, 2015; Meijers, Noordewier, & Avramova, 2014), understanding more about the nature and the extent of their use has, to date, proven challenging.

Existing Research on CGBs

Kaklamanou et al. (2015) developed a scale for measuring the extent to which people endorse various CGBs. An online survey not only found evidence that

people endorse compensatory statements relating to environmentally significant behaviors but also found that people who endorsed CGBs tended to have weaker pro-environmental worldviews (see, Dunlap, Kent, Mertig, & Jones, 2000), weaker "green" identities (see Whitmarsh & O'Neill, 2010), and reported engaging in fewer ecological behaviors (see, Kaiser, Wölfing, & Fuhrer, 1999). Nevertheless, although Kaklamanou et al. did find some evidence that people endorse CGBs (and that the endorsement of CGBs predicted environmental behavior over and above green identity and ecological worldviews), questions were raised over the extent to which people actually use CGBs to justify their actions. Indeed, endorsement of the CGBs was quite low (each belief was endorsed by around 8% of the sample). However, Kaklamanou et al. also identified some potential issues with the measure of CGBs that could explain the relatively low levels of endorsement observed. For example, there was anecdotal evidence that some participants did not like the strict nature of the statements (i.e., that Behavior X *always* compensates for Behavior Y). Instead, they viewed the validity and relevance of the compensation as more context dependent (i.e., that Behavior X *sometimes* compensates for Behavior Y).

The Present Research

The present research was designed to better understand the use of compensatory beliefs as a mechanism for self-licensing environmentally detrimental behavior. Specifically, we were interested in learning more about what kinds of trade-offs people deem to be acceptable and in what contexts, and in understanding more about how people use CGBs to permit or license engaging in behaviors that have a negative impact on the environment. A subsidiary aim of the research was to further investigate the efficacy of the measure developed by Kaklamanou et al. (2015) for assessing people's endorsement and use of CGBs. To achieve these aims, participants first took part in a "think-aloud" exercise (see Ericsson & Simon, 1980), where they were required to verbalize their thoughts while completing the self-report measure developed by Kaklamanou et al. (2015). The topics and issues raised during this task were then explored in greater depth in a subsequent semistructured interview.

Method

Participants

Participants were contacted during the Spring of 2013 via a mailing list maintained by a university in the North of England, and community groups (e.g.,

a church, a school, and an environmental charity). In total, 41 participants took part, which is a comparable number of participants with other studies using think-aloud paradigms (e.g., Darker & French, 2009; Kaklamanou, Armitage, & Jones, 2013), and also other research that has interviewed people to explore their beliefs about environmental issues (e.g., Caperello & Kurani, 2012; Kaplan, Kaplan, & Austin, 2008). One participant was excluded because he did not talk out loud while completing the think-aloud exercise, leaving 40 participants in the final sample. Participants were given £15 for their time. Participants ranged in age from 17 to 65 years with 53% indicating that they were aged between 22 and 44 years. Nineteen participants (48%) were male, and 31 (78%) were educated to degree level or above. Thirty-two participants (80%) were White British with the remaining participants classifying themselves as White Other ($n = 4$), Asian ($n = 2$), White Irish ($n = 1$), or "Other" ($n = 1$).

Measures

CGB Scale. The original 20-item scale created by Kaklamanou et al. (2015) was used as a stimulus for the think-aloud exercise. This included four items that did not feature in the final published version of the scale (e.g., "It is okay to have lots of electrical items if you turn them off when not in use"). All the other items were from the final published scale (e.g., "Not driving a car compensates for flying on holiday"). This measure can be seen in the online appendix. Participants responded to the items using a five-point scale, anchored by *strongly disagree* and *strongly agree* (coded 1-5). Participants were given the following instructions:

> Below are a series of beliefs that people may hold about energy, water, transport, and the environment. Please read each sentence carefully (out loud) and rate how closely the statement reflects YOUR own beliefs by marking the appropriate box. Since we all believe different things, there are no right or wrong answers.

Participants also completed the following measures:

General Ecological Behavior (GEB) Scale. This measure (Kaiser et al., 1999) was adapted by Kaklamanou et al. (2015) who removed seven of the 65 items because they were deemed inappropriate for a U.K. sample (e.g., "after meals, I dispose of leftovers in the toilet"), and adapted the items to ensure that they were framed in terms likely to be familiar in the United Kingdom (e.g., "miles" not "kilometers"). Response options were binary (yes/no).

Revised New Ecological Paradigm (NEP) Scale. This 15-item scale (Dunlap et al., 2000) explores human–environmental interactions (e.g., "we are approaching the limit of the number of people the earth can support"). Responses were recorded using a five-point scale from *strongly disagree* to *strongly agree* (coded 1-5).

Green Identity Scale. Four items from Whitmarsh and O'Neill's (2010) Green Identity Scale (e.g., "I think of myself as someone who is very concerned with environmental issues") were included. The items were measured on a five-point scale, anchored by *strongly agree* and *strongly disagree* (coded 1-5).

Beliefs about climate change were measured by modifying three items used by Spence, Venables, Pidgeon, Poortinga, and Demski (2010). The first item assessed participants' general belief in climate change ("Do you think that the world's climate is changing?" yes/no/do not know). The second item assessed participants' level of personal concern about climate change ("How concerned are you about climate change?" four-point scale [coded 1-4]: *not at all concerned*, *not very concerned*, *fairly concerned*, *very concerned*, and a "don't know" option). The third item asked participants about the extent to which they perceived that humans were a cause of climate change ("If you believe the world's climate is changing, to what degree do you think it is caused by humankind?" not at all caused by humankind/caused partly by humankind/caused entirely by humankind/not sure).

Think-aloud exercise. Participants were asked to report their thoughts while completing the questionnaire designed to measure endorsement of various CGBs. Participants first familiarized themselves with the think-aloud procedure by articulating their thoughts while responding to four items designed to measure compensatory health beliefs (e.g., that "Smoking can be compensated for by physical activity"). The researcher provided the following instructions for the think-aloud exercise—adapted from French, Cook, McLean, Williams, and Sutton (2007):

> As you complete this short questionnaire I want you to tell me everything that you are thinking from the moment you read the question to when you complete it. You don't need to plan what you are going to say. Act as if you were by yourself and talking to yourself alone. For this reason, I will wait outside the room while you complete the task. You must keep talking. You will be prompted if you are silent for more than 10 seconds. You can ask any questions now or after this practice exercise.

Semistructured interview. Participants took part in a semistructured interview immediately after the think-aloud exercise. Questions were designed to explore whether, when, why, and how CGBs may be held or acted upon, and to clarify participants' responses to the think-aloud exercise. Table 1 summarizes the questions.

Thematic analysis procedure. The data from the think-aloud exercise and semistructured interviews were transcribed verbatim. The primary coder assigned conceptual labels to topics that were then refined through a process of repeated examination (Braun & Clarke, 2006; Hannes, Janssens, & Wets, 2009). These codes were compiled into a manual that captured recurring themes. Secondary coding, conducted by another researcher, served to further refine the manual (Braun & Clarke, 2006). This was an iterative process whereby the coding of randomly selected transcripts from each data set (think-aloud and interview) were discussed, with the codes being revised as necessary (Darker & French, 2009; Trickett & Trafton, 2009). This process was repeated three times for a total of 15 transcripts from each data set and any disagreements were resolved jointly through discussion. The final coding manual was then applied to the remaining transcripts by the primary coder.

Results

Quantitative Findings

Participants tended to have a reasonably strong green identity ($M = 4.37$, $SD = 0.58$), and a relatively pro-ecological worldview ($M = 3.91$, $SD = 0.56$). On average, participants engaged in 58% of the pro-environmental behaviors listed in the General Environmental Behavior Scale. The majority of participants (92.50%) agreed that the climate was changing, with 82.50% attributing climate change partly or entirely to human activity. Ninety percent of the participants were concerned by climate change ($M = 3.22$, $SD = 0.70$) and 82.50% believed that something could be done to tackle it.

Participants tended not to endorse CGBs ($M = 1.83$, $SD = 0.47$) and agreement with individual items from the scale was low ($M = 9.97\%$, range = 0.00%-28.21%). Endorsement of CGBs was negatively correlated with ecological behavior ($r = -.37$, $n = 39$, $p = .020$), worldview ($r = -.43$, $n = 39$, $p = .007$), and green identity ($r = -.54$, $n = 39$, $p < .001$). In short, participants with weaker green identities, weaker pro-ecological worldviews, and who engaged in fewer pro-ecological behaviors were more likely to endorse CGBs.

Table 1. Summary of Interview Questions.

Type of question		Question
Interview	1.	How did you find that (i.e., the think-aloud exercise)? What did you think of the list of statements?
	2.	What do you think about the idea of "compensating"? In other words, the belief that performing a positive behavior (e.g., switching to a "green" energy tariff) can somehow compensate for performing a negative behavior (e.g., leaving the heating on while not at home).
	3.	How effective do you think these compensatory actions might be? Can you think of an example?
	4.	Can you think of a time when you have done something, which you thought was bad for the environment and tried to make up for it in some way?
	5.	Have you heard people say things similar to the statements on the list?
Follow-up questions on think-aloud task	1.	You did not say very much about why you agreed/disagreed with statement X what were you thinking? Why did you say that?
	2.	You seemed unsure about how to respond to statement X. Can you tell me more about why you were unsure?

Qualitative Findings

Although participants' written responses suggested that they typically disagreed with the statements describing compensation, their verbal comments during the exercise suggested that there were instances where participants recognized and endorsed the notion of compensation in relation to their environmentally significant behavior:

> I suppose in a sense I am trading one off against the other and saying "well I'm allowed a bath once every couple of months if I have a shower all the rest of the time." (P09, female, 65 years or above)

> I'll often catch the school bus or I'll walk in the morning to school and then I often think well I've cut down on that so if I'm going out in the evening I ask my dad to give me a lift. (P19, male, 17-18 years)

Rather than forming a specific, prospective intention to compensate for environmentally detrimental actions, compensations tended to be retrospective, involving past or ongoing behaviors that seemed relatively habitual (i.e., that were performed repeatedly in similar situations; Neal, Wood, & Quinn, 2006). Participants talked, for example, about striking an overall balance between their more and less environmental behaviors, suggesting that they saw compensation on a cumulative/holistic level rather than on a behavior-to-behavior basis:

> By trying to keep everything else, like buying food and keeping electrical things turned off . . . by trying to keep that as a whole, sort of more green, then I'm hoping to have a more positive effect on the environment or less of a negative effect, if you like . . . I try to look at it like a sum of all parts rather than each individual activity. (P36, female, 22-34 years)

The cumulative and holistic nature of the compensatory beliefs expressed by our participants makes the beliefs somewhat different from the statements that feature in the measure of CGBs developed by Kaklamanou et al. (2015), where single, predefined compensatory actions are pitted against one another. The finding that participants referred to habitual behaviors could also explain why the CGBs expressed by participants in the present research tended to be primarily retrospective (i.e., "I did X, so it is okay to do Y") rather than prospective (i.e., "I have done Y, so I need to do X"). In other words, participants seemed to use CGBs to resolve conflict within their current/past routines rather than to justify and plan future action.

Moral objections. Although participants generally recognized the idea of compensation, some disagreed with the notion of behavioral compensation outright, feeling that any attempt to balance their environmental impact would compromise their goal of living more sustainably. These participants argued that, wherever possible, people should act pro-environmentally and not make compromises:

> I don't think we can afford to be doing all this compensation [. . .] I think we are just going to have to accept that we are going to have to live different kinds of lifestyles and that we may just not be able to do things that we now do. (P06, female, 65 years or above)

> [A]t the end of the day the point is to save the environment and . . . not to compensate. (P19, male, 17-18 years)

"Little Green Lies": Endorsing CGBs despite doubting their efficacy. Although participants in the present research did recognize—and in some cases endorse—CGBs, they also expressed doubts regarding the overall efficacy of compensatory

actions. This concern arose principally from the complexity of calculating whether, or to what extent, a positive action would actually compensate for the negative effects of another action:

> I mean, it depends really . . . if you don't drive a car can you go abroad on holiday? You know, does it compensate? It depends where you're going, how many times you're flying per year and how many times you're using the car. It's kind of a grey area question. (P40, male, 22-34 years)

This finding was also supported by evidence from the think-aloud exercise, which suggested that participants found it difficult to compare the impact of different activities, particularly when these were in different domains (e.g., saving water to permit using more energy). Indeed, in some cases, participants found the compensations outlined within the measure of CGBs to be obscure and/or illogical:

> I would never have put those two together [Flying abroad can be made up for by being a vegetarian]. (P08, female, 65 years or above)

Interestingly, participants seemed to exploit their uncertainty surrounding the environmental impact of different behaviors to justify engaging in the one most likely to benefit them personally:

> We have got quite a small dishwasher it's a really slim one and I've read things that say "dishwashers use less water than washing up by hand" and so I kind of justify it in my head by saying "oh well, I'm at least using maybe the same amount of water." But in the back of my head I think it's this big piece of equipment that's doing my dishes for me so I think I'm just trying to convince myself as it's easier. (P10, female, 22-34 years)

In short, there was evidence that participants were willing to use CGBs to justify certain actions to themselves without necessarily considering or obtaining evidence for the actual efficacy of the compensation.

Why and how do people use CGBs? There was evidence that holding and endorsing CGBs had psychological benefits for participants. By being able to license the negative environmental impact of their actions by, for example, drawing attention to their green credentials, participants seemed able to reduce negative feelings, and feel more positive about their overall impact on the environment:

> I suppose that my biggest sin is car driving . . . I do endeavor to recycle. I do endeavor to switch off appliances as much as I can, not use appliances when I

> don't need to, those kinds of things. I'm pretty sure that it doesn't compensate for the more extreme damage that, potentially, a car does to the environment by doing what I do. I sort of think: "at least I am doing this." (P25, male, 45-54 years)

> I found that one of the supermarkets was doing carrier bag recycling and I took them down to recycle and I thought "well that's kind of made up for it a little bit." I just think I feel better myself for doing it. (P10, female, 22-34 years)

Both these examples suggest that participants are aware of their negative impact on the environment, with one participant even using moral language (i.e., "my biggest sin"). However, phrases such as "at least I am doing this" indicate a tokenistic or perfunctory gesture toward acting pro-environmentally, perhaps suggesting that participants are unwilling to invest much effort in compensating, but rather justify actions on the basis of compensation as a momentary and immediate means of resolving the dilemma.

Being able to justify undertaking environmentally detrimental actions was also deemed to be useful in social situations as it enabled participants to emphasize their green credentials even where evidence for their pro-environmental behaviors was ambiguous:

> If I'm put on the spot and if I was being interrogated about: "how much are you contributing?" I'd inevitably drift into self-justification-style language. (P13, male, 45-54 years)

Participants recognized that pro-environmental behaviors were morally and socially normative and were, therefore, viewed as desirable actions to be seen to perform:

> I think today most people would want to be seen as being concerned . . . I think we would all try to make ourselves sound better in one respect by [citing] some of the things that we do that we believe to be, you know, beneficial to the environment. (P24, female, 35-44 years)

This observation may go some way toward explaining why people use or endorse retrospective CGBs; potentially, they serve a communicative function by explaining or justifying to others the performance of potentially stigmatizing behavior(s).

When are people likely to use CGBs? There was evidence not only that participants viewed compensation between certain behaviors as socially and morally permissible (e.g., that eating in season produce could

compensate for also eating out of season produce) but also that they rejected the idea of compensation between other behaviors (e.g., driving less to compensate for drinking bottled water). Whether compensation was deemed to be allowable or not seemed to relate to the *perceived morality* of, and *ease* with which, a certain pro-environmental action could be performed. As found by Thøgersen (1996), some environmental behaviors (e.g., recycling or preventing waste) appear to be viewed as moral behaviors with the result that people's beliefs tend to relate to what they view is "right":

> I see no reason why people wouldn't recycle because all the facilities are available. I think if there's nothing blocking you doing it, then you do have that moral obligation to do it. (P36, female, 22-34 years)

Some participants were also unwilling (at least publicly) to entertain the idea that any trade-off or compensation could be justified for relatively simple pro-environmental actions (e.g., sorting waste for recycling). Participants' responses suggested that **e**ndorsing notions of compensation was easier when (a) acting more pro-environmentally was deemed to be either difficult or personally costly or (b) where acting in an environmentally detrimental way was seen as unavoidable:

> I do think there are occasions when you need to get to a place and it's out of the way and you can only really drive a car to that place [. . .] then you would maybe think of trying to lower it down [car use] and balance it out by using less on other occasions. (P03, female, 22-34 years)

> If it's unavoidable, at least you can help [by compensating]. (P25, male, 45-54 years)

Other forms of justification. It is also worth noting that participants also justified acting in an environmentally detrimental manner in a number of other (noncompensatory) ways. For example, participants sometimes pointed to (a) the difficulty or impracticality of the pro-environmental option (e.g., as found by Gifford, 2011) or (b) a lack of perceived and actual behavioral control (e.g., as emphasized by the Theory of Planned Behavior; Ajzen, 1985) as reasons for not acting pro-environmentally. In such cases, participants often drew attention to *circumstances* that prevented them from acting in pro-environmental ways or to more important goals (e.g., the needs of family members) that necessitated (and hence justified) acting in environmentally detrimental ways:

> I need to have a car, my very elderly mother is now on her own and I need to be a phone call away from her which means I need to be literally five minutes away from her. I haven't got time to be waiting for a bus. (P37, female, 35-44 years)

Some participants took a fatalistic view, arguing that nothing could be done to remediate certain environmental impacts, and/or that their personal contributions to affecting change would be relatively insignificant. This type of response has been identified by other studies (e.g., Gifford, 2011; Lorenzoni, Nicholson-Cole, & Whitmarsh, 2007) and seems to stem from a lack of self-efficacy (belief in one's ability to perform a task or make a difference; Bandura, 1977). For example, one participant argued that attempting to compensate for a long haul flight was pointless because even off-setting a short flight would be difficult:

> I do know from my carbon output charts . . . that just one short European flight—the amount of carbon that it bangs on that month is huge, so no you can't really compensate. (P05, male, 65 years or above)

Similarly, some participants felt helpless due to the global scale of environmental problems and saw their own actions as a "drop in the ocean" (e.g., Lorenzoni et al., 2007). Focusing on the scale of issues and the perceived negative environmental impact of others' actions seemed to help participants to maintain their sense of personal moral value and to minimize feelings of guilt and personal responsibility (see also discussions by Gifford, 2011; Rothschild, Landau, Sullivan, & Keefer, 2012):

> [With] countries like China doing whatever they want—whether you've got an efficient appliance in your house isn't really going to make such a difference. (P27, female, 34-44 years)

Finally, some participants felt that they deserved, or were entitled to, participate in certain highly desirable behaviors (see, Taylor, Webb, & Sheeran, 2014, for similar findings in relation to health behavior) and so did not need to compensate for so doing:

> Flying on holiday is something that if you want to go far enough and that's something that you have to do you shouldn't have to balance stuff out in order to do that. (P01, male, 22-34 years)

In short, although participants felt that it was unacceptable to not undertake behaviors that are relatively easy (e.g., recycling), they expected—or

even felt entitled—to be able to undertake behaviors such as foreign travel that potentially have a larger negative impact.

Discussion

The present research investigated how people think about and justify behaving in ways that potentially have a negative impact on the environment. Our specific focus was on notions of compensation, or the idea that pro-environmental behavior might (to some extent) be seen to compensate for (or off-set) environmentally detrimental behavior(s).

Although participants' written responses suggested that they typically disagreed with statements describing compensatory actions, their verbal responses suggested that there were occasions where they entertained the prospect of compensation; that is, they considered striking a balance between their more and less pro-environmental behaviors. Our findings suggested that endorsement and use of CGBs was determined, to an extent, by (a) how desirable the behavior in question was deemed to be (participants reported being more likely to compensate for moderately desirable behaviors, such as car use, but not highly desirable behaviors such as flying abroad on holiday), (b) the relative difficulty of pro-environmental actions (participants felt that not undertaking relatively easy behaviors, such as recycling, could not be justified), (c) moral and social norms associated with the behavior (these encouraged people to justify—or be seen to justify—behaviors that could have a negative impact on the environment), and (d) the relative availability and/or suitability of other ways to justify the behavior, such as the needs of family members (participants were less likely to compensate when they could justify their behavior in other ways).

The Nature of CGBs

The present research extends ideas of compensation, primarily developed in the literature on health behavior, to environmentally significant behaviors. Research on health behaviors suggests that compensatory beliefs tend to be activated when people experience a conflict between their goals, values, and more immediate desires. In instances where a behavior is very tempting (e.g., being offered a free glass of champagne), the desirability of the behavior alone should provide sufficient reason to act (e.g., "I have to do this"). Similarly, where a course of action is not very tempting (e.g., going for a cycle ride in wet weather), then it is unlikely that a self-regulatory dilemma will occur, and there is no need to justify not engaging in the behavior. Dilemmas are most likely to occur, therefore, when a behavior is

"moderately" tempting (e.g., enjoying a biscuit with a cup of tea; Rabiau et al., 2006). In such situations, people may try to resolve the dilemma by reasoning that they can indulge now and compensate later, or indulge now because they previously acted in virtuous ways. The present research suggests that compensatory beliefs within an environmental domain work in a similar fashion. That is, CGBs constitute a strategy to reduce feelings (or anticipated feelings) of guilt associated with not behaving as pro-environmentally as perhaps they could (e.g., putting recyclable material in the trash, driving a sports car).

Fuzzy accounting. One key finding relates to the potentially inaccurate and imprecise nature of the trade-offs that participants were willing to consider. This imprecision likely stemmed from the (understandable) challenge of evaluating the accuracy of the potential compensations presented during the think-aloud exercise. Indeed, we found evidence that some participants actually suspected that their compensatory beliefs might be inaccurate and/or ineffective. Notably, however, they were still willing to endorse them. This is similar to findings from research into compensatory health beliefs. Kaklamanou et al. (2013), for instance, found that although participants doubted the efficacy of some of their compensatory behaviors (e.g., the extent to which exercising would compensate for smoking), it did not prevent them from using such notions of compensation to justify their actions.

More generally, it appeared that participants in the present research compensated in quite vague and cumulative ways (e.g., trading off a future behavioral indiscretion against a larger number of historical positive behaviors). Such general beliefs could be seen to constitute a form of lazy or fuzzy accounting, allowing people to appear (to themselves and to others) to possess green credentials, without having to make significant changes to their lifestyle (for similar ideas, see Beattie, 2010, on "green fakers" and Gifford, 2011, on tokenism). Arguably, in such contexts, the term *compensatory belief* is a bit of a misnomer because people do not necessarily believe in the compensations that they endorse—rather they simply employ them as a convenient way to justify their behavior.

Somewhat ironically, it appears that such compensatory strategies are used *because* people care about the environment and feel uncomfortable about contributing to environmental problems. Although justifying actions that potentially harm the environment is concerning, Thøgersen (1999) argues that the use of justifications can also be seen more positively. Namely, to the extent that people feel a need to justify or excuse their behavior, the use of compensatory beliefs could be seen as a "partial yielding," or

acknowledgment that individuals *ought* to change their behavior (Thøgersen, 1999; van Raaij, 1995). Such people are likely to be easier to persuade to change their behavior compared with those who do not feel any dissonance/guilt about environmentally detrimental actions. In short, the endorsement and use of CGBs could suggest that people are at least aware of the potential impact of their actions on the environment and could be persuaded to consider changing their behavior.

Temporal focus. Participants' responses in the present research suggested that beliefs about compensation in relation to health and environmental behaviors may have a different temporal focus. Although compensation in health domains is often associated with forming intentions to compensate in the future (e.g., Radtke, Scholz, Keller, & Hornung, 2012), participants in the present research principally endorsed retrospective forms of compensation (e.g., reasoning that the sum of their past pro-environmental actions might compensate for their current [and ongoing] negative environmental behavior; McGregor, 2008). In short, rather than a "credit card" strategy (i.e., where people engage in a behavior under the promise that they will pay off their "debt" at a later time), participants could be seen to be using a "piggy bank" approach with respect to environmental actions, whereby numerous past small actions are viewed to build-up credit that can be used to justify engaging in environmentally detrimental, but otherwise desirable, behaviors (e.g., driving).

There are a number of potential explanations for the finding that retrospective compensations were principally endorsed that could be further explored in future research.

First, pro-environmental actions are generally seen to be morally right and socially desirable (Lindenberg & Steg, 2013). For this reason, engaging in an environmentally detrimental action now (i.e., acting immorally or undesirably) on the promise that one will off-set the damage in the future, is likely to be viewed as less appealing than directly pointing to concrete evidence suggestive of green credentials before acting (Miller & Effron, 2010). Alternatively (or in addition), it is possible that the complexity of identifying the outcomes of personal behaviors (e.g., recycling) on the environment (compared with the complexity of identifying the impact of actions on health) may mean that people may (a) simply find it more difficult or confusing to plan to off-set negative behaviors than to refer to past actions or (b) not fully realize the environmental implications of their behavior(s) until they have begun to act, thus necessitating a quick (and not necessarily well considered) rationale for their action (De Witt Huberts, Evers, & De Ridder, 2014).

Acceptability of compensation. Some forms of compensation seemed to be more acceptable than others. This finding might be interpreted in relation to the literature on "minimal" versus "maximal" moral standards (Kessler et al., 2010). Minimal standards are those that have an absolute cutoff point for appropriate behavior. In other words, a behavior is either seen as acceptable or unacceptable, with no gray area. It would seem that participants in the present research judged recycling according to such minimal standards (i.e., reasoning that, because recycling is easy, there is no excuse for not doing it). In contrast, maximal values focus on the extent of deviation from a moral standard. Travel behaviors appeared to be judged using these maximal standards (e.g., it is okay to drive now because I took the bus earlier).

Implications of the Present Research for Improving Measures of CGBs

Although we found evidence that people both described and, at times, endorsed CGBs, agreement with individual statements was relatively low, which may indicate that the measure might be improved. One issue is that some of the behaviors described in the CGB measure (e.g., recycling behavior) were viewed as minimal moral standards by some participants. As a consequence, participants may have been unwilling (at least publically) to consider them as candidates for compensation. Another issue was that some participants found it challenging to assess statements that were relatively specific and/or occurred across domains (e.g., balancing out unsustainable transport by conserving water). There are two potential problems here. First, a high degree of environmental literacy (Roth, 1992) is required to assess specific and/or cross-domain compensations. Second, our research suggests that people tend to think in a less prescribed way about balancing their impacts. Importantly, where participants considered more specific compensations, these tended to be within a particular domain (e.g., between more and less sustainable transport options). A final issue pertained to the response options. Participants often wanted to specify how frequently compensation would be acceptable. However, they were asked to choose a number to indicate their agreement with each statement without any opportunity to explain, or qualify their responses.

It is possible that these issues might be overcome by (a) rewording statements to provide the information required to weigh up the environmental consequences of different behaviors (e.g., "Not eating meat reduces personal carbon emissions and can thus compensate for those generated by flying abroad on holiday"), (b) developing more statements describing within-domain

compensations (or explicitly comparing the extent to which participants endorse compensations within vs. between domains), and (c) modifying the response options to reflect the frequency with which the compensation is deemed to be permissible (i.e., "How often is it okay to compensate?"). A more substantial change to the assessment of CGBs—but one that would recognize the idiosyncratic and more general nature of people's compensatory beliefs—would be to rephrase statements so as to allow participants to describe their own compensatory beliefs. This could be done using a stem-completion task, where participants are allowed to specify the behaviors that they engage in that might compensate for their environmental indiscretions (e.g., "The effects of driving on the environment can be compensated for by . . ."; see Byrka & Kaminska, 2015, for a similar approach).

Limitations and Future Directions

It is worth noting a number of limitations in the present research. First, our participants tended to have a reasonably strong green identity and a pro-ecological worldview. Although we found evidence of CGBs, stronger endorsement of CGBs is likely to have been evident in a less pro-environmental sample (Rabiau et al., 2006).

Second, our sample of 40 participants was relatively small when compared with quantitative studies in this area (e.g., Bratt, 1999; Kaklamanou et al., 2015). This limits the extent to which the findings can be generalized and prevented us from using inferential statistics to compare participants' beliefs as a function of demographic characteristics, levels of green identity, and so on. However, the purpose of the present research was to complement research employing larger scale survey designs to provide more exploratory, in-depth insights into how people rationalize and justify their environmentally detrimental actions. These insights can be used to better understand the findings of previous work (e.g., Bratt, 1999; Kaklamanou et al., 2015) and to inform the design of future studies in this area, which could include surveys conducted on larger, more representative samples.

Another limitation is that participants may have found it difficult to recall particular occurrences of environmental behavior and to introspect as to the reasons for these actions (Nisbett & Wilson, 1977). Although this is possible, participants tended to provide relatively rich descriptions of their beliefs and behavior that seemed to suggest a good degree of insight. Similarly, although concerns about social desirability and demand effects are generally an issue with self-report measures, especially those completed in the presence of a researcher, we were often struck by the honesty of participants' responses and the extent to which they were prepared to admit to not behaving as they

perhaps intended or desired. Future research might, however, consider a more in-depth, discursive approach, looking at how participants' accounts of their behavior are constructed and shaped by social interactions (Adams, 2014).

A final limitation concerns the extent to which compensation is a conscious, effortful strategy that is amenable to self-report (cf. the issues described above). Although there is evidence that people knowingly and willingly deviate from their goals by providing rationalizations, there is also evidence that some balancing processes (e.g., compensating, purging, licensing) may operate at a subconscious level. For example, Taylor et al. (2014) found that people could be primed (outside their conscious awareness) to use justifications. Although the current research was designed to learn more about the nature of cognitive rationalizations, and specifically, the use of compensatory beliefs as a mechanism for self-licensing environmentally detrimental behavior, the methods employed here (i.e., think-aloud procedures and interviewing) are not suited to identifying implicit instances of compensatory beliefs. Future work, however, could probe this with experimental methods (e.g., by testing self-regulatory behavior in relation to pro-environmental goals, after priming the use of justifications in another context; Taylor et al., 2014).

Conclusion

The present research contributes to our understanding of why people knowingly engage in environmentally detrimental actions that contravene their good intentions. The primary contribution is evidence on whether, when, why, and how people endorse notions of compensation with respect to environmental behavior. Our findings suggest that CGBs are triggered when people feel the need to justify their pro-environmental credentials to themselves or others, and when doing so will not incur social sanctions. The findings point to similarities and differences between compensatory beliefs in health and environmental domains. Specifically, CGBs, like compensatory health beliefs, appear to be a way for people to deal with the resultant or anticipated feelings of dissonance associated with acting in ways that are ostensibly inconsistent with their goals. However, the present findings suggest that CGBs also have an additional moral dimension. That is, people use CGBs to demonstrate their moral character to themselves or to others. Finally, the findings suggest that current measures may not adequately capture the extent to which people endorse CGBs and we make a number of specific suggestions to improve such measures.

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