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Unsworth, KL, Dmitrieva, A and Adriasola, E (2013) Changing behaviour: Increasing the effectiveness of workplace interventions in creating pro-environmental behaviour change. Journal of Organizational Behavior, 34 (2). pp. 211-229. ISSN 0894-3796

https://doi.org/10.1002/job.1837

Changing Behavior: Increasing the Effectiveness of Workplace Interventions in Creating Pro-Environmental Behavior Change

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There is a great deal of research outlining interventions to increase pro-environmental behavior, many of which are aimed at employees. However, to date the results for these have not lived up to their initial promise. Instead of offering another intervention, we propose a model which identifies psychological conditions under which these interventions are most likely to succeed. Through the integration of previously separate literatures from experimental social psychology, organizational psychology, organizational behavior and environmental psychology we suggest that the degree to which the intervention-related goal is efficacious and attractive, self-concordant, in conflict with other goals, and perceived to be completed will affect the level and type of behavior change. Our model aims to provide actionable knowledge that extends our understanding of the effectiveness of workplace interventions designed to increase green organizational behavior.

Patrick thinks of himself as being environmentally-friendly – he knows that driving a car is contributing to destructive greenhouse gases and his organization has recently increased the price of on-site parking to discourage employees from driving to work. Yet, every day when he thinks about the myriad of things he has to get done at work he hops into his car to drive to his office even though he lives on a bus route. How can we encourage employees to engage in pro-environmental behaviors when we still don't understand when, why and how interventions to change this behavior work?

The need to increase pro-environmental behaviors in employees is readily apparent and rapidly increasing (IPCC, 2007; KPMG, 2005). Although a number of interventions to increase these behaviors in the general population have been proposed in the pro-environmental literature (Abrahamse, Steg, Vlek, & Rothengatter, 2005; Osbaldiston & Schott, 2012) research suggests that they are not working as well as theorising suggests they should. In this paper, we take a step back and, rather than proposing yet another intervention, we examine some of the psychological conditions that are likely to improve the effectiveness of the intervention, particularly within the workplace. We develop new theory to build a model that highlights these conditions and produce "actionable knowledge" (Argyris, 1996) that extends theory in a way that allows us to understand the consequences of the actions we take within an organization.

This work, therefore, represents a contribution to the pro-environmental literature by taking a fresh approach to the question of increasing green organizational

behaviors. In particular, we build on current theories which focus on only the "green" goal or value, such as the Theory of Planned Behavior (TPB: Ajzen, 1985) and Value-Belief-Norm model (VBN: Stern, 2000), by considering this goal or value within the context of the employees' other goals. To do this, we draw on theories of goal hierarchy, goal systems, multiple goals, self-concordance, and values. By taking this novel approach we are able to synthesise previous literature, identify new outcomes of interventions, and develop new propositions around the factors influencing the effectiveness of workplace interventions; in essence we aim to build a model of actionable knowledge around when, why and how pro-environmental interventions are most likely to work.

We will first define pro-environmental behavior and our founding assumptions before providing an overview of the current understanding around pro-environmental interventions. We will then briefly outline our model, before discussing the elements of the model in more detail and their subsequent outcomes. Finally we will present the implications of the model for both theory and practice.

Defining Pro-Environmental Behavior

Pro-environmental behavior can be defined as behavior that intentionally pursues reduction of the negative impact of people's actions on the natural world (Stern, 2000). Within an organization, Ones and Dilchert (2010; 2012) defined employee green behaviors as "scalable actions and behaviors that employees engage in or bring about that are linked with, and contribute to, environmental sustainability". They categorise these behaviors as: working sustainably (e.g., creating sustainable product and processes); avoiding harm (e.g., preventing pollution); conserving (e.g., reusing); influencing others (e.g., educating and training for sustainability); and taking initiative (e.g., lobbying and activism). While a number of studies have examined the promotion of green behaviors (e.g., Abrahamse et al., 2005; Dwyer, Leeming, Cobern, & Jackson, 1993; Lucas, Brooks, Darnton, & Elster Jones, 2008; Young & Middlemiss, 2011), we will focus on externally-driven interventions rather than internally-driven changes in behavior (see De Young, 1993) such as those that might be implemented across a workplace.

There are a vast number of such interventions that have already been proposed to improve engagement in broader pro-environmental behaviors and this work has significantly advanced our understanding in this area (see e.g., Osbaldiston & Schott, 2012). However, whilst it might be a controversial statement, we suggest that it is highly unlikely that there will be a "silver bullet" intervention or set of interventions which will suddenly be able to change employees' behavior to incorporate more pro-environmental actions. Instead, we suggest that a more profitable approach is one that looks at the underlying conditions which might make a range of interventions more effective. This is particularly important for organizational green behaviors which, as we will discuss later, face distinctive challenges. Unfortunately, there is little theoretical background to understanding these conditions. Thus, in this paper we draw upon theories from social psychology, cognitive psychology and organizational behavior to develop such a model.

Our model, contextualised to the workplace, differs from previous research by starting with two key assumptions: 1) that

green behavior is only one of many behaviors or tasks that an employee can choose to engage in; and 2) that green goals are only one of many goals towards which employees will be working. Most previous research into understanding pro-environmental behavior has generally focused on these green behaviors and goals in isolation (with some exceptions e.g., Barr, Gilg, & Shaw, 2011; Brown & Kasser, 2005). We take a different approach by explicitly recognising that green behaviors (e.g., getting the bus to work) and green goals (e.g., reducing one's carbon footprint at work) are simply one of many behaviors and goals that employees must deal with at any given point in time. Employees may be deciding between working on a report or walking to the recycling bin; while at work they may be juggling their efficiency goals, their service and relationship goals, their family goals, their career ambition goals, and so forth (Klein, Austin, & Cooper, 2008), on top of any green goals they might have.

We recognise that a great deal of research and theorising has already examined changes in pro-environmental behavior, particularly work based on the VBN (Stern, 2000; Stern, Dietz, Abel, Guagnano, & Kalof, 1999) and the TPB (Ajzen, 1985, 1991) and we are not dismissing that work; instead, we will build upon that body of literature and integrate it with other literatures that can inform and extend this understanding. We will now outline this previous work before providing a brief overview of the model and discussing the elements of the model in more detail.

Current Understanding of Pro-Environmental Interventions

Two of the most commonly applied theories to understanding pro-environmental behavior are Stern's (2000) Value-Belief-Norm theory and the Theory of Planned Behavior (Ajzen, 1985, 1991). The VBN posits that values relate to an individual's beliefs which then form intentions to act through norms. Although the model has been extensively used the average maximum amount of variance explained by the VBN model has been 35% (e.g., Stern et al., 1999). From an academic perspective this is quite a large amount of variance, however practically this means that we cannot explain individual engagement in green behaviors nearly two-thirds of the time.

The second model is the TPB which suggests that behavior is driven by an intention which is itself driven by a combination of attitudes (whether you think it's a good thing to do), subjective norms (whether others think you should do it), and perceived behavioral control (whether you think you can do it). The TPB has explained a significant amount of variance in pro-environmental behaviors such as recycling, water and energy conservation and farming practices amongst others (Cheung, Chan, & Wong, 1999; Fielding, McDonald, & Louis, 2008; Fielding, Terry, Masser, & Hogg, 2008; Ramus & Killmer, 2007; Taylor & Todd, 1995). Yet, similar to VBN research, whilst the model has found significant results, these results still leave a sizeable amount of variance to be explained. For instance, Fielding and colleagues (2008) found in a sample of university students that the TPB constructs were able to explain 32% of the variance, but this was for predicting intentions, not enacted behavior. Similarly, across a range of pro-environmental behaviors, Harland, Staats and Wilke (2006) found that the TPB was able to explain from only 13% of the variance in changing light bulbs to more

efficient ones to a maximum of 40% of the variance in using environmentally-friendly transport – yet this was correlated with past behavior, not actual future behavior. At best, perceived behavioral control, attitudes and moral norms have been found in a meta-analysis to predict only 52% of the variance in intentions, and intentions translated into only 27% of the variance in actual behavior (Bamberg & Moser, 2007). These moderate relationships have been found in experiments using the TPB to explain behavior change across a wide range of behavior not just pro-environmental behavior (Webb & Sheeran, 2006). In this paper we therefore aim to build on the VBN and TPB models to identify ways in which we could predict the successfulness of pro-environmental interventions on behavior change more effectively.

With regard to more specific intervention studies, most, either in the home or in the workplace, have focused on improving the content of the intervention. These have covered a vast range of both antecedents and consequences of pro-environmental behavior. For instance, Katzev and Johnson (1983) and Pallak and Cummings (1976) demonstrated that commitment had long-term effects for reducing household energy use, however, later research did not find any support for long-term effects (Katzev & Johnson, 1984). Research on goal setting (Becker, 1978; McCalley & Midden, 2002) has shown that goal setting combined with feedback led to significant reductions in energy use. Likewise, information has been shown to be more effective as part of a combination of interventions and its effects depended mostly on its specificity (e.g. Van Houwelingen & Van Raaij, 1989). Studies have also shown that modelling leads to increased knowledge and reductions in energy use (Winett, Leckliter, Chinn, Stahl, & Love, 1985). Mass media campaigns were found to lead to more positive attitudes (e.g. Staats, Wit, & Midden, 1996), but there was no indication of reduced energy use. Some research has found that home energy audits using tailored energy advice led to reductions in energy use (Winett, Love, & Kidd, 1982-1983) and increases in efficiency actions (Gonzales, Aronson, & Costanzo, 1988), but others failed to find any reductions as a result of tailoring (McDougall, Claxton, & Ritchie, 1982-1983).

When considering consequence-based interventions, studies have generally shown that feedback was an effective strategy for reducing household energy use (e.g. Seligman & Darley, 1977) whether used once only (Kantola, Syme, & Campbell, 1984), concerned with monetary or
>(see Gioia & Poole, 1984)</Dis
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Overall, the results of these intervention studies are by no means conclusive. While goal-setting, social modeling and feedback appeared successful in bringing about short-term changes in energy use especially when used in combination with other

interventions (see also Osbaldiston & Schott, 2012) the long-term effects have either not been tested or have provided mixed findings. Similarly, rewards interventions appear to be effective, but there is some indication of this effect disappearing as soon as the reward is discontinued. It therefore seems apparent that, while helpful, these interventions are not achieving the expected returns either in the home or the workplace. However, instead of the traditional approach that looks at identifying new intervention content, we suggest that the mixed findings could indicate unidentified moderators which are influencing the effect of the interventions on the outcomes. We will now discuss our model which identifies some of these moderators.

Overview of the Model

In sum, our model suggests that there are various stages betwixt the intervention and the outcome and that there are moderators for each of these stages. Our models rests on the assumption that workplace pro-environmental behavior is goal-directed (Austin & Vancouver, 1996) and as such, we focus on the goal-related elements that are likely to be involved in these stages.

As shown in Figure 1 and Table 1, we suggest that the first stage "outcome" is one of goal activation: The pro-environmental goal must be chosen and activated before the employee can work on achieving that goal through behavior change. We suggest that an interaction between the characteristics of the intervention and the employee will affect the strength of the goal activation. In particular, we use the concept of self-concordance to determine the extent to which an employee will take on the messages from the intervention and choose to engage in the behavior. We define self-concordance as the degree to which the pro-environmental behavior expresses any of the employee's stable interests and values (Sheldon & Elliot, 1999); for example, an employee might perceive commuting to work via public transport as expressing a green or biospheric value, or he or she might perceive it as expressing an egoistic value around saving money; in either case the behavior would be considered self-concordant.

Of course, the employee's perception of self-concordance may be affected by the intervention so we must differentiate between the initial self-concordance and the ongoing self-concordance following the intervention. This is particularly necessary in the second stage of the model which considers the wider activation of goals associated with the intervention-related goal. As we shall discuss, the degree to which this broader activation occurs will depend upon the ongoing level of self-concordance, and will result in longer-term behavioral change.

The final stage of the model looks at the movement from goal activation to outcomes. First, if there are no other goals then spillover into other pro-environmental behaviors will likely occur when the higher-order goal highlighted by a broader activation can only be achieved by engaging in other related behaviors. Second, if there are other competing goals (e.g., a pro-environmental goal and a work performance goal) then goal conflict emerges. . We propose that goal conflict will affect the outcome of an intervention, regardless of whether or not the behavior is self-concordant for the employees. When the behavior is not self-concordant then we shall show how goal conflict will likely lead to the rebound effect such that the

employee engages in the pro-environmental behavior but then engages in a behavior detrimental to the environment. When the behavior is self-concordant then we shall show how goal conflict will likely lead to "fads" of pro-environmental activity depending upon the completion of other goals. We will now explain our theoretical arguments in more detail.

Short-Term Effects: The Effect of Goal Efficacy & Attractiveness

Before green behavior change can occur, the employee must choose to engage in the behavior and thus activate the goal being promoted by the workplace intervention[1]. The predominant view is that goal choice and goal activation depends upon expected utility as the key determinant – a combination of the goal's efficacy and attractiveness (Klein et al., 2008; Schmidt & DeShon, 2007; Vancouver, Weinhardt, & Schmidt, 2010).

Given that most behavior is goal-directed (Austin & Vancouver, 1996), we should therefore see that interventions are aimed at increasing the strength of the goal activation, through increasing the ease with which the goal can be accomplished or its attractiveness. Although previous literature has not explicitly identified these mechanisms, it can be seen that this is indeed where interventions are aimed. For instance, interventions such as providing knowledge and information (Staats, Leeuwen & Wit, 2000; Winett, Love & Kidd, 1982-1983), or modelling (McMakin, Malone & Lundgren, 2002; Winett, Leckliter, Chinn, & Stahl, 1984) enable an employee to easily engage in the green behavior (Osbaldiston & Schott, 2012), thus increasing the expectancy that a behavioral goal can be achieved. Others which implement rewards or punishments (Hayes & Cone, 1977) or increase commitment (Osbaldiston & Schott, 2012) are likely to affect the goal's attractiveness. In this way, we can explain the mechanisms behind much of the previous intervention literature.

However, our model goes beyond this by realising that the employee who is engaged in an intervention does not come into it as a blank slate. Instead, most employees will already have an implicit perception of the self-concordance of the behavior for themselves before they are even involved in the intervention. Previous research suggests that the extent to which a behavior expresses stable interests and values, that is the self-concordance of the behavior to the individual, will influence the attractiveness of that behavior (Ford, 1992; Klein et al., 2008; Sheldon & Elliot, 1999). Thus, we argue that the degree to which the intervention has an effect on the perceived attractiveness will depend not only on the intervention but also this initial self-concordance. An employee who already believes that the behavior is somewhat self-concordant is likely to be more strongly affected by an intervention than an employee who strongly believes that the behavior is most definitely not self-concordant.

Overall, therefore, we propose that the choice of the intervention-related pro-environmental goal, as indicated through the strength of the goal's activation, will be affected by the employee's perception of his or her ability to achieve the pro-environmental goal (efficacy) and the degree to which he or she values that goal (attractiveness). The perception of efficacy

[1] This activation need not be conscious (Aarts, Custers, & Marien, 2008).

will be affected by the characteristics of the intervention. The perception of attractiveness will result from an interaction between the intervention and the employee's initial perception of the self-concordance of the pro-environmental behavior.

The underlying principle of what we are suggesting in this proposition is not radically different from ideas implicit within the extant pro-environmental behavior change literature: An intervention will affect an individual and that will affect his or her behavior. For example, de Groot and Steg (2009) proposed that for interventions to be most effective they should focus on an individual's altruistic or biospheric values rather than their egoistic values (see also Schultz, 2000; Schultz et al., 2005) presumably increasing the attractiveness of the pro-environmental goal to the individual. Others have suggested that interventions should combine strategies that both increase knowledge and change attitudes (e.g., Staats et al., 1996), again thereby presumably increasing both the goal's attractiveness and efficacy. Furthermore, these two goal constructs can account for the variables associated with the TPB and VBN models: Efficacy perceptions relate directly to the construct of perceived behavioral control within the TPB and attractiveness perceptions relate directly to the construct of attitudes, subjective and personal norms, and values within both the TPB and VBN models.

Nonetheless, this proposition significantly extends previous literature in two ways. First, rather than jumping straight from the intervention to the behavior, we identify the cognitive mechanisms through which the intervention results in behavior change. Rather than just looking at main effects, we suggest that goal activation (via goal attractiveness and goal efficaciousness) mediates the relationship between the intervention and the ultimate behavior. Second, and perhaps most significantly, we recognise the importance of the employee's initial self-concordance in moderating the effect of the intervention's characteristics on perceptions of goal attractiveness.

Proposition 1: The strength of the pro-environmental goal activation will depend upon the goal's efficacy and attractiveness. Perceptions of efficacy will be related to the characteristics of the intervention. Perceptions of attractiveness will be related to an interaction between characteristics of the intervention and the employee's initial self-concordance. Moreover, the stronger the pro-environmental goal activation, the greater the likelihood that the employee will engage in the behavior in the short-term.

Long-Term Effects: The Moderating Role of Self-Concordance

As noted above, we take a multi-level approach whereby we consider employees nested within interventions, allowing us to investigate the interaction between the two. Thus, when examining the longer-term effects of pro-environmental behavioral goal activation we suggest it is necessary to look at the context that surrounds this goal. We derive our propositions from an integration of the goal hierarchy, goal systems and self-concordance literatures. Goal hierarchies represent the well-accepted premise that goals operate within a system with higher-order, abstract, long-term goals (that is, values) at the top of the hierarchy and concrete day-to-day task goals at the bottom of the hierarchy, with identities and long-term project goals in the middle (Austin & Vancouver, 1996; Cropanzano, James, & Citera, 1993; Ford,

1992). While little empirical research has been conducted in this area within organizations (with some exceptions: Bateman, O'Neill, & Kenworthy-U'Ren, 2002; Brett & VandeWalle, 1999; Sosik, Jung, & Dinger, 2009), a great deal of empirical work in experimental social psychology has verified the existence and effects of similar goal systems (e.g., Johnson, Chang, & Long, 2006; Kruglanski et al., 2002).

By taking this approach we recognise the potential multitude of motives behind each pro-environmental behavior. For instance, an employee pro-environmental behavior such as commuting via public transport might be linked not only to a green goal but also to a health goal and a budgeting goal and these goals might be linked to parent, employee and healthy-person identities. Indeed, De Young and Kaplan (1986) found a diverse range of motives for engaging in conservation behavior ranging from "green" values to more egoistic reasons such as money, convenience and lifestyle goals. In addition, our approach also recognises the multitude of goals that an employee will be juggling at any one time.

Following Hanges, Lord and Dickson (2000), we suggest that the goal hierarchy comprises a connectionist framework in which the pattern of connections between goals is more important than any one particular goal. The pattern is similar to a neural network in that there is a spreading activation of all relevant connections and goals – over time and repeated activations, each pattern becomes relatively stable (Collins & Loftus, 1975). These stable patterns become scripts (see Gioia & Poole, 1984) enabling particular patterns of activation to occur subconsciously (see e.g., Aarts & Dijksterhuis, 2000). An analogy may be the paths worn by people between buildings – although many routes are possible, people begin to use the same ones and these routine "goat paths" then become the stable structure.

However given the limits of our attentional abilities individuals can focus only on a small portion of their overall self-schema at any one point in time (Markus & Wurf, 1987), therefore, the pattern that is activated will change depending upon which goal is salient at the time (Cropanzano et al., 1993; Humphrey, Moon, Conlon, & Hofman, 2004; Klein, 1989). Furthermore, because of these resource constraints we need to differentiate between a person's focal goal as the one that he or she is pursuing at a particular time, and their background goals which are goals that exist in their goal hierarchy but which they are not actively pursuing (Kruglanski et al., 2002)[2].

This more sophisticated understanding of an individual's self-concept more accurately represents the motivational pursuits of an employee (Johnson et al., 2006; Kruglanski et al., 2002). However, this realisation of multiple goals creates the need to identify what happens when particular goals and patterns of goals are activated (compared to when they are not) and what happens when there is goal conflict between the employee's green goal and their other goals.

Proposition One outlined when the pro-environmental goal related to the intervention would be activated. The

[2] Although we use the term focal goal and background goal, these could just as easily be focal/background value, focal/background identity, or focal/background behavior, depending upon the level that is salient at the time (Vallacher & Wegner, 1987).

activation of this behavioral goal will lead to the activation of the associated higher-order goals within the connectionist pattern (Shah & Kruglanski, 2003). However this higher-level activation can only occur if the behavioral goal is self-concordant. As noted by Adriasola and Unsworth (2011), if a behavioral goal is not self-concordant and thus not expressing any higher-order value then it will not be connected to the higher-order goals in the employee's goal hierarchy. Therefore, when the intervention-related behavior is not self-concordant there will be no connectionist pattern to activate. We propose, therefore, that the degree to which the intervention-related behavioral goal is currently self-concordant will moderate the relationship between goal activation and higher-order goal activation.

The activation of the higher-order goals is important as it results in greater motivation towards goal pursuit than the activation of just the behavioral goal (Kruglanski et al., 2002; Shah, Friedman, & Kruglanski, 2002; Shah & Kruglanski, 2003). In addition, engaging in a behavior that helps fulfil a personally important goal (that is, one connected to higher-order goals) generates positive affect (Fishbach, Shah, & Kruglanski, 2004) leading to an approach orientation (Seo, Barrett, & Bartunek, 2004; Seo, Bartunek, & Feldman-Barrett, 2010) and further motivating potential (Louro, Pieters, & Zeelenberg, 2007). Again, if the green behavior that the employee is required to engage in is not currently self-concordant then there is no higher-order goal to be fulfilled and thus no additional motivation.

Moreover, when the pro-environmental goal is activated and the behavior is self-concordant then engagement in the behavior will not require the long-term presence of the intervention. In the short-term behavior will be driven through the activation of the green behavioral goal by the intervention (see Proposition 1). Over time these behavior-goal links prompted by the intervention will become the "goat path" scripts in the overall activated goal hierarchy; these scripts will form stable links between the employee's pro-environmental behavior and the higher-order goals. This means that activation of any related higher-order goal (not just the intervention-related behavior goal) will result in engagement in the new behavior. As such, the new pro-environmental behavior will be much more likely to continue in the long-term, long after the intervention has been removed.

Proposition 2: The effect of the strength of the green behavioral goal in activating an employee's broader goal hierarchy will depend upon the degree to which it is self-concordant. A green behavioral goal that is self-concordant will result in activation of its related higher-order goals; however, a green behavioral goal that is not self-concordant will incur no activation of higher-order goals (as there are none related to that goal).

Spillover Effects: The Moderating role of Equifinality & Green Goal Progress

Related to this last argument is the development of spillover behavior (Berger & Kanetkar, 1995; Muster, 2011). Although scant attention has been paid to it in the psychological or organizational literatures, a spillover outcome occurs when the employee changes their behavior not only with regards to the specific, intervention-related behavior but other pro-environmental behaviors in different contexts (Muster, 2011; Thogersen & Olander, 2003; Whitmarsh & O'Neill,

2010). For example, a workplace intervention designed to increase recycling of paper might be effective not only in the workplace but might also carry-over into the home; alternatively, a recycling intervention might lead the employee to engage in other workplace pro-environmental behaviors such as environmental citizenship (Barling & Robertson, 2010). We propose that this effect occurs due to equifinality and the perceived proximity of completing the green goal.

Following the bottom-up activation of the higher-order goals (Shah & Kruglanski, 2003) a need for consistency in other behaviors is created (Laran & Janiszewski, 2008). This becomes particularly pertinent when the higher-order goals are "green" goals, identities or values. This consistency could be met most simply when there are a number of behaviors that are already linked to the green goal, that is when the goal has high levels of equifinality (Kruglanski, Pierro, & Sheveland, 2011; Kruglanski et al., 2002). Research in experimental social psychology suggests that greater levels of equifinality mean that an employee will be more committed to the higher-order goal, but they may be less committed to sticking with any one means of achieving that goal (Kruglanski et al., 2011; Zhang, Fishbach, & Kruglanski, 2007). Nonetheless, the multiple goals literature suggests that an employee will keep working towards a goal (presumably using whatever means available) until they perceive it to be completed (Louro et al., 2007; Vancouver et al., 2010)[3].

Through the integration of these two literatures we are able to propose that employees with higher equifinality for their green goal but with moderate goal attainment proximity (i.e., they do not perceive that the green goal will be accomplished soon) will be more likely to spillover the behavior from the intervention to another behavior or context. The employees are motivated to complete the unfinished goal and have a number of means available to them for doing so. For instance, an employee with a green goal might perceive that recycling at home, getting public transport to work and turning off the office coffee machine are all related to fulfilling their green goal. When this employee takes part in a workplace intervention designed to increase recycling, their higher-order green goal is activated which then increases the motivation to engage in these other related behaviors until the green goal is perceived to be completed. On the other hand, the spillover effect will not occur for an employee who already perceives that their goal is completed or will be completed with the introduction of the intervention-related goal.

Current research into spillover supports this general proposition: Whitmarsh & O'Neill (2010) found that pro-environmental self-identity was related to consistency across some pro-environmental behaviors, and Thogersen and Olander (2003) found that spillover by consumers was more likely to occur when a person had universalism values. Our model provides the underlying mechanisms for these findings to occur.

[3] Research has shown that this effect occurs regardless of whether goal progress is assessed against a specific goal (e.g., an ideal weight) or a general goal (e.g., health maintenance) (Fishbach & Dhar, 2005).

Proposition 3: When a pro-environmental behavioral goal is activated and it is self-concordant it is more likely to result in spillover effects when the behavior only partially completes the employee's higher order goal and there are other behaviors connected to the higher-order goal.

Rebound Effects: The Moderating Effect of Goal Conflict

However, as we noted earlier, yet another complication occurs when considering employee pro-environmental behavior in the context of goal hierarchies, and that is goal conflict. There are many competing goals that people may have in relation to pro-environmental behavioral goals, such as leisure goals (which might be accomplished through, for example, watching sports on a big-screen television), safety goals (which might be accomplished through, for example, driving a sports utility vehicle (SUV) to drop the children at school), and so forth. However we propose that goal conflict is particularly relevant for employee pro-environmental behavior as employees are likely to have many other goals that will not be associated with their intervention-related, pro-environmental goal. For example, for many employees spending time and/or resources in accomplishing pro-environmental goals (such as taking public transport to work, taking longer to walk up the office stairs rather than getting the quicker elevator, and so on) may be in conflict with performance efficiency goals such as getting to the meeting on time or spending every last available minute working on the computer. Moreover, for most employees, their performance goals will be much more commonly activated than their intervention-related goals.

When individuals perceive goal conflict they can either balance any competing goals – in other words, they will work on the focal goal and then move to the other – or they can continue working on the focal goal and try not to succumb to the temptation arising out of the goal conflict (Finkelstein & Fishbach, 2010; Fishbach, Friedman, & Kruglanski, 2003; Fishbach & Zhang, 2008). One of the key determinants of whether an individual will balance or focus is the degree to which the behavior signals commitment to a higher-order goal (Fishbach, Zhang, & Koo, 2009; Koo & Fishbach, 2008), in other words, self-concordance. Thus, employees for whom the pro-environmental behavior is not self-concordant are likely to balance their competing goals, while those for whom the pro-environmental behavior is self-concordant are likely to keep going with their key goal. We will first discuss the effect of competing goals when the employee does not perceive the behavior to be self-concordant (and thus, there is no higher-order goal activated) before discussing the effect of competing goals when the behavior is self-concordant.

When trying to balance goals, individuals focus on the degree to which the goal is complete; when it is completed then the individual switches to working on other, more tempting, goals (Fishbach & Dhar, 2005; Koo & Fishbach, 2008; Louro et al., 2007). For instance, Fishbach and Dhar (2005) found that those who were manipulated to perceive themselves to be closer to their ideal weight were more likely to choose a candy bar over an apple than those manipulated to feel further away from their ideal weight. This moral self-licencing has been found in fields as diverse as politics and political correctness, consumer choice and selfishness (Merritt, Effron, & Monin, 2010).

We extend this literature to propose that this balancing of goals is what causes the rebound effect (Greening, Greene, & Difiglio, 2000; Hertwich, 2005; Khazzoom, 1980). The rebound effect occurs when some pro-environmental activity results, directly or indirectly, in some environmental harm, which partly or wholly cancels out the initial benefit. For example, an employee who uses double-sided printing (to reduce paper) may increase the number of documents they print (which increases paper use). We suggest that if the employee perceives the goal to be relatively easy to accomplish and/or highly attractive then a strong goal will be activated and the employee will work to achieve that goal (see Proposition 1). In doing so the employee will perform the pro-environmental behavior in the short term. However, upon perceiving that the goal has been completed, the employee will use the balancing tactic to cope with goal conflict; thus they will switch to their competing goals and engage in the inconsistent behavior indicative of the rebound effect (Fishbach & Dhar, 2005; Schmidt & DeShon, 2007; Schmidt & Dolis, 2009; Vancouver et al., 2010).

Since Khazzoom's seminal paper (1980) a number of studies have focused on the theoretical logic and empirical evidence on the rebound effect especially in the context of developed countries (Schipper & Grubb, 1998) and global climate change (Kainuma, Matsuoka, Morita, & Hinimo, 1999). However, most of the research to date has focused on economic and technological issues (e.g., Berkout, Muskens, & Velthuijsen, 2000; Greening et al., 2000). To our knowledge little work prior to our model has considered the rebound effect at the level of the individual, however we believe our model provides a credible explanation for the existence of this effect.

Proposition 3: Interventions that result in a strong behavioral goal that is not self-concordant for an employee will likely result in the employee engaging in the pro-environmental behavior in the short-term but, under goal conflict, also engaging in rebound behaviors once the behavioral goal has been achieved.

Green Fads: The Moderating Effect of Competing Goal Progress

Instead of balancing goals, however, individuals can also focus just on one goal to the exclusion of the others (Kruglanski et al., 2002); this occurs when the behavior signals commitment to the higher-order goal (Fishbach et al., 2009), in other words, is self-concordant. As noted earlier, when the pro-environmental behavior goal is self-concordant, the activation of that goal will lead to the activation of the higher-order goals to which it is connected (see Proposition 2). Moreover, while this goal remains the focal goal then the employee's other goals become background goals. Research in experimental psychology suggests that when an individual is pursuing one goal, they actively, but subconsciously, inhibit their other goals (Shah et al., 2002) and "forget" them (McCullough, Aarts, Fujita, & Bargh, 2008). Thus, we propose that if the workplace intervention promotes a behavior that is attractive, efficacious and self-concordant and if that behavioral goal is the focal goal at a particular point in time, then employees will be motivated to engage in the intervention-related green behavior to achieve that goal and any other goal will be forgotten or out of cognitive awareness. All resources will be allocated to the focal intervention-related goal.

However, many studies have found that just the presence of goal conflict reduces resources and motivation towards the focal goal (e.g., Shah & Kruglanski, 2002). In many cases, goal conflict occurs simply by bringing the alternative goal into a person's cognitive awareness - it does not even need to be conscious awareness - as studies have found that subliminal priming also induces goal conflict (Shah & Kruglanski, 2002). In these instances, when alternative goals which are either unrelated (Shah & Kruglanski, 2002) or opposing (Laran & Janiszewski, 2008; Legal, Meyer, & Delouvee, 2007) are made accessible to the person (in other words, they are primed either consciously or subconsciously) then commitment to the focal goal reduces and resources are pulled away from it. Furthermore, such instances of goal conflict produce negative affect within people (Emmons & Kind, 1988) which would also then hinder goal pursuit (Aarts, Custers, & Holland, 2007).

For example, if an employee is focused on achieving an intervention-related green goal – for instance he or she might be getting ready to climb the stairs rather than taking the elevator – but on the way there they run into a colleague who reminds them of a report due next week, it is likely that an efficiency performance goal will create conflict with the green goal, and he or she will take the elevator instead because it is quicker. This is a very clear example, however more subtle primes such as background pictures (Shantz & Latham, 2009) are also likely to create conflict, including the notices that may be on the noticeboard, the route the employee has to walk, and so on.

Unfortunately, for most employees in most organizations, the situation where the pro-environmental goal is the focal goal (even for a short while) will occur rarely. Unless an employee is very passionate about the environment (i.e., they have strong and interconnected green values, identities and goals), it is much more likely in the workplace that the green goal is a background goal and that some form of performance or work relationship goal is the focal goal. In these cases, the goals will be shielded from the employee's attention while they concentrate on achieving their work goals (Shah et al., 2002; Vogt, De Houwer, & Crombez, 2011).

Yet, there are times when the employee will be aware of these intervention-related goals. People are more likely to allocate resources to accomplishing goals that are more likely to be achieved (Beck, Gregory, & Carr, 2009; Kernan & Lord, 1990; Schmidt & DeShon, 2007; Schmidt & Dolis, 2009; Vancouver et al., 2010); the flip-side of this is that background goals are more likely to come into awareness and be pursued when the focal goal is either very likely, or very unlikely, to be completed (Louro et al., 2007). Therefore, in our model, an employee is more likely to pursue intervention-related pro-environmental goals when their other important goals, such as their performance goals, are either very close or very far away from being achieved. For example, an employee may commute to work using public transport when they are feeling on top of their workload (i.e., their task performance goals are close to being achieved) but when they still have a lot of work to do then they are more likely to drive to work because the task performance goal remains focal.

Integrating these different streams of research leads to a proposal of "fads" of employee pro-environmental behavior

resulting in "on and off" behaviors. When the intervention-related goal is focal and there are no conflicting cues then there will be a wave of pro-environmental activity following the intervention (assuming the behavior is self-concordant); when a conflicting goal is cued then the behavior will disappear; but, when the conflicting goal is almost completed or is deemed highly unlikely to be completed then there will be another wave of pro-environmental activity. For example, an employee may ardently recycle batteries or turn off all the lights in the vicinity or vehemently encourage their co-workers to be more green- for a time; but this intensity of action will be interspersed with periods where the employee does not engage in any green behaviors. Such on-and-off behavior following an intervention has, to our knowledge, not been described in the pro-environmental literature, however this may be due to the difficulty in measuring such a dynamic process. We believe that the proposition rests on a strong body of different literatures and that, with appropriate methodology, would be seen in organizations where employees perceive such goal conflict.

Proposition 5: Interventions promoting behavior that is self-concordant for employees, but which conflicts with alternative goals, will result in "fads" of employee pro-environmental behavior change, dependent upon the completion of non-green goals.

Implications

The model presented here has implications for theory, methods and practice. In summary, we have taken a fresh approach to increasing employee pro-environmental behavior by considering some of the psychological moderators that affect the likelihood of workplace intervention success.

Implications for Theory and Research

The literature on pro-environmental behavior change has tended to rely on social cognitive theories of behavior change, such as TPB (Ajzen,1985; 1991) and VBN (Stern, 2000; Stern et al., 1999). We have built on these theories and incorporated literatures from experimental social psychology as well as organizational behavior to develop greater levels of actionable knowledge.

Importantly, our model allows us to not only understand the extant literature on pro-environmental interventions, but to also bring to light new outcomes and new interactions amongst different goal theories that previously have not been identified. First, the model highlights the importance of the existing values and identities of the employees. While this has often been recognised, the implications of our model are quite different. Most notably, by considering self-concordance rather than the values themselves we propose that the employee does not necessarily have to have altruistic or biospheric values; we suggest that what is important is that the employee sees the behavior as expressing as many of their values, or other long-term goals, as possible. This means that an employee with egoistic values may be just as likely to engage in pro-environmental behavior as one with altruistic or biospheric values. However, what is important is that the employee perceives the link between the pro-environmental behavior and values. It is likely that the stronger relationships between pro-environmental behavior and traditional "green" values found in previous research (e.g., Karp, 1996; Schwartz, 1992; Stern & Dietz, 1994; Stern, Dietz, & Black,

1986; Stern, Dietz, & Guagnano, 1995, 1998) occur because it is more difficult to see how pro-environmental behaviors express egoistic values except in circumstances when the costs associated with the alternative behavior are high (Lindenberg & Steg 2007; Moore & Loewenstein, 2004). We therefore extend previous thinking by proposing that those people who perceive the behavior as self-concordant will engage in it regardless of what values it expresses – as long as they perceive that it does express those values.

Second, the assessments of intervention outcomes in previous research were generally focused directly on the behavior at hand. Those who recognised the narrowness of these measures have highlighted alternative criteria for evaluating the intervention, such as its replicability and generalisability (De Young, 2000). We believe that all of these are important. But we also believe that it is important to understand the wider effects that an intervention might have – the so-called "unforeseen consequences". Our approach is one that takes into account the other goals and behaviors that an employee is engaged in, leading us to the extended list of behavioral outcomes outlines in Table 1. Our model helps to pinpoint the psychological conditions under which an intervention might result in these consequences, thereby helping them to be planned for and less "unforeseen".

In particular, the identification of pro-environmental "fads" contributes both to theory and practice. In hindsight, the expectation that employees would either engage in the pro-environmental behavior (for a long time or a short time), or not, is perhaps a little simplistic. Given the number of conflicting demands that employees face, and given the likelihood that green goals will be a low priority and not often activated in the workplace, it is unlikely that an employee will be able to consistently engage in pro-environmental behaviors following an intervention. Instead, we propose that it is much more likely that goal conflict will create episodes of high activity and episodes of low activity.

This then has obvious implications for research as simply taking aggregated levels of green behavior (or other measures such as energy consumption) will not capture the dynamic nature of the interaction. Instead, diary studies or experience sampling methods may be a better method for assessing the effectiveness of an intervention. Diaries have been used to measure variables such as methods of travel (Fujii & Taniguchi, 2006), however to our knowledge these data have always been aggregated and the dynamic ebb-and-flow of engagement in pro-environmental behavior has not been analysed. We believe that this is an area that would prove highly fruitful, if effortful, in understanding the outcomes of workplace pro-environmental interventions.

Further theoretical and research implications emerge from the posited interactions themselves. To date, most research in the pro-environmental literature has looked at improving the interventions and, with only a few exceptions, neglected the role of potential moderators. We do not claim that these are the only potential moderators of the relationship between the intervention and the subsequent outcomes, indeed there are many social and situational factors (see Young & Middlemiss, 2011) that may act as either distal moderators via these psychological factors or as additional moderators. For example, it is likely that many other individual difference factors will

interact with the characteristics of the intervention to affect perceptions of goal efficacy and attractiveness. Nonetheless, we do believe that our model represents some of the significant psychological conditions which are more likely to lead to a successful intervention. Given the complexity incorporated within the model it is not surprising that many workplace interventions designed to increase employee pro-environmental behaviors do not have long-term success: such success comes predominantly for employees for whom the behavior is self-concordant and who do not experience goal conflict or whose alternative goals are either very close to completion or highly unlikely to be completed. We will discuss the practical implications of these conclusions later.

Finally, in developing our model we are able to contribute not only to the pro-environmental literature, but also to the goals literature. In the past, research examining self-concordance, goal hierarchy, goal systems, and multiple goals have all taken place in silos with little to no overlap between them. We have shown how these constructs overlap (for example, the overlap between goal hierarchy and goal systems literatures), interact (for example, the interaction between self-concordance and activated goal hierarchy), and interrelate (for example, using insights from both goal systems and multiple goals literatures). This integration across the various bodies of literature should prove useful not only to scholars of pro-environmental behavior but also to scholars interested in goals more widely.

Implications for Practice

From a practical perspective, the model highlights the importance of both the intervention and the workplace. While our aim was not to identify a silver-bullet intervention, our model nonetheless does have implications for making interventions more effective. As noted earlier, interventions that target both efficacy and attractiveness should result in greater goal activation and thus, more behavior change. This can be seen in the types of interventions that are now most popular such as those that address both knowledge and commitment (see Abrahamse et al., 2005). More interestingly, interventions that not only activate a key pro-environmental goal but also create equifinality through mentioning a number of related behaviors should result in greater spillover. For example, an intervention that focuses on recycling printer cartridges might also present cues for recycling paper and plastic. Finally, interventions could directly address the issue of goal conflict through the inclusion or provision of cues to re-focus the employee back on the pro-environmental goal. For example, interventions that send occasional reminders to participants may help to make the green goal focal again.

With regard to the workplace, our model suggests that there are things that can be done to improve the overall success of interventions. Changing the workplace environment to include more positive environmentally-related cues should help in activating employees' green goals. For example, an intervention designed to increase stair-walking rather than elevator-use should provide cues in employees' offices and cubicles as well as near the stairs and elevator. When these positive environmental cues are available, we posit that the intervention will lead to greater employee pro-environmental behavior change.

In addition, our model highlighted the importance of self-concordance when attempting to gain more than short-term behavior change. Whilst self-concordance is an individual-level difference variable, transformational leadership has been shown to be related to increased self-concordance for work tasks (Bono & Judge, 2003). Thus, another implication arising out of our model is that to improve the likelihood of long-term success of pro-environmental interventions an organisation could engage its leaders rather than just focusing on employees; these leaders would then increase the employees' perceptions of the self-concordance of the pro-environmental behavior.

Conclusion

We started this manuscript by looking at an employee who had been engaged in a workplace intervention designed to increase pro-environmental behaviors. For Patrick, not driving into work was self-concordant as commuting on public transport expressed his values and beliefs; however when he experienced goal conflict the resources allocated to the pro-environmental behavior were reduced and he chose to pursue the alternative efficiency goal by driving in his car. It is likely, though, that he will catch the bus when he feels that his workload is under control.

We have taken a new approach to examining the effectiveness of interventions. Our aim was to identify key psychological moderators of the intervention-outcome relationship to better understand when, why and how interventions are more likely to be successful. Following Kilduff (2006), our model addressed a real-life phenomenon rather than simply a gap in scholarship. Through the actionable knowledge presented within the model we hope that future research and practice is able to make a range of workplace interventions result in increased employee pro-environmental behaviors that continue over the long-term and that spill over into diverse behaviors and contexts.

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Table 1. Behavioral outcomes following a workplace intervention.

Prop.	Goal Efficacy & Attractiveness	Behav. Goal Activation Outcome	Ongoing Self-concordance	Higher Order Goal Activation Outcome	Goal Conflict	Proximity of Goal Attainment	Behavioral Outcome
1a	Low	= Weak					= No effect
1b	High	= Strong	+ Not self-concordant	= No activation	+ No conflict		= Short-term
2	High	= Strong	+ Self-concordant	= Activated	+ No conflict		= Long-term
3	High	= Strong	+ Self-concordant	= Activated	+ No conflict	+ Higher-order green goal partially completed & high equifinality	= Spillover
4	High	= Strong	+ Not self-concordant	= No activation	+ Conflict		= Rebound
5	High	= Strong	+ Self-concordant	= Activated	+ Conflict	+ Changes in non-green goal completion	= Green fads

Figure 1. Model of Psychological Conditions Underlying Pro-Environmental Behavior Change