Abstract
People have a strong need to perceive their environment as orderly and structured. Among the various strategies to defend against the aversive experience of disorder, the authors propose and test the novel hypothesis that people may reaffirm a sense of order by setting and pursuing goals, that may be unrelated to the source of disorder. In a series of (lab and field) studies, the authors show that when a chaotic store environment threatens a sense of order, or when consumers have a chronic need for order, and hence when they are motivated to retain perceptions of order, consumers are more attracted to clear, well-defined goals. Moreover, the authors show that the effect of a disordered store environment on goal pursuit is driven by the need to reaffirm perceptions of order, and – conversely – that setting and pursuing goals is indeed functional in promoting a sense of order.

This Chapter is submitted for publication as Jacob H. Wiebenga and Bob M. Fennis, "Excuse Me, Where Can I Find Order? Achieving Order Through Goal Pursuit".
Although there is much that continues to be said about the speeches of former President George W. Bush, following the September 11th, 2001 terrorist attacks he is thought to have given one of his best, strongest, and most memorable speeches of his presidency. Experts say that his speech was so successful because in countering the general sense of chaos, he presented a clear end goal and ‘marching orders’ on how to get there (Pellegrini 2001). More in particular, after addressing the doubt and uncertainty the attacks evoked and questioning how to continue life, he answered by asking the American citizens for their ‘continued confidence and participation in the economy’, ‘to single out no one for unfair treatment or unkind words’, and to ‘continue praying’ (Bush 2001). Bush’s active and goal-directed rhetoric led to a peak in approval ratings (Davis and Gardner 2012; Jones 2001), demonstrating the importance for people to have hope in a better future in the aftermath of a crisis. By reminding how these three ‘missions’ were consistent with the past, present, and future, and by stressing their significance as a solid basis for progress, actively pursuing these goals may have brought back perceptions of structure and routine and hence provided a sense of order in the face of evidence to the contrary (Shamir, House, and Arthur 1993). Could this notion explain why the American citizens after 9/11 and consistent with the three missions outlined by Bush increased their participation in the economy (Ramey 2011), showed more altruism, kindness, and solidarity (Poulin et al. 2009; Steinert 2003), and held tighter to religious beliefs (Pew 2001; Schuster et al. 2001)?

Although this observation may seem farfetched, the idea that we seek order through goal pursuit as a means to cope with uncertainty, chaos, and randomness may not. In this research we ask whether and how the need for order influences the likelihood that people set and pursue goals – not necessarily related to the source of such chaos – as a means to cope with the experience of lack of structure and disorder. In addition, we examine the underlying assumption of whether a disordered compared to ordered environment indeed increases the need for order, thereby boosting the need to regain a sense of order, and that a high need for order drives the effect of a disordered environment on goal pursuit. In addition, we explore two logical extensions of our reasoning and test whether the effect mainly holds when the end state is clear rather than vague and whether disorder promotes motivation to engage in structured goal pursuit. Finally, we test the functionality of the proposed mechanism and examine whether the mere pursuit of goals is an effective way to reaffirm perceptions of order after exposure to disorder.

3.1 | The Need to Reduce Disorder

People have a fundamental need to view the world as an ordered and structured place composed of predictable cause and effect relations (Heine, Proulx, and Vohs 2006; Jost, Banaji, and Nosek 2004; Kay et al. 2008; Kay et al. 2009; Kruglanski 1989; Landau et al. 2004). Such perceptions are considered one of the most important factors governing people’s well-being. Feelings of order
and nonrandomness are key contributors to healthy psychological and physical functioning (Janoff-Bulman 1992; Rothbaum, Weisz, and Snyder 1982). In contrast, lacking understanding of the regularities that govern the environment and perceiving it as unmanageable and random is a highly aversive state triggering fear, apathy, and withdrawal (Whalen 1998). Hence, it is not surprising that people actively try to avoid or remedy perceptions that the world is an unstructured place, and hence maintain beliefs in order and structure (Kelley 1971; Skinner 1996).

To protect themselves from the unsettling feelings perceptions of disorder incite, people have developed a myriad of strategies to provide a comforting sense that the world is not ruled by randomness. Since it is not always feasible to respond by directly facing the threat posed by the initial source (e.g., terrorist attacks), people may rely on compensatory sources of order (Antonovsky 1979; Kay et al. 2008), and more specifically by imbuing the self and/or the environment with increased power and influence (Kay et al. 2008; Sullivan, Landau, and Rothschild 2010). For example, research shows that one particular response to a perceived lack of order is to see patterns in the environment, even if there are none (Proulx, Heine, and Vohs 2010). More specifically, a threat to order has been found to make people prone to perceive illusory patterns in grainy images, and to increase susceptibility to conspiratorial and superstitious beliefs (Greenaway, Louis, and Hornsey 2013; Whitson and Galinsky 2008). A related response to lacking a sense of order is to have faith in abstract and controlling external forces, such as governments, institutions, and organizations (Jost et al. 2004; Shepherd and Kay 2012), and belief in an interventionist God (Kay et al. 2008). In sum, these studies suggest that a perceived threat to order and structure prompts responses aimed at regaining a sense of order by converting a fuzzy reality into a more understandable and predictable one, thereby relying on compensatory strategies.

It is interesting to note that these and other studies that have examined responses to disorder threats mainly focused on the sometimes irrational, exotic, and even bizarre strategies that people resort to in order to regain a sense of order. But if maintaining a sense of order is so engrained in our nature, and if threats to order are so omnipresent in our social environment (Antonovsky 1979; Kelley 1971), then a straightforward question that arises is: are these responses to see patterns in randomness or to revert to conspiracies, superstitions, or a controlling divine power the only, let alone the most prevalent strategies in our toolbox to cope with chaos and a lack of order? We propose that while certainly in our repertoire, a sole focus on these would obscure that there are more mundane, concrete, and probably more prevalent and typical strategies that we employ to regain a sense of order. More specifically, we propose that mere goal setting and goal striving (we use goal pursuit as an umbrella term) in and of itself has a powerful psychological effect in satisfying a need for order and hence will alleviate a sense of randomness and disorder. Importantly, we propose that goals and goal pursuit serve this function regardless of their specific object and hence also help in regaining a sense of structure and order when they are unrelated to the source of randomness and disorder. We develop our reasoning in the next section.
3.2 | Goal Pursuit Provides Order

Goals are typically conceived to be concrete, domain specific representations of desirable end states that people want to attain and/or undesirable ones that they try to avoid (Baumgartner and Pieters 2008). Goal pursuit may provide a sense of order because it makes salient various intrapersonal and social 'anchors' that reduce the experience of lack of structure and randomness. More specifically, when people engage in goal pursuit it highlights at least two reference points: where they come from and where they are going, but also what it is they are pursuing (goal content), how to do it (the operationalization of means), and why to do it (the motivational drive it serves; Baumgartner and Pieters 2008). In sum, following Skinner (1996), goals and goal pursuit provide a sense of order because they specify concrete agents, means and ends, the building blocks of a perception of order and structure.

Although intuitively plausible, to the best of our knowledge, the impact of mere goal pursuit on a sense of order and structure has not yet received systematic research attention. Nevertheless, the reverse causal relationship has recently been examined. More in particular, in a series of online (MTurk) studies, Kay et al. (2014) showed that a sense of structure and engaging in goal-directed actions are sometimes linked and that the former may facilitate the latter. Although the authors did not test it, it may well be that the causal link between structure and goal pursuit is bidirectional and hence, that the reverse causal direction also holds, such that goal pursuit facilitates a perception of structure and order. The present studies were specifically aimed to address this intriguing possibility.

The specific ‘theatre of operations’ of the notions outlined in the present paper is the consumer sphere and, more specifically, the extent to which shopping stimuli can induce a sense of randomness and disorder on the one hand, and the extent to which engaging in goal directed consumer behavior on the other can provide perceptions of order. The consumer context was selected because it provides a compelling illustration of the proposition that both threats to a sense of order and strategies to remedy it are not particular to exceptional events such as natural disasters or terrorist attacks, but constitute frequently encountered, mundane phenomena that are part and parcel of modern (consumer) life. An apt illustration of this point is the work by Cutright and colleagues (Cutright 2012; Cutright, Bettman, and Fitzsimons 2013) who have shown that marketing stimuli such as brand logos with clear boundaries can provide consumers with a sense of structure. In addition and related, studies have also focused on the motivational (side) effects of retail atmospherics. In this context, and in line with our notion, Levav and Zhu (2009; Chae and Zhu 2014) demonstrated that narrow store aisles lead to compensatory reactions aimed at regaining a sense of control. The notion that spatial confinement is associated with compensatory behavior dovetails nicely with the finding of Aylott and Mitchell (1999; Baker et al. 2002) that the most invasive stressors in the store environment (i.e., crowding, bad store layout, and ambient noise) have one common denominator: disorder. Hence, these studies suggest that not only extreme threats to order but also subtle, omnipresent signs of disorder, in
particular disorder cues consumers encounter each day in the retail environment, may induce a need for order, and that consumers can remedy a sense of disorder by turning to compensatory responses in that retail context.

In sum, and combining previous arguments, we propose that if endorsing goals satisfies the need for order, people should show an increased tendency to set and pursue goals when exposed to a disordered environment. More specifically, if perceptions of disorder boost the need to regain a sense of order, and if goals can function as compensatory resources on which can be drawn to reaffirm perceptions of order, people should be more likely to set and pursue goals after exposure to a disordered store environment. However, when exposed to an ordered store environment, and hence when there is no need to regain a sense of order, the environment should be less consequential for goal pursuit.

Taken together, the present research aims to extend previous work on compensatory behavior and goal pursuit by combining both streams of research and establishing the impact of perceptions of disorder on goal pursuit. Moreover, this work examines the conditions under which this effect is more or less pronounced. In so doing, our research contributes to literature in several ways. First, and most importantly, this research introduces an intriguing, ubiquitous, yet overlooked strategy (i.e., goal pursuit) by which people seek order as a response to disorder threats, and in so doing contributes to a growing body of research on compensatory control mechanisms (Antonovsky 1979; Kay et al. 2009; Wang, Whitson, and Menon 2012). Second, by focusing on consumption as a means of coping with chaos (Cutright 2012; Cutright et al. 2013), our findings add to literature on the impact of people’s need for order and compensatory responses in the marketing and consumer behavior spheres. Third and finally, the present work advances our knowledge on the impact of the physical environment on consumer decision making and judgment. Even though consumers are regularly confronted with situations in which their need for order is threatened (Baker et al. 2002; Levav and Zhu 2009; Meyers-Levi and Zhu 2007), this work is one of the first to examine how subtle, omnipresent situational disorder cues affect consumer goal pursuit.

3.3 | Present Research

We tested our hypotheses about the impact of (a sense of) disorder on goal pursuit in a series of field and lab studies. We used a variety of need for order measures and (dis)order primes, and assessed both intentions to pursue a goal and actual, overt goal pursuit behavior in a realistic goal pursuit setting. In what follows, we first empirically examine the basic relationship between the need for order and goals. More specifically, we test whether acute (Study 1) and chronic (Study 2) fluctuations in consumers’ need for order affect a preference for setting clear goals, and expect that high compared to low need for order individuals feel more attracted to setting such goals. We then seek to demonstrate that a disordered environment increases motivation
in goal pursuit, and that the need for order is the underlying psychological process driving the effect (Study 3). Finally, we test whether the positive effect of disorder on goal pursuit mainly holds when the goal pursuit process provides a sense of order rather than disorder (Study 4). Moreover, we examine whether pursuing a goal is an effective way to reaffirm a sense of order, as we hypothesize, such that the need for order decreases to the extent that people are motivated in goal pursuit (Study 4).

3.4 | Study 1

Study 1 provides a preliminary investigation of the hypothesis that consumers' commitment to goals and structured goal pursuit is affected by acute fluctuations in their need for order. More in particular, in this field study we examined whether consumers feel more attracted to a reward program with a clear goal – a well-defined end state – when they experience a greater lack of structure due to environmental cues (i.e., crowdedness, noise).

3.4.1 | Method

Forty-four consumers voluntarily participated in this part of a larger study. After excluding one participant of non-Dutch nationality who could not understand the Dutch materials, the final sample consisted of 43 consumers (mean age = 37.16, SD = 16.72; 40% male). Participants were randomly approached in a shopping street of a mid-sized city by a trained interviewer (see Appendix A). To ensure natural variation in experiences of randomness and lack of structure, participants were approached at different times of the day when levels of crowdedness, noise, and visual clutter would vary. They were asked to participate in a study about shopping which would only take one minute of their time.

After having indicated their gender and age, participants read the introduction of the one page questionnaire which stated that retailers employ different strategies to attract customers, for instance by using reward programs. After some filler questions (e.g., store choice), participants' valuation of a goal with a clear endpoint was assessed using the statement "I prefer to participate in a program that clearly indicates the total number of points required to redeem for a reward" (1 = strongly disagree; 6 = strongly agree). Next, participants' need for order was measured with the statement "I get an unpleasant feeling from the crowdedness of the shopping street" (1 = strongly disagree; 6 = strongly agree).

3.4.2 | Results

We performed a correlation analysis to examine the relationship between participants' salience of lack of structure and their valuation of the goal. As expected, perceived lack of structure and goal valuation were positively correlated ($r(43) = .37, p = .01$), such that participants with higher perceived lack of structure felt more attracted to a reward program with a clear and specific endpoint. Of particular interest is the observation that the relationship was observed
regardless of the specific desirability of the endpoint. Rather, it appears to be an endpoint per se, as a specific attribute of goals and focused goal pursuit that offers a motivational benefit in the present context.

3.5 | Study 2

The results of Study 1 suggest that consumers feel more attracted to goals when perceptions of order are threatened by an unstructured, crowded, shopping environment. In Study 2 we zoomed-in on the role of chronic rather than acute fluctuations in the need for order on reward program choice. Moreover, in extension of the previous study, we also systematically varied a critical attribute of the goal endpoint and goal pursuit process, and tested whether consumers with a high chronic need for order are more likely to choose a reward program with a clear, well-defined rather than ambiguous endpoint, and a clear rather than ambiguous, specification of the means to attain it.

3.5.1 | Method

Seventy-eight residents of the United States, recruited through Amazon’s MTurk, participated in this part of a larger study and were paid a small fee (mean age = 35.45, SD = 12.82; 44% male). Following previous research (Proulx et al. 2010; Whitson and Galinsky 2008), we first assessed chronic individual differences in the need for order by administering the five-item need for order scale – a subset of the need for cognitive closure (Webster and Kruglanski 1994) and need for structure scales (Thompson et al. 2001). Sample items include “I enjoy having a clear and structured mode of life” and “I find that establishing a consistent routine enables me to enjoy life more” (1 = strongly disagree, 7 = strongly agree). Scores were averaged to form a need for order index (Cronbach’s α = .88) with higher scores indicating a higher perceived need for order.

After completion of the need for order scale and a filler task, participants were asked to imagine themselves being a customer of a retailer that offered two different reward programs. The first program was described as a reward program with a clear, well-defined endpoint and a clear specification of the means to attain it (i.e., as a program with a specific end-date at which members should have collected a specific number of points to redeem several specific rewards). The second program was described as a program with more ambiguous goals (i.e., as a continuous reward program without a fixed end-date, that offers the same rewards, but without specification of the required number of points). Note that the desirability of the rewards was held constant. Participants then learned that they were only allowed to become a member of one program and were asked to pick the reward program for which they would sign up. The two options were presented in random order. Finally, participants answered demographic questions and were thanked for their participation.
3.5.2 | Results

We performed a binary logistic regression on choice using chronic need for order as a predictor. As hypothesized, participants’ need for order was a significant predictor of their choice such that participants with a high need for order were more likely to choose the reward program with clear goals and means to attain them ($\beta = .63$, SE = .32, Wald = 3.82, $p = .05$). Conversely, and paralleling this finding, chronic need for order proved to be higher for participants who picked the reward program with clear goals and means to attain them ($M = 4.01$, SD = .66) than for participants who picked the program with ambiguous goals and means ($M = 3.65$, SD = .85; t(76) = 2.03, $p = .05$). Hence, the present findings extend the previous results by indicating that in addition to acute also chronic high levels of need for order translate in a greater tendency to engage in focused goal pursuit, characterized by a clear end state and a well-structured path leading toward it.

3.6 | Study 3

The results of studies 1 and 2 provide initial evidence that consumers feel more attracted to goals when a high need for order is induced by a disordered environment (Study 1) and when people have a chronic need for order (Study 2). Because these studies carry with them certain limitations, and more specifically their correlational nature and the contribution of common method variance to the results, we moved in Study 3 to a more controlled setting and focused on inducing different levels of need for order by means of systematically exposing consumers to different in-store environments. More specifically, we examined whether disordered compared to ordered shelf layouts induce different levels of need for order. We included a neutral control condition to assess the direction of any effects found. Furthermore, as an extra challenge to the robustness of our propositions and findings, we extended the previous results by exposing our participants to our treatment in a subtle, incidental, almost implicit fashion (see below for details). Moreover, we aimed to test whether consumers’ need for order affects only the preference for specific parts of the goal pursuit process (i.e., a well-defined end state and a clear specification of the means), as Study 1 and 2 have shown, or whether it also motivates consumers to actively engage in goal pursuit. In addition, the present study extends the previous results by directly testing the mediating role of the need for order in driving the impact of experiencing a disordered store environment on consumers’ willingness to actively engage in goal pursuit.

To examine the role of key alternate constructs in accounting for the effect of perceiving disorder on motivation in goal pursuit, we also included ancillary measures of mood, cognitive load, and of related constructs captured under the umbrella of need for closure (i.e., decisiveness, discomfort with ambiguity, shortsightedness, preference for predictability; Webster and Kruglanski 1994). If our reasoning is correct, we would expect the need for order rather than any of the other constructs to mediate any effects found.
3.6.1 | Method
3.6.1.2 | Participants and design
We used a between-subjects design with three conditions (store environment: disordered vs. ordered vs. neutral) in which 95 consumers, drawn randomly from an online Dutch consumer panel (i.e., not Amazon’s MTurk), voluntarily participated. We excluded five participants who failed to comply with the experimental instructions (Oppenheimer, Meyvis, and Davidenko 2009), such that the final sample consisted of 90 consumers (mean age = 40.17, SD = 13.06; 29% male).

3.6.1.3 | Procedure
This study was part of a series of studies undertaken by different research teams on reward programs. First, participants were asked to answer general questions about reward programs after which they were randomly assigned to the disorder, order, or neutral condition. In the next task we measured participants’ motivation in goal pursuit and their need for order.

Participants, assigned to one of the three store environment conditions, were exposed to four pictures of scenes depicting a disordered store environment (e.g., disorganized shelves and cloth racks), an ordered store environment (e.g., nicely organized shelves and cloth racks), or neutral pictures of landscapes which were used as controls (see Appendix B). From the start of the study these scenes functioned as the website’s background, were presented in soft-focus, and were fixated at the center of the screen (Mitchell, Nosek, and Banaji 2003). More specifically, they were slightly greyed out such that the study text in front of the scenes was easily readable. This manipulation of the need for order can be characterized as relatively subtle and implicit since the scenes were not explicitly introduced and the concepts of order and disorder were never explicitly brought to participants’ attention.

At the start of the study, all participants were asked to imagine that they were participating in a reward program. They learned that they collected points for a reward of their choice from a catalogue and that they were halfway in their pursuit of this goal. This ensured that motivation was not a function of the reward or of participants being close to the initial or end state, which has been shown to produce strong motivational effects (Hull 1932; Wiebenga and Fennis 2014).

In order to assess motivation in goal pursuit, participants subsequently rated their agreement with the following Likert statements: “I am motivated to reach the end state”, “Collecting credits is important to me”, “I am inclined to buy more products in order to receive additional credits”, “I want to finish the program”, and “I would invest much effort in this program in order to qualify for the reward” (1 = strongly disagree, 6 = strongly agree). Scores were averaged (Cronbach’s $\alpha = .87$) with higher scores indicating higher motivation in active goal pursuit. Next we assessed participants’ need for order and related constructs using an adapted, 24-item need for closure scale (Cratylus 1995; Van Kenhove, Vermeir, and Verniers 2001; Webster and Kruglanski 1994). The questionnaire included five items designed to capture the need for order (e.g., “I find that establishing a consistent routine enables me to enjoy life more” and “My personal
space is usually messy and disorganized” (reversed); Cronbach’s α = .80). The remaining items assessed the preference for decisiveness (five items, e.g., “When faced with a problem I usually see the one best solution very quickly”; Cronbach’s α = .81), discomfort with ambiguity (four items, e.g., “It is annoying to listen to someone who cannot seem to make up his or her mind”; Cronbach’s α = .45), shortsightedness (five items, e.g., “I do not usually consult many different opinions before forming my own view”; Cronbach’s α = .71), and preference for predictability (five items, e.g., “I like to have friends who are unpredictable” (reversed); Cronbach’s α = .83). Scores on the items representing need for order and the alternate constructs were averaged, with higher scores indicating higher levels of the constructs. Note that from the start until and including this stage of the experiment the background scenes representing our three conditions remained in place, but without them ever being alluded to explicitly.

Participants then moved to the final page, which showed a white background, and were presented with five semantic differential scale items. As a manipulation check, they were asked to what extent they thought the pictures they had seen in the background were disorganized/organized, chaotic/ordered, messy/tidy, littered/neat, and sloppy/sleek (on a scale anchored from 1-6). We averaged these five items to create an index of perceived orderliness of the pictures (Cronbach’s α = .98) with higher scores indicating that the pictures were perceived as more structured and ordered. Additionally, participants completed ancillary measures (one item of mood, 1 = very bad, 9 = very good; one item of cognitive load, “To what extent did you have to exert mental effort to perceive and process the background scenes?”; 1 = I did not have to exert a lot of mental effort; Monga and Houston 2006). After completion of the task, participants answered demographic questions, the instructional manipulation check, and questions to probe suspicion for our hypotheses. None of the participants was aware of the true hypotheses underlying this study. Finally, participants were debriefed and thanked for their participation.

3.6.2 | Results and Discussion

3.6.2.1 | Manipulation check

To test whether our store environment manipulation was successful a one-way ANOVA was conducted. Three participants did not fill out the manipulation check and were therefore excluded from this analysis. Results revealed a significant effect of store environment on perceived orderliness (F(2, 84) = 379.81, p < .001). Pairwise comparisons confirmed that participants in the disordered store environment condition perceived the pictures as less ordered (M = 1.49, SD = .53) than participants in the ordered store environment condition (M = 5.78, SD = .42; t(57) = 34.71, p < .001) and neutral condition (M = 5.11, SD = .83; t(49) = 18.20, p < .001). Furthermore, the pictures presented in the ordered store environment condition were perceived as more ordered than those presented in the neutral condition (t(62) = 4.21, p < .001). These findings indicate that participants had noticed the (subtle) background scenes and that the manipulation was effective, despite its deliberate subtlety.
3.6.2.2 | Motivation in goal pursuit

Next, and more importantly, a one-way ANOVA showed the expected effect of store environment on motivation in goal pursuit (F(2, 87) = 3.28, p = .04). Participants assigned to the disordered store environment condition were more motivated to engage in goal pursuit (M = 4.04, SD = 1.08) than participants assigned to the ordered store environment condition (M = 3.36, SD = 1.25; t(57) = 2.15, p = .04) or neutral condition (M = 3.32, SD = 1.00; t(52) = 2.51, p = .02). The ordered store environment and neutral conditions did not differ (t < 1).

3.6.2.3 | Need for order

A second one-way ANOVA revealed a significant effect of store environment on participants’ need for order (F(2, 87) = 4.07, p = .02). Pairwise comparisons indicated that the need for order was higher for participants in the disordered store environment condition (M = 4.50, SD = .93) than for participants in the ordered store environment condition (M = 3.73, SD = 1.14; t(57) = 2.69, p < .01) and neutral condition (M = 3.88, SD = .96; t(52) = 2.35, p = .02). Again, the latter two conditions did not differ (t < 1).

3.6.2.4 | Mediation analysis

To further explore whether need for order acted as a mediator of the relationship between store environment and motivation in goal pursuit, and following Hayes and Preacher (2013), we created two dummy variables (the first dummy variable for the disordered store environment condition and the second dummy variable for the ordered store environment condition) for the three-level categorical independent variable treating the neutral group as the reference category. A first regression analysis with motivation in goal pursuit as dependent variable and the store environment dummies as independent variables replicated the previous ANOVA results and indicated that a disordered store environment indeed promoted motivation in goal pursuit compared to the neutral condition (β = .27, t(87) = 2.31, p = .02; for the ordered store environment dummy, t < 1). A similar regression analysis with participants’ need for order as dependent variable revealed that a disordered store environment increased the need for order compared to the neutral condition (β = .25, t(87) = 2.16, p = .03; for the ordered store environment dummy, t < 1). A second regression analysis indicated that the previously significant positive effect of a disordered store environment on motivation in goal pursuit was reduced to non-significance when need for order was included in the model (β = .20, t(86) = 1.73, n.s.), whereas need for order remained a significant predictor (β = .28, t(86) = 2.64, p = .01).

We also estimated the 95% bias corrected [BC] confidence interval [CI] for the indirect effects of the two dummy variables on motivation in goal pursuit via need for order using a bootstrapping analysis (Hayes and Preacher 2013; Preacher and Hayes 2004) with 10,000 re-samples. The analysis confirmed that need for order acted as a significant mediator of the relationship between perceiving a disordered store environment and motivation in goal pursuit as the 95% confidence interval for the indirect effect did not include zero (BC 95% CI, .04 to .45).
For the ordered store environment condition, the confidence interval for the indirect effect did include zero (BC 95% CI, -.26 to .09). These results indicate that it is indeed a disordered and not an ordered environment that accounts for the mediated effect on motivation in goal pursuit.

3.6.2.5 | Ancillary measures
To examine whether the effects were driven by differences in mood, cognitive load, or constructs related to the need for closure, additional analyses were conducted. Separate one-way ANOVAs with these factors as dependent variables and store environment as independent variable indicated that only cognitive load was related to the store environment manipulation (F(2, 87) = 3.38, p = .04; for all other variables, F < 2.21, n.s.). However, cognitive load was unrelated to motivation in goal pursuit and hence could not mediate the effect of store environment on motivation in goal pursuit (i.e., the confidence intervals for both store environment conditions contained zero, BC 95% CI disorder, -.11 to .48, BC 95% CI order, -.13 to .03).

In sum, the present results show that the impact of type of store environment on motivation to actively pursue specific goals is driven by disordered (store) environments inducing an increased need for order, which in turn affects the tendency to engage in goal pursuit. Importantly, neither mood, cognitive load, or any of the four related motives were able to account for the observed relationship, thus ruling them out as alternate accounts of our findings.

Study 3 replicated our main hypothesis by showing that consumers with a high need for order are more motivated to pursue goals. Moreover, this study extends the findings of Study 1 as it shows that motivation in goal pursuit hinges on the extent to which the store environment affected consumers' need for order. It is interesting to note that we used the need for order items derived from the need for structure and closure scales (Webster and Kruglanski 1994; Thompson et al. 2001). Although these scales were originally designed to assess chronic individual differences, the present findings show that the need for order items were able to capture acute, state dependent changes in the underlying construct. In line with previous research using a similar approach (Schmeichel, Harmon-Jones, and Harmon-Jones 2010), we consider this finding a fairly conservative test of our notions. Nevertheless, the critical reader might argue that assessment of acute differences in need for order requires a measure that is specifically tailored to that task. To assess the robustness of our findings, this issue will be addressed in the next study.

In addition, although the pictures of a disordered and ordered store environment and the neutral pictures were never brought explicitly to consumers' attention and they were never asked to respond to the background stimuli, subtly encountering disorder rather than order or neutral cues resulted in an increased motivation to pursue goals. More specifically, disorder cues compared to order and neutral cues led to a higher need for order, which accounted for the impact of store environment on motivation in goal pursuit. Our analyses also indicate that it is the disordered and not the ordered environment that was responsible for the effects.
3.7 | Study 4

The previous findings indicate that when situational cues threaten a sense of order (rather than an ordered environment providing it), or when people have a chronic need for order, and hence when they are motivated to regain a sense of order, people feel more attracted to clear, well-defined endpoints (not particularly of high intrinsic desirability) and well-defined means to get there. In addition they show increased motivation to engage in the pursuit of those goals, that is, motivated to follow the clear road map to get there.

Nevertheless, the previous studies, although insightful, were still limited in that they relied on self-reports of our key construct – goal pursuit. Hence, the purpose of Study 4 was to replicate and extend these findings by examining the effect of a disordered compared to ordered store environment on actual, overt goal pursuit behavior in a realistic goal pursuit context. Secondly, we wanted to replicate and extent the notion that increased motivation in goal pursuit under conditions of disorder in itself serves the motivation to reaffirm a sense of order, rather than (its relationship with) the end state to be attained. In Study 4 we therefore kept the goal constant and focused on a direct implication of our reasoning. That is, we manipulated whether participants received monitoring information about their pursuit of the goal. If the tendency to engage in active goal pursuit per se is a motivational consequence of being faced with conditions of disorder, we expect a directional effect of cues monitoring goal pursuit, such that motivation in goal pursuit is higher when clear, structured information about the road toward the goal is present rather than absent. This effect should be attenuated in an ordered environment where, as the previous results show, there is no need to regain a sense of order. Third and finally, we wanted to test whether pursuing goals is indeed an effective way to reaffirm the experience of order, that is, to test whether the process of goal pursuit indeed satisfies the need for order induced by a disordered environment. These notions were tested using a different need for order measure and store environment manipulation (i.e., store noise; Kruglanski and Webster 1996) than used in the previous studies.

3.7.1 | Method
3.7.1.1 | Participants and design
This study used a 2 (store environment: quiet vs. noisy) x 2 (monitoring information: present vs. absent) between-subjects factorial design in which 99 students from a mid-sized university participated in exchange for partial course credit or monetary compensation. We excluded three participants who did adhere to the instructions given for the manipulation task (i.e., they did not wore the required headphones, see below for details), and two participants whose responses were three or more SDs away from the mean of our motivation measure since they would distort the results obtained (Judd, McClelland, and Ryan 2009, see below for details). The analyses reported below use the remaining 94 responses (mean age = 19.50, SD = 2.11; 60% male).
3.7.1.2 | Procedure

Participants were informed that the study consisted of several unrelated parts and were randomly assigned to one of the four conditions. For the first task, which entailed the store environment and monitoring information manipulations, participants learned that they could earn additional money by solving anagrams. We measured motivation in goal pursuit as time spent on an unsolvable puzzle (Goldsmith and Dhar 2013; Holland et al. 2009; Huang and Zhang 2011). After having completed this part of the study, participants were presented with questions assessing their need for order. Finally, participants answered demographic questions, and were thanked, compensated, and debriefed.

For the anagram task, participants were informed that the task involved different word unscrambling puzzles and that by solving them quickly yet accurate they could earn additional money on top of the normal compensation for participation in the study. Words appeared one by one on a computer screen, and participants were told that they had to rearrange the letters of the presented word in order to produce a new word using all the existing letters only once. The words were presented in a fixed sequence with increasing difficulty such that the first trials consisted of simpler words with fewer letters than the later trials. Participants completed 20 trials. The first three trials were practice trials, after which they received performance feedback.

To manipulate monitoring information, participants were either or not exposed to information indicating their progress toward the end state which was presented above the anagram. When monitoring information was present, participants saw the text “This is anagram 1 of 17” (and so on) indicating their progress toward the end state. In contrast, when monitoring information was absent, participants read “This is anagram 1 of [totalwords = unknown]” (and so on) and hence were left uncertain about their level of progress toward the end state. Following previous research (Goldsmith and Dhar 2013), we assessed motivation by measuring time spent persisting on an unsolvable anagram (measured in seconds), which was the twelfth anagram in the sequence. In line with Study 3, this position was chosen to ensure that motivation in goal pursuit was not a function of participants being close to the initial or end state.

Before the anagram task started, participants were led into separate cubicles and all were asked to put on headphones which were connected to a computer. They learned that they were not allowed to take off their headphones until they were notified to do so. The manipulation of store environment started after the general instruction and once the anagram task commenced. In the noisy store environment condition participants experienced the ambient sound of a shopping mall, whereas in the quiet store environment condition participants were not submitted to noise. Previous research has shown that exposing participants to environmental noise while performing a task is a reliable paradigm to induce elevated levels of need for order (Kruglanski and Webster 1996).

When the participants had finished the anagram task they responded to the following need for order questions: "At the moment I need consistency and routine" and "At the moment I need
organization and structure" (1 = strongly disagree, 7 = strongly agree). The items are similar to those used in the previous studies, but the wording was slightly adapted to tap more into the temporary nature of participants' need for order. Scores were averaged to create a need for order index ($r(94) = .69, p < .001$) with higher scores indicating higher need for order. Participants also answered seven items measuring stress and agitation (e.g., "I felt agitated during the anagram task", 1 = strongly disagree, 7 = strongly agree; Cronbach's $\alpha = .80$). A one-way ANOVA indicated that store environment, monitoring information, nor their interaction affected feelings of stress and agitation ($F < 1$) and so this will not be discussed further.

3.7.2 | Results and Discussion
3.7.2.1 | Motivation in goal pursuit
A 2 (store environment) x 2 (monitoring information) ANOVA with motivation in goal pursuit as dependent variable did not show main effects of either store environment or monitoring information ($F$'s < 1). However, the store environment by monitoring information interaction proved to be significant ($F(1, 90) = 6.90, p = .01$). To explicate the interaction, simple main effects analyses were conducted which showed that – in line with the predictions – cues monitoring progress toward the goal only promoted motivation in goal pursuit when participants were exposed to the noisy, disordered store environment ($F(1, 90) = 4.95, p = .03$), but not when noise was absent ($F(1, 90) = 2.24, n.s.$). More specifically, when progress cues were present, participants exposed to the noisy, disordered environment spent almost twice as long working on the unsolvable anagram ($M = 62.50$ seconds, $SD = 36.63$) compared to when such cues were not provided ($M = 39.26$ seconds, $SD = 23.21$). For participants in the quiet, ordered store environment condition, progress information did not affect motivation in goal pursuit ($M_{\text{present}} = 44.17$ seconds, $SD = 30.03$ vs. $M_{\text{absent}} = 60.21$ seconds, $SD = 48.05$; see Figure 3.1).

![Figure 3.1](motivation_time_spent.png)

Figure 3.1 | Motivation in goal pursuit (time spent in seconds) as a function of store environment and monitoring information (Study 4).
3.7.2.2 | Mediation analysis
We were also interested in testing whether pursuing a goal proved to be an effective way to regain a sense of order and therefore examined the effect of actual goal pursuit behavior on participant’s need for order under the specified conditions. As a first step, we regressed participants’ need for order on their motivation in goal pursuit. As expected, motivation in goal pursuit and need for order were negatively related (β = -.30, t(92) = 3.00, p < .01), such that participants who were more motived in goal pursuit subsequently indicated to have a lower need for order.

Following the recommendations of Preacher, Rucker and Hayes (2007; Edwards and Lambert 2007), we then tested the complete model by means of a moderated mediation analysis where monitoring information is posited to moderate the effect of store environment on the mediator – motivation in goal pursuit (indicated by our measure of time spent on the unsolvable anagram) – which in turn influences the need for order.

The previously reported results had established that store environment and monitoring information interacted in the prediction of motivation in goal pursuit. Hence, to test our moderated mediation model, we performed a regression analysis to test whether motivation in goal pursuit significantly predicted need for order, while controlling for the store environment by monitoring information interaction and all main effects. This proved to be the case (β = -.27, t(89) = 2.57, p = .01).

The third and final step in the analysis confirmed the mediating role of motivation in goal pursuit. More specifically, a bootstrapping procedure with 10,000 re-samples revealed that the 95% confidence interval for the conditional indirect effect – the value of the indirect effect conditioned on the moderator, monitoring information – of store environment on need for order (via motivation in goal pursuit) did not include zero (monitoring information present, BC 95% CI, -.27 to -.01; monitoring information absent, BC 95% CI, .01 to .28). Hence, the former interval indicates that a disordered environment in which goal pursuit monitoring cues are present positively affects motivation to engage in goal pursuit, which subsequently alleviates or satisfies the need for order. Interestingly, the latter finding shows the opposite process when monitoring information is absent. That is, it shows that a disordered (noisy) environment, where progress cues are absent, produces lower levels of goal pursuit motivation (i.e., less time spent on the unsolvable anagram), which, in turn, produced higher levels of the need for order. In sum, using a different store environment manipulation and need for order measure, these results replicate and extend previous findings in several ways. First, by manipulating whether the ongoing goal pursuit could restore a sense of order by varying whether participants received structured information about the road toward the end state, this study showed that monitoring information mainly affected participants in the disordered environment condition. When they were exposed to the ambient sound of a shopping mall, the presence of monitoring information resulted in higher motivation in goal pursuit compared to when monitoring information was absent, which is in line with the findings of Studies 1-3. Hence, for these individuals, a clear notion of their progress toward the end state was more motivating than not having
this information, a distinction less consequential for participants who were not exposed to environmental noise. Second, we showed that goal pursuit enables people to reaffirm a sense of order. More specifically, the extent to which participants were engaged in the pursuit of a goal was reflected in subsequent changes in their need for order, such that higher motivation in goal pursuit was followed by a lowered need for order. Third, this study showed that motivation in goal pursuit drives the effect of the store environment by monitoring information interaction on people’s need for order. More specifically, if goal pursuit served as a means to regain a sense of order after a disorder threat because monitoring information was present, participant’s need for order decreased to the extent that they were engaged in goal pursuit. Conversely, if the goal pursuit process amplified the experience of disorder because participants were exposed to environmental noise while performing a task without a clear endpoint, the need for order increased to the extent that they were motivated to escape the aversive situation.

3.8 | General Discussion

People have a strong need to perceive their environment as an orderly place. In the present research, we aimed to contribute to literature on people’s need for order by studying the link between exposure to a disordered environment, the need for order, and goal pursuit. Specifically, we expected both acute (induced by a disordered environment) and chronic high need for order to increase the perceived attractiveness of well-defined goals, well-defined means to attain them, and to actually promote motivation in goal pursuit. We further proposed that the goal to reaffirm a sense of order is the underlying mechanism driving the effect of a disordered environment on goal attractiveness and goal pursuit. More specifically, we hypothesized that a disordered environment would increase the need for order, thereby boosting the need to regain a sense of order, and that setting and pursuing goals would be an effective way to reaffirm such an experience, that is, to satisfy the need for order induced by disorder.

The findings of a series of studies were in line with our predictions and proved robust across various methodological and conceptual variations. More in particular, we found the predicted effects in the field and in more controlled settings, using a student sample and more heterogeneous samples of European and American consumers, and across a total of 305 respondents. Further, we assessed need for order as a trait variable and exposed participants to various environmental disorder cues, ranging from a crowded shopping street and chaotic store shelves, to the ambient sound of a shopping mall. The findings were obtained using both hypothetical and real goals and across different indices of motivation (i.e., motivational intentions, choice, and overt goal pursuit behavior). Across all these variations we consistently found that situationally induced and chronic need for order promotes goal pursuit.

Studies 1 and 2 showed direct support for the effect of chaos and disorder on consumer goal pursuit. More specifically, Study 1 found that consumers felt more attracted to a reward
program that provided a sense of order when they experienced a greater lack of structure due to environmental cues. Measuring need for order as an individual difference variable, Study 2 replicated this result and showed that chronic high need for order individuals were more likely to choose a reward program with clear rather than ambiguous goals. Study 3 provided evidence for the assumption that the need for order is the psychological process driving the proposed effect of chaos on goal pursuit. More specifically, the results on the mediating role of the need for order showed that disorder cues induced the need to regain a sense of order, and that this motive accounted for the positive impact of perceiving disorder on motivation in goal pursuit. Finally, Study 4 showed that pursuing goals is an effective way to restore a sense of order when exposed to a disorder threat. That is, participants’ need for order induced by disorder decreased to the extent that they were more engaged in goal pursuit, but only when goal pursuit served as a means to restore a sense of order and structure (i.e., when monitoring information was present rather than absent).

Together, these findings offer several important theoretical contributions. First, this research contributes to our understanding of compensatory control mechanisms by offering a new perspective on how people seek order as a response to disorder threats (Kay et al. 2008; Whitson and Galinsky 2008). Although previous work has focused on more extreme and irrational strategies such as the development of superstitions and relying on supernatural or conspirational forces as ways of regaining a sense of order, the current findings reveal another more typical and mundane route by which people can restore the belief that the world is not ruled by randomness – goal setting and goal pursuit. In addition, we add to literature on compensatory control mechanisms by showing that the motivational consequences of threats to order are dynamic and more diverse than might be expected based on previous research. That is, the present work is among the first showing that effects of disorder extend to behavioral intentions and overt behavior rather than being limited to the cultivation of certain beliefs aimed to restore a sense of structure and order. In addition, this work contributes to the reservoir of findings highlighting the role of external agents such as God, or the government as sources of compensatory strategies. In extension, we show that the experience of disorder can be remedied by a source of internal origin: setting and pursuing a goal, even when that goal has no relation with the disorder experience as such. Moreover, our results suggest that the process of goal setting and goal striving might be triggered outside conscious awareness and so may be considered a fairly implicit form of self-regulation.

Second, this research extends work on the fundamental human motivation to perceive the world as an orderly, sense-making place by considering its effect in the less explored context of consumer behavior (Cutright 2012; Cutright et al. 2013). This work illustrates that both disorder threats and strategies to remedy experiences of disorder are ingrained in consumer life, and hence do not remain limited to such extreme, exceptional events as natural disasters or terrorist attacks. Moreover, by examining the role of the need for order in the marketing and consumer sphere, our work also adds to the growing literature on how consumers use their consumption
efforts to buffer against and respond to self-threatening events (Gao, Wheeler, and Shiv 2009; Rindfleisch, Burroughs, and Wong 2009; Rucker and Galinsky 2008). Although we specifically focused on goal pursuit in reward programs as one way through which consumers can regulate a disorder threat, our work indicates that this research topic must be broadened to include a wider range of compensatory consumer behavior.

Third and finally, the present work advances our knowledge of the impact of store atmospherics on consumption, and more specifically, consumer goal pursuit. Most studies on store atmospherics have examined how specific environmental factors affect consumer judgments and, with a view exceptions, behavior (Argo, Dahl, and Manchanda 2005; Levav and Zhu 2009; Meyers-Levi and Zhu 2007). This work investigates the effect of disorder as a higher construct comprising diverse atmospheric variables on actual consumer behavior, and demonstrates that subtle, incidental disorder cues consumers frequently encounter significantly impact real-life consumer behavior, regardless of whether they specifically relate to noise, store layout, or (social and visual) clutter. In so doing, this work suggests that a better understanding of signs of order and disorder in the retail environment and of their consequences for consumer judgment, decision making, and behavior is needed (for managerial implications, see also Chapter 5.2).

Although our subtle environmental cues reliably triggered the motive to achieve order which in turn affected goal pursuit, it remains an open question whether more extreme and dramatic circumstances will produce the same effect, for instance after natural disasters or terrorist attacks. Will people then respond similarly? It may well be that these cues too, would trigger elevated levels of goal setting and goal pursuit, as our opening example would suggest. Nevertheless, future research might profitably explore this notion more in depth. A related question is whether achieving a sense of structure and regularity is always beneficial and functional or whether there are also instances in which cultivating a perception of disorder may yield positive outcomes. A case in point might be creativity where a sense of order and structure may not be beneficial and may even hamper creative, original, non-standard idea generation (Mehta, Zhu, and Cheema 2012). Given that many businesses thrive on consumers’ creativity, for instance the fashion or home decoration industry or manufacturers of new and innovative products, providing a sense of order and structure might not necessarily be a key objective for marketers aiming to capitalize on consumers’ perceptions of order and disorder.

How people try to cope with order-related threats is dependent on the compensatory strategies available to them (Kay et al. 2008). In our research, goal pursuit was the only means by which participants could restore a sense of order. Future research could examine whether goal pursuit is indeed the strategy of choice when the consumer’s toolbox includes more than one way to deal with the threat, or whether alternative, external sources of structure and order (such as God or the government) are then relied upon. The strategy of choice might well be the one that people (implicitly or explicitly) believe is most effective in restoring the sense of order. Indeed, recent circumstantial evidence points to this notion. That is, Laurin, Kay, and
Fitzsimons (2014) recently showed that when people viewed God as an omniscient, rather than omnipotent, controlling entity, and hence believed that the universe does not operate according to a predetermined plan, they relied more on alternative order restoring strategies. This finding also suggests that not all goal pursuit will be equally effective in restoring the need for order, but that its usefulness as an order restoring strategy is dependent on the extent to which it instills a sense of order and structure.

We started this article by noting that in the aftermath of the September 11th, 2001 terrorist attacks the American citizens started to act on the ‘marching orders’ of George W. Bush. Although in the current research we embedded disorder threats within a consumer context and not within terrorist attacks themselves, these findings shed some light on why the public after the attacks may have started to actively pursue the goals given. In the face of such an exceptional and extreme event and the chaos it evokes, it can be difficult to view the world as a sense-making, orderly place composed of understandable cause and effect relations. Given that the attacks prompted an experience of disorder, perhaps a small proportion of why the American citizens after 9/11 increased their participation in the economy, showed more altruism, and became more religious can be explained through their need to restore impaired feelings of order and structure.