

Meaningful Mess:
Making Tidying Less Boring Through Meaning and Motivation

Shannon Chen
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Advisor: Dr. Timothy D. Wilson

Second Reader: Dr. Shigehiro Oishi

Abstract

Why is tidying so hard? On average, people waste about 153 days over the course of a lifetime looking for lost items when a few minutes spent tidying each day could easily prevent this issue. We propose that one reason people do not like tidying is because it is boring. According to the MAC model of boredom, giving people an underlying goal should make tidying more meaningful and less boring. One hundred eighty-seven undergraduate students completed a tidying study at home, alone and free of distractions. They read that tidying would either help them achieve their “ought” selves or enhance their personal fitness, or received no such information. They were then asked to photograph their personal space, and spend the next 10 minutes tidying their room. Afterwards, they took a second post-tidying photo, and completed measures of boredom and motivation. We contacted them one week later for a follow-up. Overall, there was no effect of the motivation manipulation on meaning or boredom. However, 41% of participants admitted to “cheating” by engaging in some other activity (e.g., texting, using cell phone) during the tidying period. When those participants are removed, the effect of the condition becomes significant, with the “ought self” condition (but not the fitness condition) marginally increasing meaning and significantly decreasing boredom while tidying. In addition, across conditions, participants who found the tidying period more meaningful also reported that it was less boring, providing further correlational evidence that motivational and attentional deficits are associated with boredom while tidying.

Keywords: tidying, boredom, meaningful, motivation, MAC model, ought self, boredom

Meaningful Mess:

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Imagine that you are running late for work. You rush out to the car with your bag in one hand and coffee in the other. You get to the car and reach for your keys in your pocket - but they are not in your pocket. You rummage for them in your bag - but they are not there either. Frustrated, you stand by your locked car, wondering where you could have put them. If you identify with this experience, you are in the majority. Most people spend at least 10 minutes every day looking for lost items, from papers, to keys, to phones (“Lost something already today,” 2012). Over a lifetime, this adds up to over 3,680 hours spent looking for lost items. And yet a few minutes spent tidying could prevent the issue entirely, and save us from standing by our locked car, keyless, ever again. Yet if tidying is so simple, why is it so hard for people to just do it? Perhaps, simply because tidying is boring. Unless you are one of the rare few, tidying may feel meaningless, time-consuming, and unimportant. By making tidying a little more meaningful and a little less boring, we may help people tidy more effectively and more often, with corresponding psychological and practical payoffs.

Surprisingly, for something we do every day, there is remarkably little research on the psychology of tidying and how people feel about it. Tidying is the act of restoring a category of items (physical or otherwise) to order and discarding items that are no longer functional. In today’s affluent and consumerist American society, people have increasingly bought into the idea that “more is better” and accumulated progressively more “stuff” (Belk, Seo, & Li, 2007), in turn making the need for tidying even more urgent. The average American household is now home to over 300,000 individual objects (MacVean, 2014). One survey conducted by a Boston firm found that “the average American burns...roughly 12 weeks a year looking for things they

know they own but can't find" ("Clean Freaks," 2004). And yet, according to professional organizers, people only use 20% of what they have; the other 80% of their things get little use and simply sit in closets and shelves taking up space (Kuhn, 2016). Alarming, not only are people paying for more things, but they are also paying to keep and store the things, the majority of which they may not even use. In the search for more space, one in ten American households now stores their excess belongings in rental storage units, which can run upwards of \$40 to \$225 a month (Mooallem, 2009).

Tidying allows the individual to steward the items, space, and time that they have, preventing the problems outlined above. It occupies an important niche in daily life, with adult women spending 8.5 - 23 hours per week engaged in housework, and men spending 5.4 - 10 hours (Swanson, 2014; Swanbrow, 2008; Chesters 2013). However, while tidying is a crucial part of everyday life, there are very few quantitative studies exploring the psychology of tidying and organizing. The purpose of the present study was to fill this gap by looking into how we can motivate tidying and make it more enjoyable by giving it meaning.

Hoarding is at the extreme end of the tidying spectrum, defined as "the acquisition of, and failure to discard, possessions which appear to be useless or of limited value" (Frost & Gross, 1993, p. 367). Hoarding is characterized by the presence of high levels of clutter in living spaces impeding the use of that space and the items in it (Steketee & Frost, 2006), and it often requires the intervention of either family or government before it is recognized as a problem and resolved (Steketee, Schmalisch, Dierberger, Denobel, & Frost, 2012). Visibly, hoarders' homes are extremely unorganized, which can be mentally and physically overwhelming to their owners, as in the case of the Collyer brothers, who died in 1947 as a result of their hoarding behavior (Cherrier & Ponnor, 2010).

For most people, of course, their issues with tidying and clutter are not as extreme. Most people learn as children to clean and put their rooms in order, which includes putting away their own toys, loading the laundry, and making their beds (Warton & Goodnow, 1991; Fasulo, Loyd, & Padiglione, 2007). However, as time passes and material possessions increase, without sufficient knowledge and motivation for or skills in organization, clutter tends to build upon itself and can push people into disorganization and frustration (Belk et al., 2007). This is unfortunate, as there are a number of benefits to tidying that may extend beyond its obvious practical utility.

For instance, research suggests tidying may play a significant role in cultivating psychological well-being. Living in a tidy and well-organized house is associated with a better quality of life, lower levels of stress, and higher efficiency (Dion, Sabri, & Guillard, 2014). Married women in the workforce who perceive their homes as restorative and uncluttered report less depressed moods over the day (Saxbe & Repetti, 2010), and people with tidy homes are evaluated more favorably and as more respectable and welcoming (Gosling, Ko, Mannarelli, & Morris, 2002; Harris & Sachau, 2005). Conscientiousness, which is associated with a plethora of positive outcomes including stronger goal setting, self efficacy, and longevity (Roberts, Kuncel, Shiner, Caspi, & Goldberg, 2007), is a strong predictor of maintaining a tidy living and working space (MacCann, Duckworth, & Roberts, 2009). Highly conscientious people may even *need* a tidy workspace to complete their work accurately (Mateo, Roberto Hernández, Jaca, & Blazsek, 2013). Tidying may also foster feelings of perceived control over their environment and lives (Dion et al., 2014), and give even young children a sense of ownership and responsibility (Warton & Goodnow, 1991).

Additionally, tidying may keep people physically fit; according to the Centers for Disease

Control (1996) tidying is considered moderate physical activity that can be used to fulfill the recommendation of 30 minutes of moderate physical activity a day. Understanding the value of tidying is important not simply because it makes a physical space clearer and restores a sense of control. Preliminary research on interventions to increase tidying have shown promise in promoting overall well-being. For instance, cognitive behavioral therapy for hoarding has been largely successful in altering attitudes toward discarding, clutter, and acquiring even beyond the treatment period (Tolin, Frost, Steketee, & Muroff, 2015). And, indeed, clients of professional organizers reported feeling better after professionals assisted them in decluttering a portion of their environment (Belk et al., 2007).

But if tidying is so beneficial, why is it so hard for people to tidy effectively? One reason for people's lack of tidying may simply be that they find it boring. In one experience sampling study, people performing housework and other chores were moderately more likely to be bored, especially relative to when engaging in more enjoyable activities such as sports, hobbies, or socializing (Chin, Markey, Bhargava, Kassam, & Loewenstein, 2017). According to the Motivational and Attentional Components (MAC) model of boredom, people experience boredom either because they do not have the ability (i.e., attentional component) or the motivation (i.e., motivational component) to complete an activity (Westgate & Wilson, 2017). According to the MAC model, tidying may be boring because people are either unable or do not want to engage in it, perhaps because they feel that tidying is relatively meaningless or pointless.

Essentially, the MAC model suggests that tidying will be boring when people are unable to successfully maintain their attention on tidying and/or tidying is not congruent with currently activated valued goals. Are people able to focus their attention on tidying? Because tidying is a relatively undemanding cognitive task, it may depend on people's cognitive resources. When

resources are high, tidying may result in understimulation and attentional failure (i.e., cognitive resources are greater than the demands of the task). In contrast, when people's resources are low, tidying may result in low-level engagement and attentional success (i.e., cognitive resources and the task's demand are both low). On the other hand, in terms of motivation, tidying should typically be boring if it is incongruent with currently activated valued goals. Tidying may feel "meaningless" and therefore boring either because (a) tidying is not related to current goals, (b) those current goals are not sufficiently valued, or (c) tidying itself is not seen as an activity capable of contributing to valued goals.

Thus, there are two main routes by which tidying could be made less boring: either by optimizing attentional fit (by making tidying more demanding or by decreasing people's resources), or by increasing people's motivation to tidy. Cognitive resources are hard to change, and making tidying more difficult may backfire and *decrease* motivation, if people do not want to tidy in the first place. Thus, increasing people's motivation to tidy may be a more accessible route to making tidying less boring. To make tidying more meaningful and less boring, people's currently activated valued goals need to be brought into alignment with the activity of tidying. We hypothesized that one way to do this is to increase the meaning of the tidying task by activating salient goals, and illustrating how tidying serves those goals. While this may not fully resolve boredom in cases of understimulation, boosting meaningfulness should decrease boredom and increase enjoyment for people overall, particularly when cognitive resources are low.

Our primary aim, therefore, was to decrease boredom by increasing the perceived meaningfulness of tidying. According to the MAC model, meaning reflects a task's congruency with currently accessible goals that are highly valued and task-salient (Westgate & Wilson,

2017). In other words, activities feel meaningless when they do not serve a current goal, or that underlying goal has no value. Thus, for this study, we sought to align the tidying task in the study with the person's current goal by giving them a new goal which tidying could help satisfy. There is little reason to believe that tidying itself is generally felt to be meaningful. Meaning in life (more broadly) has been defined as "the extent to which a person experiences his or her life having purpose, significance, and coherence" (Heintzelman & King, 2016, p. 477). Thus, goals are most likely to impact meaning when they align with a personal sense of purpose, significance, and coherence. That is to say, in order for tidying to be meaningful, there needs to be a reason to do it (i.e., goal), it needs to be purposeful in their life (i.e., salient), and it has to be important to them (i.e., highly-valued). However, because tidying often does not fit into these purpose, significance, or coherence categories, it is often not meaningful. In these instances, people are likely to feel bored and switch to some other, non-tidying activity instead, leaving their home in cluttered disrepair. We attempted to make tidying more meaningful (and less boring) by giving tidying purpose and significance by activating specific goals likely to be highly valued by college students. More specifically, we told participants that tidying would help them achieve one of three specific goals: achieving their "ideal" selves, achieving their "ought" selves, or becoming more physically fit.

Tory Higgins' work on self-concept discrepancy suggests that people have both an "ideal self" and an "ought self" (Higgins, Klein, & Strauman, 1985). The ideal self is "a person's representation of attributes that someone (self or other) would like the person, ideally, to possess (i.e., someone's hopes, goals, or wishes for the person)" (Higgins, Bond, Klein, & Strauman, 1986, p.6). In contrast, the ought self is the "representation of the attributes that someone (self or other) believes the person should or ought to possess (i.e., someone's sense of the person's duty,

obligations, or responsibilities)” (Higgins et. al., 1986, p. 6). People who fail to achieve the vision of who they ideally want to be - or should be - experience a discrepancy between their ideal or ought selves, and their actual selves. This discrepancy arises when a person’s actual attributes or accomplishments do not match his or her goals, personal needs, or perceived duties and rules (Higgins et. al., 1985). When people’s actual selves are highly discrepant with their ideal selves, they may experience low self-esteem, dejection, and depression, and feel dissatisfied and ineffective. Likewise, discrepancy between the actual and ought self may lead to agitation and anxiety, as well as feelings of irritability and worthlessness. We believed that tying tidying to achieving one’s “ideal self” would make people feel that the task was more meaningful because by finishing the task they are one step closer to becoming their ideal person. In contrast, we believed that telling them that tidying would contribute to achieving one’s “ought self” might make people feel compelled to complete the task and find it only marginally more meaningful, because it is a result of obligation to others rather than to one’s self. Therefore, we expected that tidying would feel much more meaningful in the ideal self manipulation, and slightly more meaningful in the ought self manipulation, with corresponding payoffs in boredom reduction.

Likewise, physical fitness is an important domain to college undergraduates, many of whom care about good health and staying physically fit (Ebben & Brudzynski, 2008). For these students, working out totals an average of 3.7 hours a week. Their most commonly cited reasons for exercising include for general health, maintenance of fitness, stress reduction, and pleasure. We presented tidying as a type of moderate aerobic exercise that builds fitness and burns calories, and is an easy way to fit a workout into a busy schedule. In doing so, we hypothesized that people would find the task meaningful because they care about working out, reducing stress,

and enjoying fitness. However, we predicted that it would be less meaningful than the ideal condition because the effects of the ideal self are immediately apparent in so much as the room becomes tidier. For fitness, repetition and time are required for its effects to show making it less meaningful than the ideal self manipulation. At the same time, maintaining fitness is more a choice than an obligation and therefore would be slightly more meaningful than the ought self manipulation.

In the current study we investigated whether we could make tidying more meaningful and less boring by manipulating the extent to which tidying was congruent with people's current goals. In particular, we attempted to manipulate goal congruence by activating one of three goals salient to college students (ideal self, ought self, and physical fitness) and prompting the participant to think about how tidying could contribute to that goal. All participants were then asked to spend ten minutes tidying their personal living space in their own homes. In a control condition, participants proceeded directly to the tidying activity without any goal prompting. A week later, we followed up to see whether their personal space remained tidy, and whether the meaning manipulation had downstream benefits. We predicted that participants in the ideal self, ought self, and fitness goal conditions would find tidying more meaningful and less boring both immediately afterwards and one week later, compared to the control condition. We also predicted that they would be more effective at tidying and that their rooms would remain tidier for longer. Finally, we explored the possible benefits of making tidying less boring on stress, anxiety, and academic outcomes.

Method

Overview

Participants completed the study in their own home during two 30-minute online sessions. In part one of the study, participants first received a rationale (or not) designed to make tidying more meaningful. They were then asked to spend 10 minutes tidying their personal space, and send pre- and post-tidying photos. Afterwards, they reported how boring and meaningful they found the experience, in addition to completing a number of individual difference measures. A week later, participants were contacted again to complete a follow up, including a photo of the space they had tidied the week before, as well as measures of how tidy they had kept their room, how meaningful and boring they found tidying, and a number of additional dependent measures.

Participants

Participants were 225 undergraduate psychology students recruited from a departmental participant pool. Eighteen participants dropped out before completing the tidying period, leaving a sample of 207 participants (151 women, 53 men, 3 “other” or declined to answer) between the ages of 17 and 23 ($M = 18.97$, $SD = 1.07$). Sixty-three percent identified as White/Caucasian, 4.9% African American, 4.3% Hispanic, 22.1% Asian and 5.3% declined to answer. Seven were excluded for starting the study twice and being assigned to different conditions, and we later dropped the 24 participants in the ideal self condition, leaving a final sample of 187 participants. One hundred eighty-three participants (97.86%) completed the follow-up one week later. Participants were recruited from the Department of Psychology participant pool and completed the study individually in two 30-minute sessions at home. They were compensated with course credit.

Procedure

When participants signed up for the study they were asked to complete the initial session at home when they were alone. All instructions and dependent measures were delivered over the

web via a Qualtrics program. They were contacted in the morning and asked to respond by midnight that same day. Participants who did not complete the survey by midnight received a reminder email the day after. When participants began the initial session they were asked to verify that they were alone in their home and that they had turned off all distractions (e.g., mobile phones, television, and music devices). Participants who indicated that they were not at home, alone, or who had not removed all distractions were asked to close the study and return at a later time.

Participants first indicated their mood by rating how much they were currently experiencing seven emotions (i.e., happy, bored, irritable, stressed out, anxious, interested, cheerful) on a series of 5-point Likert scales that ranged from 1 = *very slightly or not at all* to 5 = *extremely*. They also reported how many hours they had slept the previous night. Participants were then randomly assigned to either the control condition or one of three experimental conditions.

Experimental conditions. In the ideal self condition, participants first read about the concept of an ideal self. Participants were told, “We all have an ideal self – the kind of person we ideally want to be. Our ideal self includes our aspirations, our hopes, and our goals for ourselves, as well as our deepest personal desires.” They were then told about how tidying contributes to achieving their ideal selves, and that “most people’s ideal self includes being organized and well-prepared” and that “tidying helps people become more organized and clear-headed.” They were then asked to briefly write about how keeping their personal space tidy will help them become their ideal self. In the ought self condition, participants first read about the idea of an ought self and were told “We all have an ought self – the kind of person we believe we should or ought to be. Our ought self includes other people’s expectations for us and the responsibilities we ought to

meet, as well our duties and obligations.” Then they were told about how tidying contributes to achieving their ought selves, and that “most people’s ought self includes being organized and well-prepared” and that “tidying helps people become more organized and clear-headed.” Participants were then asked to briefly write about how keeping their personal space tidy will help them become their ought self.

In the fitness condition, participants first read about becoming healthy and fit. They were then told how tidying “offers an easy way to fit a workout into your busy schedule,” that “it counts towards the 30 minutes of moderate exercise five times a week recommended by the US Surgeon General,” and that tidying “burns calories through aerobic exercise.” Participants were then asked to briefly write about how tidying improves their physical fitness. Finally, participants in the control condition did not receive any additional information or writing prompts, and proceeded directly to the next part of the study.

All participants were then instructed to take a pre-tidying photo with their smartphone. They were given 60 seconds to take a picture of their personal space, which was defined as “your part of the room (if you live in a shared dorm) or your bedroom (if you live in a house or suite).” They were instructed not to include any people or identifying details in the photo, and not to “touch or move anything” before taking the photo, unless they needed to remove potentially identifying details. They then sent the photo to the researchers’ email account, an account specifically created to receive photos for the current study.

After completing the pre-tidying photo, participants were again reminded to turn off all electronics and potential distractions, and told that for the next 10 minutes, they should spend their time tidying their personal space. They read that this could include “organizing your things, putting them away, dusting, cleaning surfaces, and straightening up.” They were told to

tidy for the entire 10-minute period, and that if they should finish early, they should go back and “tidy, clean, or organize your space more thoroughly.” Participants then tidied their room for 10 minutes while the words “TIDYING PERIOD” appeared on the screen, with a reminder that “No electronics (cell phone, TV, computer), people, or other distractions should be present.” When the 10 minutes were over, a beep notified participants to return to the computer, where they were instructed to take a second post-tidying photo of the same area and send it to the researchers.

Participants in the three experimental conditions then wrote for at least 15 seconds about the tidying period they had just completed. Participants in the ideal self condition were told to reflect on how tidying their personal space makes them feel more like the person they ideally would like to be. Participants in the ought self condition were told to reflect on how tidying makes them feel more like the person they ought to be. Participants in the fitness condition were told to report how many calories they thought they burned during the tidying period. Participants in the control condition did not complete a written reflection and proceeded directly to the next part of the study.

Dependent measures. All participants then rated how boring, interesting, enjoyable, and entertaining the thinking period was on 9-point Likert scales that ranged from 1 = *not at all [boring, interesting, enjoyable, entertaining]*, 5 = *somewhat [boring, interesting, enjoyable, entertaining]*, and 9 = *extremely [boring, interesting, enjoyable, entertaining]*. To test whether the manipulation was effective in making tidying feel more meaningful, we asked participants how personally meaningful the tidying period was and how much they felt they were accomplishing a worthwhile goal. They were also asked how frustrated they felt during the tidying period, all on 9-point Likert scales that ranged from 1 = *not at all*, 5 = *somewhat*, and 9 =

very much. Participants then indicated their mood by rating how much they were currently experiencing the same seven emotions they had rated at the beginning of the session.

Participants were then given a hypothetical choice about what they would like to do for the second half of the session. Participants read that they could spend 10 minutes playing MeowMatch (a fun but mindless computer game), 10 minutes playing MINE (an interesting but challenging computer game), or return to the Tidying Period and continue to tidy for another 10 minutes.

Participants then completed 28 items from the Multidimensional State Boredom Scale (MSBS; Fahlman et al., 2009), which includes subscales on Inattention (e.g., “It was difficult to focus my attention,” 4 items, $\alpha = .85$), Disengagement (e.g., “I wished I was doing something more exciting,” 9 items, $\alpha = .89$), Dysphoric Affect (e.g., “I felt down,” 4 items, $\alpha = .85$) and Time Perception (e.g., “Time was dragging on,” 5 items, $\alpha = .96$), all on 7-point Likert scales ranging from 1 = *Strongly Disagree*, 4 = *Neutral*, and 7 = *Strongly Agree*. We modified items on the MSBS to refer to the participant’s past experience on the tidying period rather than their current experience. After the MSBS, participants completed the following series of questionnaires administered in a random order. Participants completed the Higgins Self-Discrepancy Test (Higgins, Klein, & Strauman, 1985), which asked them to list 10 traits they actually possessed, would like ideally to possess, and believed they should possess. Additionally, participants completed the Meaning in Life Questionnaire (MLQ; Steger, Frazier, Oishi & Kaler, 2006) and Satisfaction with Life Scale (SWLS; Diener, Emmons, Larson & Griffin, 1985). We also asked them several additional questions about tidying attitudes, including how much they like their living space, how important tidying is to them, their intentions to keep their living area tidy, and how much tidying helps them with anxiety and stress respectively. Additionally, we

asked them how meaningful tidying is and how hard it is to concentrate on tidying. They also reported how much tidying helps them do better in school, helps them stay fit, and helps them be who they want to be or who others expect them to be. Next participants were asked how personally meaningful tidying is for them. All responses were given on five-point scales from 1 = *not at all* to 5 = *extremely*. Participants then completed open response questions about their thoughts on the study.

Manipulation checks. Participants were first asked to rate the extent to which they had engaged in “forbidden” activities during the tidying period on a 6-point Likert scale ranging from 1 = *0 minutes (no time)* to 6 = *9-10 minutes* with each interval accounting for two minutes. Participants rated 14 activities: Five involved communicating with other people: “talked to someone on my cellphone or land line,” “texted someone,” “used my cell phone to do something else (e.g., play a game),” “chatted with someone using an Instant Messenger program or Facebook,” and “talked with someone.” Nine involved self-distractions: “opened other windows on my computer, such as Facebook,” “checked my e-mail,” “played a videogame,” “read a book or magazine for fun,” “worked on a puzzle (e.g., a crossword or sudoku puzzle),” “watched television or a movie,” “listened to music or the radio,” “did schoolwork,” and “wrote things or doodled on paper.”

Participants were also asked whether they were alone when completing the study or if someone else was there part of or the whole time. They then indicated how many minutes they were told to spend in the Tidying Period from 1 = *5 minutes*, 2 = *10 minutes*, 3 = *15 minutes*, 4 = *20 minutes*, to 5 = *I wasn't told anything about this*. Last, participants recalled what they were told about the benefits of tidying at the beginning of the study: “tidying can help me become who I want to be as part of my ‘ideal’ self,” “tidying can help me become who I should be as part of

my 'ought' self," "tidying can help me stay physically fit," or "I wasn't told anything about the benefits of tidying."

Participants then completed a demographics questionnaire, and were told they would be contacted one week later with a follow-up survey. They then completed open-response questions about their general impressions of the study so far and any suspicions they might have had about its purpose.

Follow-up Session. Participants were contacted one week later in the morning and asked to respond by midnight that same day. As in the initial session, participants who did not complete the survey by midnight received a reminder email the next day. Participants were again asked to verify that they were alone in their homes without distractions before completing the study, and indicated their mood and number of hours they had slept the night previously. To assess whether participants had continued to keep their personal space tidy, participants then took a photo of the same area they tidied in the initial session and sent it to the researchers. Participants were then asked how often they continued to tidy after the initial session had been completed, 1 = *not at all*, 2 = *hardly at all*, 3 = *occasionally*, 4 = *often*, or 5 = *extremely often*, and how tidy it was relative to its typical state, from 1 = *much less tidy* to 7 = *much tidier*, with 4 = *same as usual*. We again asked participants several questions about tidying attitudes, including how important tidying is to them, their intentions to keep their living area tidy, and how boring tidying is to them. Additionally, we asked them if they did a good job of keeping their space tidy, and how meaningful tidying was to them personally, as well as how much tidying helps them stay fit and be who they want to be or who others expect them to be. They also reported how much they like their living space, how much tidying helps them with anxiety and stress respectively, and how hard it is to concentrate on tidying. Finally, participants were asked how much tidying helps

them to do better in school. All responses were given on five-point scales from 1 = *not at all* to 5 = *extremely*. Participants then completed the Higgins Self-Discrepancy Test (Higgins et al., 1985), which assesses self-concept discrepancy and distinguishes between different aspects of depression and anxiety.

Participants next completed a battery of measures in random order, including the Satisfaction with Life Scale (SWLS; Diener et al., 1985), Perceived Physical Fitness questionnaire (Abadie, 1988), the stress and anxiety subscales from the Depression, Anxiety, and Stress Scale (DASS; Henry & Crawford, 2005), and General Health Subscale (Ware & Sherbourne, 1992). Participants also indicated how much time they had spent studying since the first session from 1 = *much less studying*, to 4 = *same studying as usual* to 7 = *much more studying*, along with six items (e.g., “I am performing below my capability in my courses at UVA”, and “I am achieving to the maximum of my capability in my courses at UVA”) from the Perceived Academic Underachievement Scale (Snyder & Adelson, 2017). In addition, participants were asked to rate the likelihood they would respond to three difficult academic situations by not procrastinating, procrastinating by doing something productive and academic, procrastinating by doing something productive but not academic, or procrastinating by doing unproductive, respectively, on a sliding scale from 0 to 100%.

Participants were then fully debriefed as to the true purpose of the study. In addition, participants completed a photo release form, indicating whether they consented to public use and sharing of their photographs for academic and presentation purposes, beyond those required for data analysis in the present study. 63.1% of participants gave permission for the photos to be shared for additional research and educational purposes, while the remaining 36.9% chose to allow photos only to be used for the current research.

Results

Preliminary early analyses suggested that the ideal self condition was eliciting backlash from participants; therefore, we dropped the ideal self condition, and continued running the ought self, fitness, and control conditions until cell sizes reached 50 participants per cell, for a final sample size of 187 participants. The following section reports analyses for these participants only.

Most participants completed the study in their dorms (63.6%), followed by apartments (31.6%), houses (3.7%), Greek housing (0.5%), or elsewhere (0.5%). Most participants reported having a roommate (73.8%) or housemate (23.0%), although 3.2% lived alone. The majority (86.2%) of participants successfully completed the 10-minute tidying period, with 82% submitting both pre- and post-tidying photographs as confirmation of their activity. Participants reported, on average, that the tidying period was somewhat boring ($M = 5.47$, $SD = 1.62$) and only somewhat meaningful ($M = 4.97$, $SD = 1.89$).

Manipulation Check. We first checked to see whether participants accurately recalled the instructions they were given at the beginning of the study. 93.6% correctly reported the condition to which they had been assigned, and 98.1% correctly recalled how long they were told that the tidying period would last.

We then looked to see whether the ought self and fitness manipulations increased participants' beliefs that tidying helps people achieve their ought self, or improves physical fitness, respectively. Contrary to predictions, participants in the ought self condition were not more likely to subsequently report that tidying helps people become the person they "should" be, $F(2, 184) = 0.48$, $p = .62$ nor did they report lower discrepancies between their actual and ought

selves, $F(2, 180) = 0.56, p = .56$. Likewise, participants in the fitness condition were not more likely to endorse the belief that tidying could improve physical fitness, $F(2, 184) = 0.13, p = .88$.

To test whether the meaning manipulation increased motivation, we created a motivation index by combining how personally meaningful the activity was and how much participants felt they were accomplishing a worthwhile goal ($\alpha = .78$). Overall, the manipulation of meaning was not successful. Meaning did not differ significantly between the control ($M = 4.03, SD = 2.13$), fitness ($M = 4.35, SD = 2.22$), and ought self ($M = 4.51, SD = 2.13$) conditions, $F(2, 184) = 0.80, p = .45$, partial eta squared = .009.

Boredom Index. To see if manipulating meaning had an effect on boredom, we computed a boredom index by averaging participants' ratings of how boring, enjoyable (reversed scored), entertaining (reverse scored), and interesting (reversed score) the tidying period was ($\alpha = .85$). Overall, there was no significant effect of condition on boredom, $F(2, 184) = 1.44, p = .24$, partial eta squared = .015 (see Table 1 & Figure 1). Participants in the ought self ($M = 4.16, SD = 2.18$) and fitness conditions ($M = 4.59, SD = 2.02$) found the tidying period just as boring as participants in the control condition ($M = 4.14, SD = 1.96$). Because our experimental manipulation had no effect, we next collapsed across conditions to determine whether self-reported meaning and attention during the tidying task were correlationally tied to boredom, as hypothesized (see Figure 2). We found that, across conditions, participants who found the tidying period more meaningful, $b = -.87, t(182) = -9.05, p < .001$, Cohen's $d = 1.34$, and experienced less inattention, $b = -.39, t(182) = 4.10, p < .001$, Cohen's $d = .61$, reported that the tidying period was less boring.¹ In addition, as anticipated, the effect of motivation on boredom (Cohen's $d = 1.34$) was much larger than the effect of attention (Cohen's $d = .61$) in the context

¹ Analyses reported here controlling for condition; results remain the same with and without first controlling for condition

of tidying. There was no interaction between meaning and attention, $b = .06$, $t(182) = .67$, $p = .50$, Cohen's $d = .10$, providing further correlational evidence that motivational and attentional deficits are independently associated with boredom while tidying.

We also looked to see if our manipulation impacted participants' meaning in life, subjective well-being, mental and physical health, and academics, both at the initial session and the one-week follow-up. There was no main effect of condition on any of these variables, nor did they moderate the effect of condition (see Table 2), all $ps > .05$. However, we found that 41% of participants admitted to "cheating" by engaging in some other activity (e.g., texting, using cell phone) during the tidying period. In addition, 13.9% reported that, contrary to instructions, another person was present in the room for some or all of the time that they were tidying. Rates of cheating did not differ significantly by condition, although there was a trend towards higher cheating in the ought self condition (51.5%) versus the fitness (42.9%) and control (39.7%) conditions, $\chi^2(2, N = 206) = 2.04$, $p = .36$. When those participants who cheated were removed, the effect of the condition on boredom became highly significant. Among non-cheaters, participants in the ought self condition ($M = 4.45$, $SD = 1.19$) were significantly less bored than in the fitness ($M = 5.38$, $SD = 1.57$) or control ($M = 5.44$, $SD = 1.48$) conditions, $F(2, 92) = 4.23$, $p = .017$. This boredom state was not characterized by different levels of disengagement, $F(1, 207) = 2.00$, $p = .141$, inattention, $F(1, 207) = 0.59$, $p = .56$, altered time perceptions, $F(1, 207) = 1.15$, $p = .32$, or differences in agitated or dysphoric affect, $F(1, 207) = .04$, $p = .96$ and $F(1, 207) = .09$, $p = .92$, respectively.

Is it possible that cheating occurred because participants did not believe our meaning manipulations? To see, we formally examined cheating as a moderator of condition. While we found a main effect of cheating, $F(1, 207) = 5.94$, $p = .016$, and no significant effect of condition,

$F(2, 184) = .93, p = .40$, these results were qualified by a marginal interaction between condition and cheating, $F(2, 181) = 2.98, p = .053$. Cheating was not related to boredom in the control condition, but ran in opposite directions in the ought self condition (see Figure 1 and Table 1). In other words, it appears that there was a polarizing effect of the ought self manipulation, such that people in the ought self condition who followed instructions were less bored, while participants who cheated were even more bored. Participants in this condition were told that tidying would help them become the person they “should” be. It is possible that the manipulation backfired for participants who were not convinced that tidying would help them achieve their ought self, but effective for participants who were convinced. In other words, participants who believed tidying would contribute to becoming the person they felt they “should” be reported feeling less boredom and more meaning in the task, while those who did not reported more boredom and less meaning.

To address this possibility, we examined differences between cheaters and non-cheaters, and found that cheaters were significantly more likely to report higher levels of boredom overall, $t(185) = -2.80, p = .006$, than non-cheaters. Cheaters likewise reported higher disengagement, $t(185) = -3.07, p = .002$, inattention, $t(185) = -2.87, p = .005$, and slowed perception of time, $t(185) = -2.65, p = .009$. We were curious to see if other factors such as stress played into higher levels of cheating, however we did not find a significant difference between the cheaters and non-cheaters in stress, $t(160) = 0.93, p = .35$, presence of meaning in life, $t(185) = 0.37, p = .71$, or search for meaning in life, $t(185) = -1.39, p = .17$. We also tested to see if experience with meditation predicted decreased cheating; it did not, $t(185) = -0.65, p = .51$. However, when we looked to see if there were differences in tidiness between cheaters and non-cheaters we found

that cheaters had marginally cleaner rooms to start ($M = 4.88$, $SD = 1.69$) than did non-cheaters ($M = 4.48$, $SD = 1.83$), $t(179) = -1.53$, $p = .129$, Cohen's $d = .23$.

Behavioral preferences. Regardless of its effects on boredom, did our manipulation increase people's behavioral preferences for tidying? After the tidying period was over, we asked participants whether they would prefer to spend another 10 minutes continuing to tidy their rooms, versus spending 10 minutes playing an enjoyable or interesting video game. We found no significant differences across condition, $\chi^2(2, N = 187) = 3.33$, $p = .19$, although there was a trend such that more participants in the "ought self" condition (31%) reported that they would like to continue tidying than in the fitness (24%) or control (17%) conditions. Likewise, we asked participants at the end of the session how much they intended to continue tidying their personal space in the future. Although all participants reported being somewhat likely to continue to tidy (see Table 1), we found no differences between conditions in future tidying intentions, $F(2, 184) = 0.31$, $p = .73$.

Follow-up. We followed up with participants one week later to assess how much they had actually continued to tidy their space. We found participants did not significantly differ between conditions in their self-reports of how important tidying was to them, $F(2, 162) = 0.39$, $p = .68$, or how good a job they did in keeping their personal space tidy, $F(2, 162) = 0.03$, $p = .98$. Overall participants reported spending hardly any time continuing to tidy their space within the given week ($M_s = 3.03$, $SD_s = .97$), $F(2, 163) = 0.53$, $p = .59$. Likewise, participants reported, regardless of condition, that they had not changed their tidying habits and were tidying approximately the same amount as they had before ($M_s = 4.10$, $SD_s = 1.02$), $F(2, 163) = 0.55$, $p = .58$, suggesting that the manipulation did not increase the amount of time spent tidying. Likewise, participants did not differ in how meaningful they thought tidying was one week later,

$F(2, 161) = 1.05, p = .35$, nor how boring it was, $F(2, 162) = .29, p = .75$. See Table 3 for descriptive statistics.

Photo Coding. Regardless of its effects on boredom or self-reported tidying behavior, did our manipulation make people tidy better or more effectively? In addition to assessing self-report measures, we were able to code objective measures of tidying efficacy through the photos that participants submitted pre- and post- tidying during the initial session, as well as at the follow-up one week later. We wanted to know whether the conditions affected how well participants tidied their rooms and to what extent their rooms became tidier as a result. A week later, we looked at their follow up photos to see if there was lasting change to participants' tidying habits.

Two coders independently rated photos on six dimensions for overall neatness, organization, clutter, cleanliness, cheerfulness and relative tidiness. The photos from each participant were sorted and labeled as pre-tidying photos, post-tidying photos, and follow up tidying photos. The two raters first considered the pre-tidying photos and rated overall neatness, organization, clutter, cleanliness, and cheerfulness. Post-tidying photos were then compared side by side with the pre-tidying photo and rated on relative tidiness and overall neatness. Follow-up photos were also evaluated in comparison to the pre-tidying photo and rated on relative tidiness, overall neatness, organization, clutter, cleanliness, and cheerfulness. Each dimension was scored on a scale of 1 to 7, 1 = very [messy, poorly organized, cluttered, dirty, gloomy], 2 = [messy, poorly organized, cluttered, dirty, gloomy], 3 = slightly [messy, poorly organized, cluttered, dirty, gloomy], 4 = neutral, 5 = slightly [neat, well organized, uncluttered, clean, cheerful], 6 = [neat, well organized, uncluttered, clean, cheerful], 7 = very [neat, well organized, uncluttered, clean, cheerful]. Relative tidying ratings were ranked on a scale from 1 to 7, 1 = much less tidy,

2 = less tidy, 3 = slightly less tidy, 4 = same as pre-tidying, 5 = slightly more tidy, 6 = more tidy, 7 = much more tidy. Raters were blind to participants' condition. Overall agreement was moderately high on most dimensions, ICCs .56-.86 ($M = 0.75$), thus we took the average of the two ratings. Averaged ratings are reported in Table 4.

Overall, across conditions, we found that participants did succeed in tidying their rooms, although these gains did not last (see Figure 3). There were no significant differences by condition in how neat rooms were before the tidying period began, with most spaces slightly neat to begin with (pre-tidying $M = 4.70$, $SD = 1.77$). Between the pre-tidying and post-tidying photos, spaces overall increased in neatness (post-tidying $M = 6.54$, $SD = 0.88$) and were rated as relatively tidier than before the period ($M = 5.90$, $SD = 0.84$). We also were interested in whether participants would be able to maintain their newly tidied rooms once the intervention was over. However a week later, rooms were no longer as neat (follow-up $M = 4.91$, $SD = 1.64$) and looked nearly identical to their pre-tidying state ($M = 4.07$, $SD = 1.02$).

Did our manipulation affect how effective participants were at tidying? Overall, tidying ratings did not differ across condition. Ratings for overall neatness, $p = .45$, and relative tidiness, $p = .11$, did not differ significantly immediately after the tidying period, although rooms in the fitness condition ($M = 6.08$, $SD = 0.68$) were rated as increasing in tidiness marginally more so than in the control condition ($M = 5.75$, $SD = 0.86$). There were no significant differences by condition at the one-week follow-up in how tidy people had kept their spaces, $p = .99$. There were also no differences by condition in how neat, $p = .63$, organized, $p = .40$, cluttered, $p = .47$, clean, $p = .59$, or cheerful, $p = .19$, the personal spaces were at the one-week follow-up.

Discussion

While tidying is a necessary part of everyday life, people often encounter barriers when they try to do it. We proposed that tidying is boring because it lacks meaning, but that if we could make tidying more meaningful it would also make it less boring and more attractive. We attempted to increase meaning by making tidying more congruent with valued goals. Participants read that tidying would help them achieve their ought self, meant to appeal to people's sense of obligation either to themselves or to other people, or their fitness goals, meant to appeal to people's desire to be healthy and fit. Participants then spent 10 minutes tidying their personal space. Although we found no effect of our manipulation on either meaningfulness or downstream boredom, we did find correlational evidence that people who were more motivated (and who experienced less attentional difficulty) also found the tidying less boring. This suggests that while our manipulation was not successful in convincing people that tidying was a meaningful activity, meaning and attention may still be related to boredom while tidying.

In addition, we observed a surprising effect of participant non-compliance: a notable 41% of participants admitted to cheating by engaging in other activities (e.g., texting, checking emails, doing homework) during the tidying period, which they were specifically told not to do. Although this made no difference in the control condition, it did have an impact on boredom ratings in the ought self condition. Participants in the ought self condition who cheated found tidying more boring and less meaningful, whereas those who did not cheat found it less boring and more meaningful. There are two possible explanations for this discrepancy. First, it is likely that people who did not believe that tidying was crucial for achieving their ought self or fitness goals did not feel that tidying was meaningful and therefore experienced more boredom. This in turn may have led them to do something else (e.g., texting) instead of focusing on tidying their room. Specifically, for the ought self condition, it is also feasible that the distraction itself (e.g.,

doing homework) was more helpful to them in becoming the person they “ought” to be than was the tidying they were instructed to focus on.

In contrast, a second possibility is that people who cheated were already prone to distraction and therefore not focused on the tidying, thereby detracting from a more meaningful experience. Bem (1972)’s self-perception theory addresses how it is that people know what they are feeling. He argues that people identify their emotions by looking at how they imagine others see their behaviors. According to self-perception theory, it is conceivable that participants observed that they were distracted from the tidying task and therefore attributed that to the tidying being less meaningful. Another take on the second possibility is that people were aware of feeling distracted but were not cognizant of the distraction itself resulting in an overall sense of boredom (Damrad-Frye & Laird, 1989). We believe that the latter explanation is more likely, because tidying is a low demand activity. Therefore, if a disposition to distraction during low demand activities is indicative of excess resources, then it makes sense that participants could intentionally, or unintentionally, seek something else to utilize their available resources; if this is true then their attention would be split decreasing meaningfulness for tidying. Additionally supporting this explanation is that cheaters had marginally tidier rooms to begin with, perhaps leaving them with less to do during the tidying period and thus more apt to cheat by engaging in distractions. Future research should explore whether it is the distractions themselves that are preventing people from finding tidying meaningful by purposefully interjecting distractions during the tidying period.

It is unsurprising that we found no effects on boredom, given that our manipulation failed to convince people that tidying would be meaningful. Why was our manipulation not more effective? It may have been because the passages describing our conditions were not strong

enough to induce the feelings we wanted participants to experience. Because participants completed the study at home, it is also possible that those home environments mitigated the intensity of the reactions we hoped to provoke (e.g., agitation and anxiety for the ought condition, and a sense of accessibility to fitness for the fitness condition). Moreover, because the study was done not in the lab, we could not ensure limited distractions to discourage participants from disregarding the instructions, so there is the possibility that even more people cheated than admitted to doing so.

For the ought condition in particular, another component that may have aided in its ineffectiveness is that the discrepancy between the actual self and the ought self in our sample was rather low, even in the control condition. In other words, rather than feeling irritable or anxious about not being who they felt like they should to be, people were already fairly aligned with who they thought they ought to be. This means we were unsuccessful in producing feelings of discrepancy between their actual self and their ought self which would have prompted them to change their tidying habits. The low scores may have been because our sample was drawn from a high-achieving college student population where students typically do what they feel is required of them to do in order to succeed. Simply put, college students believe that they should do well in school so they put in the effort and time in order to achieve this goal; that is to say, they are already good at achieving their ought selves.

In addition, participants may have found the fitness manipulation unconvincing because the goal was to be fit - not just to have a tidy room – a process that takes time to achieve. In contrast, for the ought self manipulation, the goal was to tidy in order to show that they were living the organized and orderly life that they, or someone else, thought the participant should be living. Having a tidier room at the end of the study was a visible measure of moving toward that

ought self goal. However, as the fitness condition focuses on the body's physical health, there was not an equivalent marker of progress that could be seen when they finished tidying. Furthermore, the calories burned during tidying were likely not as impressive as the numbers described in the manipulation since participants had only 10 minutes to tidy rather than an hour. Future manipulations might look for a way to show forward movement toward achieving the fitness goal.

It is important to note that the ought self manipulation did appear to work as intended for the portion of participants who did not cheat. For these participants, it is possible that the manipulation was successful and they believed tidying was the first step to becoming who they should be. However, those who cheated may have lost sight of how tidying could be helpful and instead turned to something else that would bring joy to them in the moment, even if they bought into the manipulation initially. It is possible that people who cheated found the distracting activity to be more enjoyable and meaningful, which brought them closer to who they thought they ought to be, effectively decreasing the discrepancy.

Another reason we may have struggled to find an effect of our manipulation was that participants did not seem to find the tidying particularly boring to begin with. Overall, participants rated tidying right above the midpoint, slightly higher than "somewhat boring," and said that it was slightly less than "somewhat meaningful." Particularly in the control condition, participants found that tidying was rated only a little over somewhat boring and a little under somewhat meaningful. This was unexpected, given preliminary pilot data results on how boring people expect tidying to be, and suggests that tidying – at least in the context used in this study – may not be as boring as we expected. In addition, coding of the photos taken before the tidying period suggest that a good portion of participants (approx. 36.8%) were already incorporating

tidying into their daily life styles. Given the relatively tidy initial appearance of many spaces and the control condition's ratings of meaning and boredom, perhaps some people already enjoy the act of tidying or enjoy having the space tidy. This does not then explain why people think that they will find tidying boring, or report that it is moderately boring when asked randomly during the day (Chin, et. al., 2017).

An alternative possibility is that the artificial situation (or novelty) of being asked to tidy their personal space during what was purportedly a psychology study fulfilling a mandatory participant pool requirement made the tidying experience more interesting and outweighed the tedium that people might otherwise normally experience. In other words, when contrasted with a typical psychology study (which participants might have expected to be doing), perhaps being asked to tidy was a welcome and meaningful surprise. This may have been especially true given the short length of the study; participants were asked to tidy for only 10 minutes, rather than for extended periods of time, and most participants' personal spaces were small and relatively contained environments – indeed for 73.8% of participants, they were tidying their half of a dorm room. We favor the second explanation because it accounts for the preliminary data on how boring tidying is anticipated to be. Moreover, in asking participants for their impressions, many reported that the study was interesting and unexpected, further backing the latter account.

In closing, we expected that people would find tidying boring because it lacks meaning. Although we failed to manipulate meaning and test this hypothesis experimentally, correlational results suggest that meaning and attention may be critical components in boredom that arises while tidying. According to the MAC model, boredom is an indicator of low motivation. Because the act of tidying is not challenging on its own and decreasing resources is difficult, an increase in motivation, attempted here in the form of instilling meaningfulness, may be key to

warding off boredom. Participants themselves reported that tidying, even in this study, was on average slightly less than somewhat meaningful; however, the more meaningful people found it, the less bored they were, suggesting that boosting meaning may be a promising way to decrease boredom while tidying.

While further research is needed to see if meaningfulness can increase motivation for tidying, the act of tidying may still be beneficial. Across conditions, we found that the better people were at the tidying period (as coded by the objective increase in tidiness in their photos), the lower their reported stress and anxiety one week later, $r_s = -0.20, -0.24, p_s = .018, .004$. We saw the same pattern at the one-week follow-up, where participants who were able to keep their space tidier for a week also reported lower levels of stress, $r = -0.22, p = .009$ (although there were no differences in anxiety, $r = -0.12, p = .15$). Additionally, the neater their personal space was immediately after completing the tidying period, the higher people's self-reported satisfaction with life was, $r = 0.17, p = .03$. Although tidying may have led to these positive outcomes, it is also possible that lower levels of stress and anxiety lead to tidier rooms, and that greater satisfaction with life begets increased neatness. In either case, it seems that tidying may have benefits that have yet to be discovered.

We also found that while people may be unenthusiastic about maintaining tidying habits in the long run, even a short 10-minute directed tidying period effectively increased neatness in the short term. This pattern of demonstrated ability in the short term and failure to persist in the long term is a trend that extends beyond tidying into areas such as medical non-compliance, an issue with greater consequences than losing time looking for things. When people, especially those dealing with chronic conditions, fail to take their medication, they further endanger their health and potentially their lives. By, understanding how we can encourage tidying habits, we

may be able to gain insight into how people can be motivated to maintain helpful habits for prolonged periods of time, including properly taking medications.

In this study, we attempted to increase motivation for tidying and make it less boring by inspiring meaningfulness. As the MAC model illustrates, while people are often unwilling or unable to tidy, it is possible to make the experience more enjoyable. Although we were unable to manipulate meaning, we found that self-reported meaning and attention did predict boredom when tidying. This indicates that people who have high levels of attention and who derive meaning from tidying experience less boredom and may be more likely to readily engage in it. As it stands, tidying and organizing are fairly unexplored territory in terms of quantitative research; there is still much to be discovered about how and why tidying is effective. However, if we can find the motivation and focus, we can enjoy tidying more and lose less time attempting to locate our car keys.

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Table 1
Boredom and Manipulation Checks (Initial Session)

Measure	Full Sample			Non-Cheaters Only			Cheaters Only		
	Control (<i>n</i> = 64)	Fitness (<i>n</i> = 62)	Ought Self (<i>n</i> = 61)	Control (<i>n</i> = 37)	Fitness (<i>n</i> = 32)	Ought Self (<i>n</i> = 26)	Control (<i>n</i> = 27)	Fitness (<i>n</i> = 30)	Ought Self (<i>n</i> = 35)
Boredom Index	5.46 ^a (1.48)	5.67 ^a (1.61)	5.27 ^a (1.76)	5.44 ^a (1.48)	5.38 ^a (1.57)	4.45 ^b (1.19)	5.49 ^a (1.51)	5.98 ^a (1.62)	5.88 ^a (1.88)
Meaning Index	4.03 ^a (2.13)	4.35 ^a (2.22)	4.51 ^a (2.13)	3.97 ^a (2.13)	4.44 ^a (2.26)	5.00 ^a (1.93)	4.72 ^a (2.00)	4.65 ^a (1.91)	4.70 ^a (2.00)
Frustration	2.30 ^a (1.46)	2.53 ^a (1.68)	2.77 ^a (1.92)	2.49 ^a (1.68)	2.59 ^a (1.74)	2.92 ^a (1.94)	2.04 ^a (1.06)	2.47 ^a (1.63)	2.66 ^a (1.92)
Disengagement (MSBS)	3.21 ^a (1.17)	3.24 ^a (1.17)	3.27 ^a (1.28)	3.21 ^a (1.16)	3.01 ^a (1.17)	2.62 ^a (1.10)	3.21 ^a (1.20)	3.49 ^a (1.14)	3.75 ^a (1.20)
Inattention (MSBS)	3.23 ^a (1.40)	3.09 ^a (1.24)	3.32 ^a (1.29)	3.13 ^a (1.43)	2.81 ^a (1.18)	2.86 ^a (1.26)	3.37 ^a (1.37)	3.38 ^a (1.25)	3.66 ^a (1.22)
Time Perception (MSBS)	3.62 ^a (1.62)	3.90 ^a (1.55)	4.02 ^a (1.79)	3.57 ^a (1.65)	3.80 ^a (1.63)	3.15 ^a (1.66)	3.69 ^a (1.61)	4.00 ^{a,b} (1.49)	4.67 ^b (1.61)
Agitated Affect (MSBS)	2.47 ^a (1.16)	2.49 ^a (1.22)	2.70 ^a (1.36)	2.48 ^a (1.27)	2.39 ^a (1.28)	2.41 ^a (1.43)	2.47 ^a (1.03)	2.60 ^a (1.15)	2.92 ^a 1.29

Higgins Ought Self	-2.34 ^a (2.27)	-2.09 ^a (2.46)	-2.22 ^a (2.81)	-2.41 ^a (2.16)	-2.00 ^a (2.59)	-2.52 ^a (2.71)	-2.26 ^a (2.43)	-2.18 ^a (2.36)	-2.00 ^a (2.91)
Tidying helps ideal self	3.09 ^a (1.38)	3.13 ^a (1.19)	3.43 ^a (1.16)	3.11 ^a (1.41)	3.34 ^a (1.15)	3.73 ^a (0.92)	3.06 ^a (1.36)	2.90 ^a (1.21)	3.20 ^a (1.28)
Tidying helps ought self	3.05 ^a (1.29)	3.10 ^a (1.07)	3.25 ^a (1.15)	3.05 ^a (1.33)	3.25 ^a (1.05)	3.42 ^a (0.86)	3.04 ^a (1.26)	2.93 ^a (1.08)	3.11 ^a (1.32)
Tidying helps fitness	2.98 ^a (1.35)	3.03 ^a (1.12)	2.92 ^a (1.33)	3.03 ^a (1.34)	3.28 ^a (1.17)	3.15 ^a (1.22)	2.93 ^a (1.39)	2.77 ^a (1.01)	2.74 ^a (1.40)
Tidying helps mental health	3.64 ^a (1.12)	3.60 ^a (1.12)	3.87 ^a (1.10)	3.61 ^a (1.08)	3.64 ^a (1.12)	4.12 ^a (0.88)	3.69 ^a (1.19)	3.55 ^a (1.12)	3.69 ^a (1.21)
Tidying helps school	3.20 ^a (1.23)	3.23 ^a (1.12)	3.54 ^a (1.09)	3.22 ^A (1.13)	3.25 ^A (1.19)	3.85 ^B (0.61)	3.19 ^a (1.39)	3.20 ^a (1.06)	3.31 ^a (1.30)
Tidying inattention	2.19 ^a (1.04)	2.15 ^a (1.05)	2.08 ^a (1.01)	2.32 ^a (1.16)	2.03 ^a (1.03)	2.04 ^a (1.00)	2.00 ^a (0.83)	2.27 ^a (1.08)	2.11 ^a (1.02)
Tidying meaningfulness	3.81 ^a (0.96)	3.76 ^a (1.11)	3.80 ^a (0.96)	3.78 ^a (0.92)	3.81 ^a (1.03)	3.96 ^a (0.96)	3.85 ^a (1.03)	3.70 ^a (1.21)	3.69 ^a (0.96)
Future tidying intentions	4.03 ^a (0.89)	4.10 ^a (0.80)	4.15 ^a (0.77)	3.84 ^a (0.99)	4.03 ^a (0.90)	4.08 ^a (0.69)	4.30 ^a (0.67)	4.17 ^a (0.70)	4.20 ^a (0.83)

Note. Standard deviations are in parentheses. Means that have different superscripts within a study differ at $p < .05$

Table 2**Individual Difference Measures by Condition (Assessed at Initial and Follow-up Sessions)**

Measure	Full Sample			Non-Cheaters Only			Cheaters Only		
	Control (<i>n</i> = 64)	Fitness (<i>n</i> = 62)	Ought Self (<i>n</i> = 61)	Control (<i>n</i> = 37)	Fitness (<i>n</i> = 32)	Ought Self (<i>n</i> = 26)	Control (<i>n</i> = 27)	Fitness (<i>n</i> = 30)	Ought Self (<i>n</i> = 35)
Meaning in Life (Presence)	5.12 ^a (1.38)	5.18 ^a (1.30)	5.00 ^a (1.26)	5.11 ^a (1.43)	5.26 ^a (1.30)	5.02 ^a (1.29)	5.23 ^a (1.34)	5.10 ^a (1.32)	4.98 ^a (1.25)
Meaning in Life (Search)	5.08 ^a (1.13)	4.78 ^a (1.17)	4.84 ^a (1.05)	5.09 ^a (1.08)	4.54 ^a (1.32)	4.67 ^a (0.90)	5.07 ^a (1.22)	5.04 ^a (0.94)	4.97 ^a (1.14)
Satisfaction with Life (SWL)	4.84 ^a (1.38)	4.76 ^a (1.35)	4.83 ^a (1.30)	4.77 ^a (1.30)	5.01 ^a (1.25)	4.70 ^a (1.44)	4.93 ^a (1.52)	4.50 ^a (1.42)	4.92 ^a (1.20)
Physical fitness	2.91 ^a (0.30)	2.98 ^a (0.33)	2.99 ^a (0.32)	2.93 ^a (0.27)	3.05 ^a (0.36)	2.97 ^a (0.32)	2.88 ^a (0.35)	2.90 ^a (0.26)	3.01 ^a (0.33)
Health	2.53 ^a (0.72)	2.43 ^a (0.69)	2.27 ^a (0.70)	2.45 ^A (0.59)	2.34 ^{A, B} (0.51)	2.14 ^B (0.54)	2.64 ^a (0.87)	2.53 ^a (0.84)	2.39 ^a (0.80)
Anxiety (DASS)	0.49 ^a (0.50)	0.57 ^a (0.59)	0.55 ^a (0.51)	0.43 ^a (0.54)	0.63 ^a (0.71)	0.51 ^a (0.55)	0.57 ^a (0.44)	0.48 ^a (0.42)	0.57 ^a (0.49)
Stress (DASS)	0.84 ^a (0.64)	0.79 ^a (0.68)	0.90 ^a (0.65)	0.81 ^a (0.59)	0.94 ^a (0.80)	0.90 ^a (0.71)	0.89 ^a (0.70)	0.62 ^a (0.56)	0.89 ^a (0.61)
Subjective Underachievement	3.04 ^a (0.60)	3.12 ^a (0.55)	2.92 ^a (0.70)	3.02 ^a (0.57)	3.13 ^a (0.61)	2.96 ^a (0.69)	3.07 ^a (0.65)	3.10 ^a (0.49)	2.88 ^a (0.72)
Productive	46.78 ^a	49.65 ^a	45.14 ^a	49.41 ^a	44.80 ^a	45.38 ^a	43.19 ^A	55.60 ^B	44.94 ^{A, B}
Procrastination	(19.25)	(21.35)	(20.50)	(18.16)	(20.63)	(23.53)	(20.51)	(21.17)	(17.91)

Unproductive	35.57 ^a	38.71 ^a	37.08 ^a	38.08 ^a	30.51 ^a	35.49 ^a	32.24 ^a	49.36 ^a	38.39 ^a
Procrastination	(23.80)	(30.38)	(28.37)	(24.87)	(26.30)	(25.24)	(22.45)	(32.63)	(31.33)
GPA	3.27 ^a	3.30 ^a	3.24 ^a	3.29 ^a	3.50 ^a	3.43 ^a	3.23 ^a	3.11 ^a	3.09 ^a
	(1.01)	(0.87)	(1.04)	(1.02)	(0.74)	(0.77)	(1.02)	(0.96)	(1.20)
Meditation	2.30 ^a	2.24 ^a	1.97 ^a	2.27 ^a	2.06 ^a	1.96 ^a	2.33 ^a	2.43 ^a	1.97 ^a
	(1.51)	(1.10)	(0.77)	(1.41)	(1.11)	(0.77)	(1.66)	(1.07)	(0.79)

Note. Standard deviations are in parentheses. Means that have different superscripts within a study differ at $p < .05$

Table 3

Effects of Condition on Boredom and Manipulation Checks (Follow-up)

Measure	Full Sample			Non-Cheaters Only			Cheaters Only		
	Control (<i>n</i> = 57)	Fitness (<i>n</i> = 52)	Ought Self (<i>n</i> = 57)	Control (<i>n</i> = 32)	Fitness (<i>n</i> = 28)	Ought Self (<i>n</i> = 26)	Control (<i>n</i> = 25)	Fitness (<i>n</i> = 24)	Ought Self (<i>n</i> = 31)
Continued tidying	2.96 ^a (0.96)	3.15 ^a (1.00)	3.04 ^a (0.94)	3.06 ^a (0.91)	3.36 ^a (0.91)	3.12 ^a (0.91)	2.84 ^a (1.03)	2.92 ^a (1.06)	2.97 ^a (0.98)
Relative tidiness	3.98 ^a (1.01)	4.17 ^a (1.10)	4.14 ^a (0.97)	4.09 ^a (1.09)	4.29 ^a (1.21)	4.04 ^a (0.96)	3.84 ^a (0.90)	4.04 ^a (0.96)	4.23 ^a (0.95)
Higgins Ideal Self	-2.24 ^a (2.54)	-1.63 ^a (2.78)	-1.94 ^a (2.90)	-1.90 ^a (2.24)	-1.12 ^a (2.55)	-1.50 ^a (2.59)	-2.64 ^a (2.84)	-2.16 ^a (2.95)	-2.24 ^a (3.11)
Higgins Ought Self	-3.19 ^a (2.65)	-3.00 ^a (2.51)	-2.56 ^a (2.67)	-2.83 ^a (2.61)	-2.73 ^a (2.48)	-1.70 ^a (2.25)	-3.60 ^a (2.69)	-3.28 ^a (2.57)	-3.18 ^a (2.80)
Tidying is boring	2.39 ^a (1.07)	2.54 ^a (1.02)	2.48 ^a (1.11)	2.31 ^a (1.00)	2.64 ^a (0.95)	2.23 ^a (0.77)	2.48 ^a (1.16)	2.42 ^a (1.10)	2.70 ^a (1.32)
Tidying helps ideal self	3.05 ^a (1.09)	3.19 ^a (1.27)	3.34 ^a (1.12)	2.97 ^a (1.12)	3.29 ^a (1.28)	3.54 ^a (0.95)	3.16 ^a (1.07)	3.08 ^a (1.38)	3.17 ^a (1.23)
Tidying helps ought self	2.82 ^a (1.14)	2.88 ^a (1.20)	3.14 ^a (1.05)	2.88 ^a (1.04)	3.14 ^a (1.21)	3.15 ^a (1.01)	2.76 ^a (1.27)	2.58 ^a (1.24)	3.13 ^a (1.11)
Tidying helps fitness	2.96 ^a (1.20)	2.79 ^a (1.16)	3.14 ^a (1.15)	3.19 ^a (1.18)	2.75 ^a (1.21)	3.27 ^a (0.96)	2.68 ^a (1.18)	2.83 ^a (1.13)	3.03 ^a (1.30)
Tidying helps	3.27 ^a	3.16 ^a	3.42 ^a	3.34 ^a	3.27 ^a	3.62 ^a	3.18 ^a	3.04 ^a	3.25 ^a

mental health	(1.19)	(1.23)	(1.15)	(1.05)	(1.17)	(0.91)	(1.36)	(1.30)	(1.31)
Tidying helps school	2.98 ^a	2.88 ^a	3.27 ^a	3.00 ^a	3.07 ^a	3.42 ^a	2.96 ^a	2.67 ^a	3.13 ^a
	(1.19)	(1.17)	(1.00)	(1.19)	(1.22)	(0.81)	(1.21)	(1.09)	(1.14)
Tidying efficacy	3.46 ^a	3.42 ^a	3.41 ^a	3.28 ^a	3.43 ^a	3.33 ^a	3.96 ^a	3.71 ^a	3.55 ^a
	(1.12)	(1.11)	(1.01)	(1.28)	(1.29)	(1.22)	(0.75)	(0.76)	(1.13)
Tidying	3.21 ^a	3.10 ^a	3.42 ^a	3.31 ^a	3.18 ^a	3.60 ^a	3.08 ^a	3.00 ^a	3.27 ^a
meaningfulness	(1.21)	(1.21)	(1.08)	(1.18)	(1.19)	(0.96)	(1.26)	(1.25)	(1.17)
Future tidying	4.02 ^a	3.90 ^a	3.84 ^a	3.97 ^a	3.86 ^a	3.73 ^a	4.08 ^a	3.96 ^a	3.93 ^a
intentions	(0.81)	(1.09)	(0.91)	(0.90)	(1.21)	(0.87)	(0.70)	(0.96)	(0.94)
Relative time spent	4.57 ^A	4.60 ^A	4.00 ^B	4.61 ^a	4.67 ^a	4.24 ^a	4.52 ^a	4.52 ^a	3.78 ^a
studying	(1.41)	(1.54)	(1.30)	(1.26)	(1.90)	(1.13)	(1.58)	(0.99)	(1.42)

Note. Standard deviations are in parentheses. Means that have different superscripts within a study differ at $p < .05$

Table 4
Coded ratings of personal space photos pre- and post-tidying

Measure	Full Sample			Non-Cheaters Only			Cheaters Only		
	Control (<i>n</i> = 60)	Fitness (<i>n</i> = 59)	Ought Self (<i>n</i> = 58)	Control (<i>n</i> = 35)	Fitness (<i>n</i> = 30)	Ought Self (<i>n</i> = 26)	Control (<i>n</i> = 25)	Fitness (<i>n</i> = 29)	Ought Self (<i>n</i> = 32)
Pre-tidying									
Neatness	4.65 ^a (1.86)	4.74 ^a (1.70)	4.71 ^a (1.78)	4.40 ^a (1.98)	4.65 ^a (1.70)	4.46 ^a (1.83)	5.00 ^a (1.64)	4.83 ^a (1.72)	4.91 ^a (1.74)
Organization	5.10 ^a (1.79)	4.91 ^a (1.58)	5.27 ^a (1.71)	4.84 ^a (1.93)	4.92 ^a (1.54)	5.11 ^a (1.90)	5.46 ^a (1.53)	4.90 ^a (1.65)	5.40 ^a (1.56)
Clutter	4.18 ^a (1.84)	4.14 ^a (1.64)	4.12 ^a (1.64)	4.09 ^a (1.90)	3.93 ^a (1.61)	3.77 ^a (1.65)	4.30 ^a (1.79)	4.36 ^a (1.67)	4.41 ^a (1.61)
Cleanliness	4.97 ^a (1.44)	5.08 ^a (1.34)	4.85 ^a (1.47)	4.97 ^a (1.50)	5.10 ^a (1.39)	4.69 ^a (1.46)	4.96 ^a (1.38)	5.05 ^a (1.30)	4.98 ^a (1.49)
Cheerfulness	5.25 ^a (1.45)	5.08 ^a (1.37)	5.14 ^a (1.35)	5.14 ^a (1.53)	5.11 ^a (1.44)	5.27 ^a (1.17)	5.40 ^a (1.36)	5.05 ^a (1.32)	5.03 ^a (1.49)
Post-tidying									
Relative Tidiness	5.75 ^A (0.86)	6.07 ^B (0.68)	5.89 ^{A,B} (0.95)	5.94 ^a (0.81)	6.00 ^a (0.75)	6.19 ^a (0.78)	5.50 ^{a,A} (0.89)	6.17 ^{b,B} (0.59)	5.64 ^{a,A} (1.02)
Neatness	6.49 ^a (0.86)	6.66 ^a (0.66)	6.46 ^a (1.10)	6.58 ^a (0.91)	6.70 ^a (0.55)	6.50 ^a (1.02)	6.38 ^a (0.78)	6.61 ^a (0.78)	6.43 ^a (1.19)
Follow-up									
Relative Tidiness	4.06 ^a	4.07 ^a	4.08 ^a	4.02 ^a	3.88 ^a	4.33 ^a	4.10 ^a	4.30 ^a	3.88 ^a

	(1.01)	(1.05)	(1.02)	(0.85)	(0.78)	(1.12)	(1.20)	(1.27)	(0.90)
Neatness	5.08 ^a	4.81 ^a	4.82 ^a	4.88 ^a	4.68 ^a	4.96 ^a	5.33 ^a	4.95 ^a	4.72 ^a
	(1.47)	(1.70)	(1.75)	(1.65)	(1.52)	(1.66)	(1.22)	(1.91)	(1.83)
Organization	5.53 ^a	5.12 ^a	5.32 ^a	5.43 ^a	5.06 ^a	5.54 ^a	5.65 ^a	5.18 ^a	5.15 ^a
	(1.37)	(1.72)	(1.46)	(1.59)	(1.47)	(1.26)	(1.06)	(2.00)	(1.59)
Clutter	4.75 ^a	4.37 ^a	4.44 ^a	4.72 ^a	4.24 ^a	4.37 ^a	4.77 ^a	4.52 ^a	4.50 ^a
	(1.51)	(1.61)	(1.72)	(1.69)	(1.58)	(1.59)	(1.30)	(1.66)	(1.84)
Cleanliness	5.19 ^a	5.40 ^a	5.18 ^a	5.17 ^a	5.40 ^a	5.02 ^a	5.21 ^a	5.41 ^a	5.30 ^a
	(1.25)	(1.13)	(1.27)	(1.26)	(1.12)	(1.33)	(1.26)	(1.17)	(1.23)
Cheerfulness	5.63 ^a	5.19 ^a	5.28 ^a	5.71 ^a	5.14 ^a	5.33 ^a	5.54 ^a	5.25 ^a	5.25 ^a
	(1.18)	(1.44)	(1.27)	(1.16)	(1.46)	(1.14)	(1.22)	(1.44)	(1.37)

Note. Standard deviations are in parentheses. Means that have different superscripts within a study differ at $p < .05$

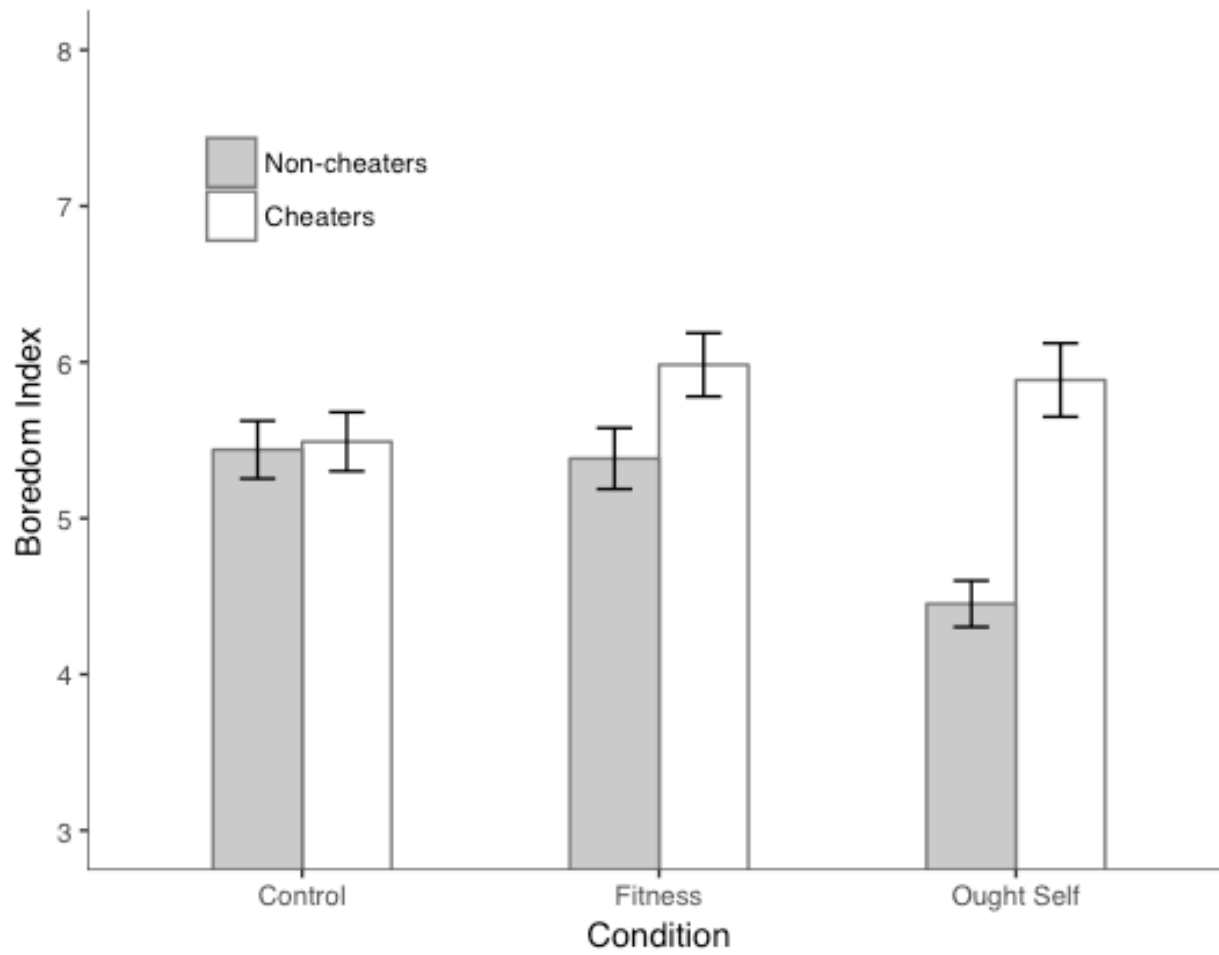


Figure 1. The effects of condition and cheating on boredom while tidying.

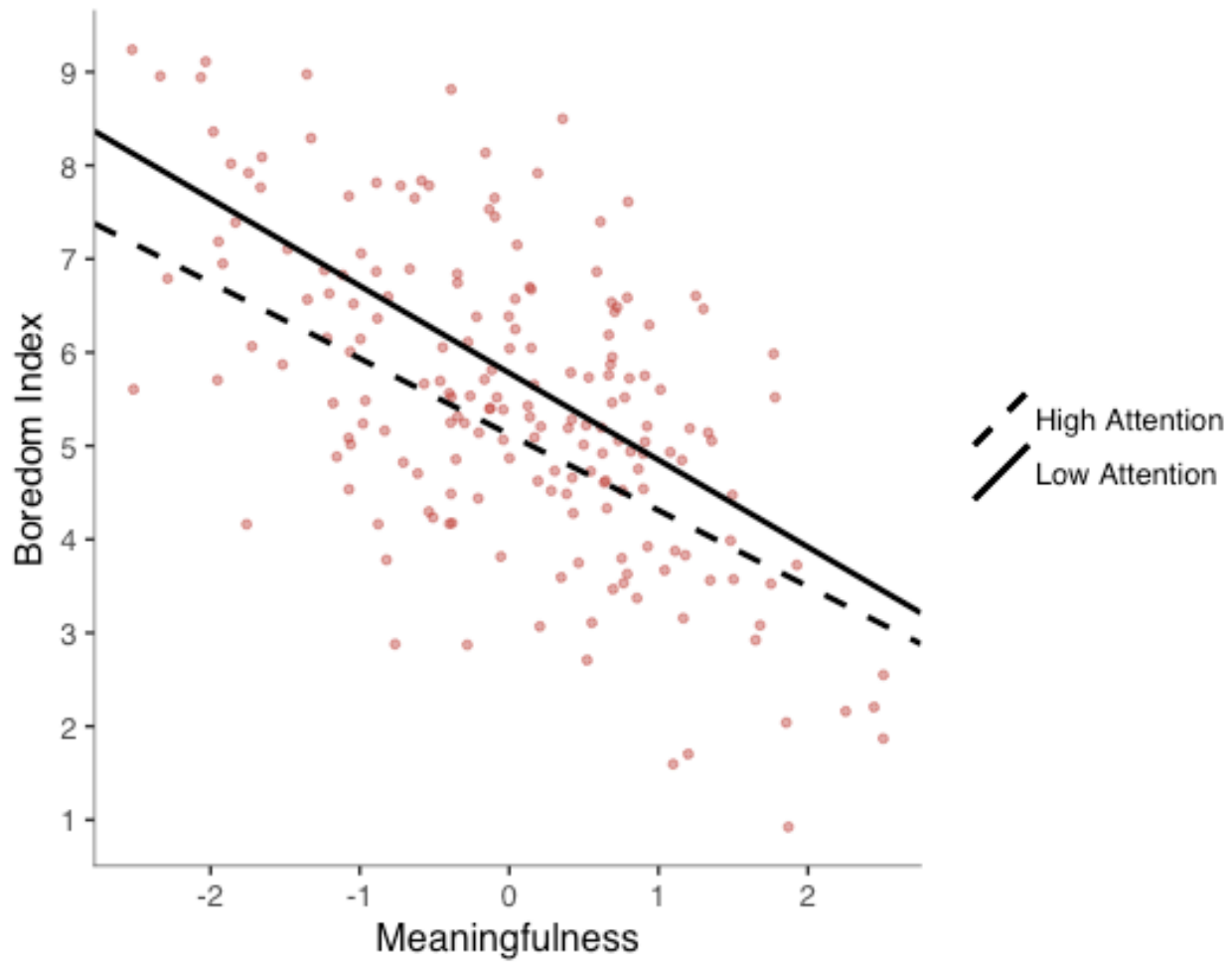


Figure 2. The effects of self-reported attention and meaning on boredom while tidying.

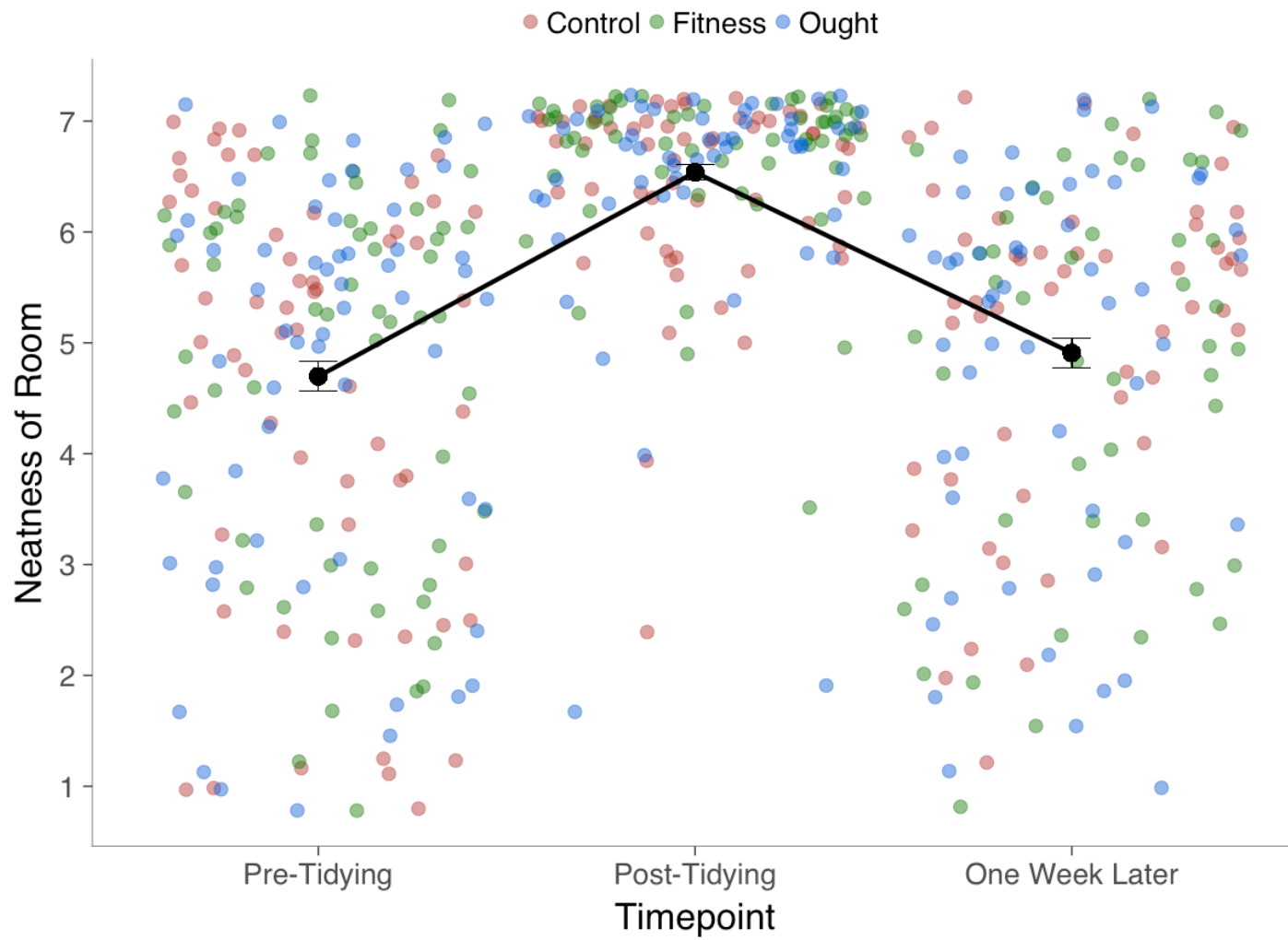


Figure 3. Temporary increase in coded neatness of students' rooms following the Tidying Period.