WHY FLIMSY FRAMEWORKS LEAD TO BEHAVIOR CHANGE FOR STUCK INDIVIDUALS

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ABSTRACT

Organizations have access to over 3,500 documented frameworks. Even more frameworks develop regularly to proliferate within organizations. I define a "flimsy framework" as a framework that individuals would not expect a priori to be able to achieve its stated goal. Traditionally, it has not been clear why flimsy frameworks propagate in organizations. Some researchers have suggested it is due to the momentum of having an early success streak. I argue that flimsy frameworks may propagate precisely *because* they are flimsy and non-threatening. Before experiencing a framework, individuals expected a flimsy framework to be less effective than either no framework or more substantial frameworks (Studies 1a and 1b). However, after experiencing a framework, individuals that were stuck on their projects achieved a different actual result. A flimsy framework led stuck individuals to put more effort into their projects than did no framework or more substantial frameworks (Studies 2-4). This effect can be explained by the fact that the flimsy framework decreases the degree to which taking an action feels overwhelming (Study 4). Taken together, this research demonstrates that individuals underestimate the expected effectiveness of a flimsy framework. Because flimsy frameworks feel non-threatening, such frameworks disinhibit individuals that are stuck into moving forward on their projects.

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Why Flimsy Frameworks Lead to Behavior Change

for Stuck Individuals

Frameworks and management fads are often criticized for being unsubstantial and flimsy. For example, the Wheel of Life coaching framework that allows one to rate one's satisfaction with the primary domains in life is likely the most used coaching framework (Whitworth, Kinsey-House, & Sandahl, 1998; see Figure 1a). At face value, however, this framework is not action-focused and one may be justified in not expecting it to help one take action. Similarly, the urgent-important grid framework (see Figure 1b) does not necessarily convey much more than a discussion of priorities and time management may achieve, and yet it has been highly propagated for over thirty years since Covey (1989) popularized the framework in his business and personal development book.

Insert Figures 1a, 1b, and 1c about here

Traditionally, it has not been clear why unsubstantial and flimsy frameworks propagate throughout an organization. Consider "quality circles," self-organizing groups of workers that come together to solve work-related problems such as safety, design, and manufacturing. In 1985, nearly every Fortune 500 company used quality circles. However, Strang and Macy (2001) study fads and recount that by 1988, 80% of quality circle implementations had been dropped for their ineffectiveness. Strang and Macy find that a few, limited early success stories give the sense that a fad like quality circles may be working, but once more organizations attempt to replicate the fad, the ineffectiveness becomes evident, and the fad is abandoned.

Similarly, Ferraro, Pfeffer & Sutton (2005) argue that theories can win in the marketplace of ideas when their assumptions become, as the authors describe, "true" and taken for granted. When a framework is evaluated and expected to be effective, it may be simply that the expectation is what leads to reports of effectiveness. This may continue so long as there are no damaging results from implementing the framework.

In this research, I argue that flimsy frameworks may be propagating precisely *because* they are flimsy and non-threatening. By appearing more approachable than more solid frameworks, flimsy framework may diminish the feeling of being threatened or intimidated. To anticipate the hypotheses, a flimsy framework may be stronger than no framework, and may even be stronger than a credible and solid framework, in situations in which the feeling of being overwhelmed is prominent. I will demonstrate that the effectiveness of a flimsy framework in some situations is due to the flimsy framework's ability to diminish the threatened feeling. Before claiming the hypotheses, I provide a definition and an example of a flimsy framework, summarize how frameworks are typically experienced within organizations, and discuss in what situations frameworks typically emerge.

Definition and Illustration of a Flimsy Framework

In this research, I define a framework as *a structure that serves as a guideline to help individuals or organizations think systematically about goals and projects*. To the degree that a framework is a structure, a model can be a framework and a metaphor or analogy can be a framework. I use the term *framework* because it is the common term in the coaching and consulting industries.

In order to have clear language to delineate between evaluating a framework before experiencing it and after, I define a "flimsy framework" as *a framework that individuals would not expect a priori to be able to achieve its stated goal*. In other words, a flimsy framework is a framework expected to be ineffective and flimsy. Note that the judgment about a framework occurs a priori, i.e., before an individual implements or experiences a framework.

One individual's flimsy framework could be another individual's most helpful framework. For example, consider an executive coach whose client has described his boss' anger at the client's actions. In the coaching text that has been referred to as the coaching bible (Whitworth et al., 1998), there is an exercise called the perspective exercise. In this case, the executive coach asked, "What is a *long-term perspective from* which you could see your boss' anger?" The client replied thoughtfully. Then the coach asked, "What is an *emotionally-sensitive perspective* from which you could describe this situation?" The client replied thoughtfully. Finally, the coach—looking out the office window and seeing snow—asked in order to add levity to the discussion, "What is a *snow perspective* from which you could describe this situation?" The client replied that the boss' anger had thawed and so would the negative experience of the boss' display of anger. On the face of it, the snow perspective question would likely be called a flimsy framework. There is no objective or reasonable expectation that considering a snow analogy would be an effective strategy. However, despite being a flimsy framework, it was in fact effective for the client in terms of bringing out additional creative thinking.

The above example sheds light on the phenomenon I seek to demonstrate in this research. In this situation, a framework that would otherwise be perceived as flimsy or unsubstantial allowed the client to make a connection that was helpful.

Frameworks in Organizations

Frameworks are often introduced to organizations by consultants and executive coaches. As the statements below indicate, consultants and executive coaches openly display their use of frameworks. Top consulting companies and coaching organizations feature these statements on their websites (bold added)[1]:

"Booz-Allen has created a five-step **framework**"

"[A] common **framework** for decision making in the organization..."

"The Co-Active **framework** … applies to leadership development as well as coach training."

"[B]usiness leaders have been honing their analysis of where and how to compete, grow, and best manage their organizations … **frameworks** help inform these decisions …"

"Putting together a structure and a **framework** will help you clarify each step …"

While these statements demonstrate outward assertions by frameworks providers, they do not indicate the broad scale of framework use. Frameworks are used extensively in organizations in two contexts: as employee assessments and as structures for strategy analysis. One of the most common uses of a framework is as an assessment for an executive to "discover for himself or herself what changes are needed and the will to

[1] The sources of the quotes are, respectively, the following: Booz Allen & Hamilton, 2013; Bain, 2010, CTI, 2013; McKinsey, 2013; BCG, 2013.

initiate those changes" (Feldman & Lankau, 2005: 840). Frameworks are often used in the first two phases of coaching described by Feldman and Lankau (2005): data gathering, feedback, coaching sessions, and ending evaluation. In the data-gathering phase, in addition to peer responses like 360-degree feedback, "coaches may also conduct assessments of executives' personality, leadership style, values, and attitudes." (Feldman & Lankau, 2005: 837). There are over 2,500 personality assessments available (Stabile, 2002). The most popular personality assessment is the Myers-Briggs Type Inventory, taken by over three million individuals per year, and used by 89 of the Fortune 100 companies (Gardner & Martinko, 1996; CPP, 2003). Assessments comprise a $400 million a year industry (Stabile, 2002).

Organizations are also willing to outlay significant capital towards using frameworks for strategy analysis and development. Hambrick and Fredrickson (2005: 51) describe the far-reaching proliferation of strategy frameworks:

> After more than 30 years of hard thinking about strategy, consultants and scholars have provided executives with an abundance of frameworks for analyzing strategic situations. We now have five-forces analysis, core competencies, hypercompetition, the resource-based view of the firm, value chains, and a host of other helpful, often powerful, analytic tools. Missing, however, has been any guidance as to what the product of these tools should be….

Who better to provide guidance on framework use than consultants themselves? Ibisworld (2013) estimates that the consulting industry takes in $14 billion in revenue per year. It is not the case that the entire amount that organizations pay to consultants is

dedicated to framework implementation because coaches and consultants provide many services beyond frameworks. However, consulting companies make their frameworks a cornerstone of their value proposition to organizations. One management consulting firm reports that there are over 1,000 frameworks that can be used within organizations (Mindtools, 2013). As an example, McKinsey and Company features 21 organizational frameworks, many of them proprietary, on the website page dedicated to celebrating the company's classic "enduring ideas" (McKinsey, 2013). As another example, management consult Bain and Company warns about the possibility of choosing the wrong framework as a "dangerous game of chance": "The selection process [for frameworks] itself can be as complicated as the business issues they need to solve. … In the absence of objective data, groundless hype makes choosing and using management tools a dangerous game of chance." (Rigby, 2011: 10) To help executive avoid making mistakes in choosing frameworks, every year or two since 1993 Bain and Company has been creating an executive's guide to the 25 top management tools/frameworks (Rigby, 2011).

In thinking about how much individuals and organizations pay for frameworks, I ran a pilot to see whether more expensive coaches are more likely to recommend frameworks to their clients.[2] I found that the higher the coach's coaching fee, the more he or she responds that using frameworks (as contrasted with having a regular discussion) will lead the client to take action ($r = .47$, $p = .036$; see Figure 2). This relationship may suggest that coaches who favor frameworks can charge more because of the tangible

[2] Members of an American Psychological Association email list targeted to individuals interested in positive psychology received a link to this survey for no compensation. Members of the list may include coaches, positive psychologists, and social psychologists regularly post to this list. Following the disclosure guidelines of Simmons, Nelson, and Simonsohn (2011) and as demonstrated in the supplemental materials of Simonsohn & Gino (2013), I have provided the full set of variables collected for Pilot 1 in Appendix A.

value added by using frameworks. It may also be illustrating coaches' motivated beliefs about how much value they add to the client when they use frameworks. It may also suggest that those who charge more have greater coaching experience including more knowledge about frameworks. To control for this last possibility, I used the only variable in the data that represents experience, the number of years that the individual has been a coach. Controlling for number of years, the effect of coaching fee on belief that frameworks lead a client to take action is still marginally significant ($\beta = .01$, *Beta* = .44, $t = 1.89$, $p = .076$).

Insert Figure 2 about here

Despite the current broad reach and high capital outlay for frameworks, there is scant evidence that frameworks are effective. Even those frameworks most popularly used in organizations have come under fire by researchers and by organizations themselves for being ineffective, unreliable, and invalid. Frameworks have been critiqued for being ineffective with respect to their stated goals, unreliable over time, and invalid with respect to the construct they seek to capture (cf., Gardner & Martinko, 1996; Hill & Westbrook, 1997).

As one example of the critiques, the Myers-Briggs Type Inventory (MBTI) has been measured to be neither face valid (its output does not map at face value to the constructs it claims) nor reliable (it has a low test-retest reliability) (Pittenger, 1993; Gardner & Martinko, 1996). Additionally, Pittenger alerts individuals with respect to using the instrument: "the MBTI, while offering much intuitive appeal, may not yet be

able to support the claims its promoters make" and "the available data warrant extreme caution in its application" (2005: 210). The MBTI has been challenged on its effectiveness due to the surplus of data that demonstrates that it does not achieve its goals within employee selection (Pittenger, 1993). Another popular framework that has received ample critique is the SWOT framework (strengths-weaknesses-opportunities-threats), described by Porter (2008) as unrigorous and *ad hoc*. Other researchers agree with Porter's assertion about the ineffectiveness of the SWOT framework (Hill & Westbrook, 1997; Valentin, 2004). Porter created his well-respected Porter's five forces framework for developing business strategy and engaging in industry analysis (see Figure 1c) partly as a reaction to the unsubstantiated SWOT analysis. These examples serve to illustrate that frameworks can proliferate within organizations despite being unsubstantial. As an indication into the reason that unsubstantial frameworks may proliferate, I examine below when individuals most commonly use frameworks.

When Individuals Use Frameworks

I argue that framework use increases when individuals feel stuck. To evaluate this idea, first, I offer a definition of stuck. Second, I present examples of organizational evidence that suggests that individuals turn to frameworks when they are stuck. Third, I introduce initial data for the fact that coaches prefer to offer frameworks to individuals that are stuck as opposed to those individuals that are making progress.

Individuals are typically aware of the feeling of being stuck and of the feeling of making progress. In one pilot, I asked half of the participants about their experience with a project on which they felt stuck and the other half about their experience with a project

on which they felt that they were making progress. There was a difference in terms of expected and actual progress.[3] For those thinking about a stuck project, individuals reported that at the time of the survey they were about 50% of the way to where they expected to be by this point in their project. On the other hand, for those thinking about a project on which they were making progress, individuals reported that they were about 90% of the way to where they expected to be at this point. This indicates that a practical definition of stuck is that people define themselves as "stuck" when they believe *there is a large gap between expected progress and actual progress.* This is consistent with written responses that describe the feeling of being stuck, such as "endless uphill battle," "can't seem to get any progress done," "live in an unfinished state," and "daunting."

Next, consider a few situations in which frameworks emerge in the work setting. I described the MBTI previously as the most common personality assessment within organizations. It is also the assessment routinely recommended and prescribed to those employees and individuals who are stuck in their careers or have difficulties in their jobs (Carr, 2002; Kiersey & Bates, 1984; Baron, 1998; Tieger & Barron, 2007). When else are frameworks presented to those who are stuck or not making progress? As the management consulting company Bain & Company asserts, consultants use frameworks that typically target the following goals: "boost revenues, innovate, improve quality, increase efficiencies or plan for the future" (Rigby, 2011: 10).[4] At first glance, all of these goals may reflect organizational problems, and specifically the problems of an

[3] This pilot was posted on Survey Sampling International; participants were compensated according to the incentives email that they received but typically no more than $2. Following the disclosure guidelines of Simmons, Nelson, and Simonsohn (2011), I have provided the full set of variables collected for Pilot 2 in Appendix B.

[4] However, there is a caveat to the concept that organizations most use frameworks when organizations are stuck. That caveat is cost. Rigby (2011) reports that in downward economic cycles, organizations cut down on everything, including framework use.

organization that is not making forward progress. As an additional example, executive coaches are often brought in to help executives at the time when the executives are not making progress and are underperforming (Feldman & Lankau, 2005); it is not the case that all executive coaches use frameworks all the time, however executive coaches typically conduct the first intake session using targeted questions, self-assessments, or other frameworks for the executive.

Taken together, these three examples indicate that there may be a timing preference in the use of frameworks. Although anecdotal, the above examples suggest that individuals and organizations may be offered frameworks the most when they are stuck and not making progress. To test the concept that coaches are relatively more likely to offer frameworks to individuals that are stuck as opposed to those making progress, I ran a brief coaching survey.[5] I prepared two conditions, one that asked coaches to consider a client who feels stuck, and another that asked coaches to consider a client who feels that he or she is making progress. Then, I asked coaches to what degree they are likely to take several actions, including this one: "Have [clients] use a coaching framework or model to address their thinking about this issue." Coaches reported they would be significantly more likely to have the stuck client use a coaching framework, as opposed to the client who was making progress.[6] This result reflects a reasonable assumption. Intervening with a framework may be more helpful when there is a need for it than when there is no need for it.

[5] A link to this survey was posted as a discussion stream in several coaching groups on the career website LinkedIn.com; only responses by U.S.-based coaches were included as the term "framework" may not translate in the same way and may hold different nuances internationally. Following the disclosure guidelines of Simmons, Nelson, and Simonsohn (2011), I have provided the full set of variables collected for Pilot 3, the coaches' survey #2, in Appendix C.

[6] Coaches considering a client who was stuck reported that they would be more likely to have the client use a coaching framework ($M = 5.00$, $SD = 1.86$), as compared to coaches considering a client who was making progress ($M = 3.84$, $SD = 1.90$); $t(49) = 2.12$, $p = .039$.

The earlier anecdotal examples suggest that frameworks are regularly offered to individuals and organizations that are stuck whether stuck in one's career, stuck with organizational problems, or stuck in underperforming. The survey suggests an association from a coach's point of view between being stuck and greater framework use. Building on the possible relationship between the feeling of being stuck and the use of frameworks, I argue that it is not just use of frameworks, but especially use of flimsy frameworks, that is important to those who are stuck. In the current research, I study flimsy frameworks as a subset of frameworks, to evaluate whether flimsy frameworks have a differential effect on those who are stuck versus on those who are making progress.

Hypotheses

To a stuck individual, using a flimsy framework may be more productive in leading to action than not using one. Consider the experience of a stuck individual, an individual who reports that he is only about 50% of the way to the progress that he expected by this point of his project. In short, he's stalled on his project. He may have already tried the techniques that most people know to try when faced with a project on which they are stuck, such as setting goals (Locke & Latham, 1990) and exerting willpower and self-regulation (Muraven & Baumeister, 2000; Muraven, Baumeister, & Dice, 1999). Now, consider that this stuck individual applies a flimsy framework to his situation. A flimsy framework, by definition, is expected to not be able to achieve its stated goal a priori. However, when a stuck individual is able to give some response in answer to a flimsy framework, perhaps the stuck individual starts to believe that if

answering such a flimsy framework is possible, then taking action on the stuck project is more possible. The ability to take even that small action with respect to the project on which he's stuck may allow him to feel that being stuck is not as overwhelming as he had previously felt. I argue that it is this decrease in feeling overwhelmed that leads the stuck individual to take an action on a project on which he may otherwise not have been able to take the action.

I do not predict this to be the case for individuals that are making progress on their projects. At baseline before experiencing any frameworks, stuck individuals have a higher degree of being overwhelmed than individuals that are making progress.[7] Individuals that are making progress should not perceive a decrease in being overwhelmed because making progress is not overwhelming. If one already displays a relative level of advancement and progress on a project, then a flimsy framework should not remove a degree of threat. Hence, I predict an interaction between the degree of progress and frameworks.

H1: There will be an interaction between the degree of progress and framework such that for stuck individuals, the flimsy framework will lead individuals to take more action than will no framework and for individuals that are making progress, there will be no difference between the flimsy framework and no framework in the amount of action the individual takes.

Within the above interaction, I especially sought to test the mechanism whereby flimsy frameworks, as opposed to no-framework controls, lead stuck individuals towards taking more action. I expect this research to show that the reason that a flimsy

[7] I summarize pilot data describing the relationship between feeling stuck and the feelings of being overwhelmed and threatened later in the introductory text to Study 2.

framework, as opposed to a no-framework control, can diminish the feeling of threat for stuck individuals is that this feeling is related to the fact that the individuals are stuck on their projects. Being stuck is related to feeling overwhelmed and feeling that one's abilities are threatened.[8] Hence, a flimsy framework, by virtue of its insubstantial and non-threatening nature, could diminish or remove the degree of being overwhelmed that stuck individuals have about their projects.

H3: For stuck individuals, the mechanism whereby a flimsy framework leads to greater action-taking than no framework is that the flimsy framework is non-threatening and lowers the feeling of being overwhelmed.

The Experiments

To test these hypotheses, I first created a flimsy framework, then tested whether it leads stuck individuals to take action, and finally explored what it is about a flimsy framework relative to a no-framework control that drives stuck individuals to take action.

First, I created a framework that I thought might be rated ineffective and flimsy. The "framework" is that I asked individuals to describe the process of how they make a sandwich, and then to describe how thinking about that process could help them move forward on their projects. As one might expect, there is nothing intrinsic to the process of sandwich-making that should be uniquely helpful to stuck individuals in moving forward on their projects. I tested perceptions and expectations: whether people perceive this particular framework as flimsy and whether they expect it to be effective or not at getting them to put more effort into their projects (Studies 1a and 1b).

[8] This is summarized in the introductory text to Study 2.

Then, I examined whether this flimsy framework would actually be helpful to stuck individuals—but not to those individuals making progress—in getting them to work more on their projects. To this purpose, I conducted a study with university students at the end of an academic quarter. I argue that if students were to apply the flimsy framework to the school subject on which they are stuck, they would spend more time studying the stuck subject; I did not expect flimsy frameworks to be able to help students who were already making progress. Indeed, I found that a flimsy framework does not lead those students who are making progress to spend any additional effort on their school subject above a control condition. However, for stuck students, the flimsy framework had an effect on their studying effort (Study 2).

To extend the external validity of the students study, I tested the flimsy framework on stuck individuals that needed to work on some weekend projects of their choice, such as renovating their kitchens, updating their websites, weeding their gardens, and working on writing their novels. Again, the flimsy framework did lead stuck individuals to spend more time on their projects over a control condition and over an additional substantial framework (Study 3).

Finally, I sought to understand ***why*** it is that when stuck individuals apply a flimsy framework to their thinking about their projects, this results in them take action towards moving forward on their projects. To examine the thinking for stuck individuals, I tested four possible cognitive and emotional processes. First, I examined whether flimsy frameworks were affecting success expectations and value judgments that stuck individuals had about their expected progress and about their projects (expectancy-value theory). Next, I examined whether flimsy frameworks gave stuck individuals a renewed

sense of interest in their project (motivation). Third, I examined whether it was the structure of the flimsy framework that induced stuck individuals to see their projects as more structured, thus leading them to take action (need for structure). Fourth, I examined whether flimsy frameworks help stuck individuals decrease how intimidating the stuck project appears (being overwhelmed).

In sum, over the course of the studies, I aimed to show that a framework can be rated flimsy and ineffective a priori to applying the said framework to one's own problem, and that—once applied to one's problems—a flimsy framework can lead stuck individuals to take action on their problems, relative to a no-framework control. Furthermore, I additionally showed that this occurs because the flimsy framework appears so seemingly ineffective as to be non-threatening.

Studies 1a and 1b: A Priori Framework Perceptions

How do people view various frameworks ***before*** applying them?

The goal of Studies 1a and 1b is to was to examine whether it would be possible to create a flimsy framework, which—in comparison to a control condition and to other frameworks—would be perceived as less substantial and would be expected to be less effective.

Because frameworks are often used to help individuals move forward on various projects, I sought a framework that would have no inherent influence on helping people to take action. To this end, I sought a framework that would call up for people situations with which they have some experience, that would represent a structure typical of many frameworks, and that would at face value have nothing to do with an individual's project.

First, I considered situations with which most people have some experience, such as going grocery shopping, eating a sandwich, doing one's laundry, driving to the store.

Next, I thought of the structure common to many frameworks: that the individual considers one concept in order to make conclusions about the individual's own goals or problems. For example, the individual could consider the concepts of snow, a stoplight, working out at the gym, playing chess, etc. and then apply it to his or her own issue. To reference the frameworks already mentioned above, the individual could consider a bicycle wheel (Figure 1a), a 2 x 2 matrix for organizing one's priorities (Figure 1b), or a market's competitive landscape (Figure 1c) in order to apply it to the situation on the individual's mind.

Much of my thinking about choosing a framework to test for flimsiness has an underlying current of analogical problem-solving, i.e. mental processes that draw parallels between the framework concept (e.g., snow) to the target issue (e.g., dealing with one's boss' anger). Gick and Holyoak (1980) argue that using analogical problem-solving can help with new ideas and with creative insight. The analogic problem-solving literature (e.g., Gick & Holyoak 1980; 1983) argues that the analogy of comparing the target (anger) to the source (snow) creates an organized system of relations like a schema. Then, suddenly, it can become easier to see solutions to business problems.

The third goal by which I sought to choose a framework is that the framework would be conceptually distinct from the individual's project. If I were to ask individuals to focus on a project of organizing their desks, and if I gave a framework that described organizing one's closets, the two concepts would be conceptually similar, and I aimed to avoid such similarity.

Note that I posit no requirements that frameworks are a subset of analogies and metaphors or that analogies and metaphors are a subset of frameworks. I merely recognize that a framework that provides an analogy to sandwich-making could achieve the goals of familiar experience, structure common to frameworks, and no known relationship with people's choices of projects.

Study 1a

Which framework do individuals expect to lead more to taking action: a flimsy framework or the well-validated goals framework?

In this study, I wanted participants to evaluate the plausibility and effectiveness of the framework without actually experiencing the framework. To experience or apply a framework, a participant actually needs to complete the instructions of the framework (Whitworth et al., 1998). To evaluate a framework, a participant needs only to read about the instructions that he or she *would* complete, but does not need to complete them. I divided participants into four conditions. The four sets of instructions are as follows.

In the ***flimsy framework*** condition, participants were instructed to describe the process of making a sandwich, and then to consider how that description could help them work on their project.

Additionally, I compared the flimsy framework to a framework that is also of the analogical problem-solving type in the sense that it offers reference to a concept and then requests that individuals apply that concept to their own issues. However, this framework is not as lighthearted or whimsical by design as thinking about making a sandwich. In the ***general process framework*** condition, participants were instructed to

describe the process of working on a project in general, and then to consider how that description could help them work on their specific project.

I included the goals framework in order to have a comparison in terms of the gold standard of effective manipulations. Goal-setting theory (Locke & Latham, 1990) is a framework that has been shown to be effective as compared to a do-your-best control in over 400 laboratory and field studies, for over 88 different tasks, and for over 40,000 study participants (Locke & Latham, 2006).[9] In the ***goals framework*** condition, participants were instructed to set a specific and difficult yet attainable goal and to consider how that goal could help them work on their project.

Finally, in the ***framework-absent control*** condition, participants were instructed to describe any aspect of their project. Note that while there was no framework in this condition, I did require participants to think about their projects.

Method

Participants. Amazon.com's Mechanical Turk workers participated in this study in exchange for $0.75. Participants were limited to those in the U.S. who had a 95% approval rating on Mechanical Turk. Two hundred and forty two participants completed the survey (36.4% female, 6.2% not reporting; age $M = 30.48$, $SD = 10.64$). Following the disclosure guidelines of Simmons, Nelson, and Simonsohn (2011) as demonstrated in the supplemental materials of Simonsohn & Gino (2013), I have provided the full set of variables collected and details on data cleaning in Appendix D.

[9] While goal setting itself is a manipulation, this manipulation is used in organizations as a framework. Two of the more common instantiations of goal setting as a framework are the SMART goals framework (SMART is an acronym for significant/measurable/attainable/relevant/time-bound) and the GROW framework (GROW is an acronym for goal/reality/options/way forward).

Procedure. Participants were told that the study would be about evaluating written materials. All participants were instructed to choose an important project they would be working on in the next month. Then participants were given one of four sets of instructions and asked to consider these instructions while thinking about their project. Finally, participants were asked to evaluate the instructions on multiple dimensions.

Measures.

Degree of progress. Prior to the framework instructions, participants filled in a one-item measure of the degree to which they were stuck or making progress (1 = Very much stuck, 7 = Very much making progress).

Expectation ratings. After the framework instructions, participants filled in 33 items on a 1-7 scale (1 = Not at all, 7 = Extremely) to evaluate the framework they were shown. A principal components factor analysis was conducted to identify the distinct factors in the participants' thinking after reverse-scoring the relevant items. Initially, the factorability of the items was examined: the Kaiser-Meyer-Olkin measure of sampling adequacy was .91, above the recommended value of .6, and Bartlett's test of sphericity was significant (χ^2 (528) = 5459.39, $p < .001$).

A varimax rotation was implemented for eigen values of greater than one, and the scree plot was examined. A six-factor solution emerged, with each factor explaining, respectively, 36%, 12%, 8%, 6%, 5%, and 3% of the variance, and the scree plot did not demonstrate any leveling off until after the sixth factor. The factors are, respectively: credibility (Cronbach's $\alpha = .89$), expectation that the framework will be effective to get oneself to work more ($\alpha = .86$), flimsiness ($\alpha = .89$), familiarity ($\alpha = .79$), interest in learning more ($\alpha = .89$), and the degree of a feeling of being overwhelmed ($\alpha = .84$).

Items with a factor loading of greater than .50 in the rotated solution were chosen to create each factor, and all factors with their corresponding items are listed in Appendix E. Examples of the items comprising each factor are as follows: credibility ("The method described above is ... Authoritative and dependable"), expected effectiveness ("These instructions will get me to work more on my project"), flimsiness ("The method in these instructions is not reliable"), familiarity ("This way of thinking about my project is familiar to me"), interest in learning more ("I am interested in learning more about how I can apply this method to my project"), and being overwhelmed ("Following the instructions in the method described above seems intimidating").

Will this help? Additionally, one item measured a yes/no response to the question of whether this method would help the participant move forward on their project.

Results

Table 1 lists the means, standard deviations, and correlations between factors.

Degree of progress. The average degree of making progress was $M = 4.94$, $SD = 1.33$. Thus participants on the whole were choosing a project on which they were slightly making progress.

Expected effectiveness. The main factor of interest was expected effectiveness, i.e. the degree to which following this method would lead the participant to work more on his or her project ("get me to work more," "helpful to me for working more," etc.). The effectiveness factor was significantly lower for the flimsy framework ($M = 3.53$, $SD = 1.58$) than for each of the other conditions in pair-wise comparisons: framework-absent control ($M = 4.53$, $SD = 1.53$; $t(113) = 3.41$, $p = .001$); general process framework ($M = 4.38$, $SD = 1.30$; $t(122) = 3.26$, $p = .001$); goals framework ($M = 4.85$, $SD = 1.24$; $t(123)$

= 5.22, $p < .001$). Figure 3 shows the level of each factor for each condition, and Table 2 shows the respective means for each factor and each condition.

Expected flimsiness. Additionally, the flimsiness factor (describing the framework as unsubstantial, not reliable, flimsy, and silly) was significantly higher for the flimsy framework ($M = 3.57$, $SD = 1.70$) than for the other conditions in pair-wise comparisons: framework-absent control ($M = 2.48$, $SD = 1.20$; $t(113) = -3.90$, $p < .001$); general process framework ($M = 2.81$, $SD = 1.53$; $t(122) = -2.60$, $p = .010$); goals framework ($M = 2.31$, $SD = 1.25$; $t(123) = -4.72$, $p < .001$).

Other expected factors. Of the other factors, credibility, interest in learning more, and familiarity were either significantly higher or trending higher for each of the other conditions as compared to the framework condition. The last factor, being overwhelmed, was significantly lower for the flimsy framework ($M = 1.70$, $SD = .77$) than for each of the other conditions in pair-wise comparisons: framework-absent control ($M = 2.61$, $SD = 1.21$; $t(113) = 4.82$, $p < .001$); general process framework ($M = 2.23$, $SD = 1.16$; $t(122) = 2.96$, $p = .004$); goals framework ($M = 4.27$, $SD = 1.10$; $t(123) = 4.46$, $p < .001$).

Insert Table 1, Figure 3, and Table 2 about here

Will this help? The final measure of interest was a yes/no question: "Will this method help you move forward on your project?" The results were stark: for the flimsy framework, 40.0% said yes while for the other conditions (framework-absent control, general process framework, and goals framework), respectively, 71.7%, 68.3%, and 79.7% said yes (see Figure 4). The flimsy framework response was significantly lower

than any of the three other responses, respectively, χ^2 (1, N = 113) = 11.42, p = .001 for the framework-absent control, χ^2 (1, N = 123) = 9.89, p = .002 for the general process framework, and χ^2 (1, N = 124) = 20.41, p < .001 for the goals framework.

Insert Figure 4 about here

Discussion

In sum, the flimsy framework was significantly different from the other three conditions on almost all of the six factors measured. On the two main a priori factors of interest—expected effectiveness and flimsiness—the flimsy framework differed from the other conditions. The expected effectiveness measure was supported by results from a yes/no question of whether the method would help the participant move forward on the project. Given the results of this study, it may be unreasonable for an objective, rational person to recommend the flimsy framework over the goals frameworks, the general process framework, or even over the framework-absent control to an individual struggling with being stuck.

Study 1b

Comparing the process in the flimsy framework to the process of simply taking steps: which do individuals think will be more effective?

It is somewhat surprising that the general process framework differs from the flimsy framework on a priori ratings of effectiveness and flimsiness. The instructions are fairly similar: think about the process of making a sandwich [working on a project in general] and then apply it to your own project. Perhaps the description of thinking of the

process of working on a project in general is too clunky and too broad to be understood as a set of instructions. The instruction to think about the process of working on a project could be described as the instruction to think about one's project in a series of steps. Hence, I wanted to test the simpler (and likely more familiar) way of requesting that individuals think about a series of steps. For this reason, I test one other framework in Study 1b for a priori beliefs about expected effectiveness and flimsiness: the steps framework.

Method

Participants. This study was conducted in the same way as Study 1a: Amazon.com's Mechanical Turk workers participated in this study in exchange for $0.75, and participants were limited to those in the U.S. who had a 95% approval rating on Mechanical Turk. In total, 164 participants completed the survey (51.2% female, 1.2% not reporting; age $M = 33.13$, $SD = 12.74$). As the study design is the same as that of Study 1b, I have added the details on data cleaning to the full set of variables already found in Appendix D.

Procedure. The procedure was the same as in Study 1a. The framework conditions tested were the framework-absent control condition, the flimsy framework (both as in Study 1b), and the ***steps framework***, in which participants were instructed to describe the steps they could take to work on their project.

Measures. The same measures were used as in Study 1a.[10]

[10] For a detailed description of the reasons for using the same factor solution in Study 1b as in Study 1a, see Appendix D.

Results

Table 3 lists the means, standard deviations, and correlations between factors for Study 1b.

Degree of progress. The average degree of making progress was $M = 4.96$, $SD = 1.45$. Thus participants on the whole were choosing a project on which they were slightly making progress.

Expected effectiveness. The factor of most interest was the expectation of effectiveness, i.e. the degree to which following this method would lead the participant to work more on his or her project. Replicating Study 1a, the effectiveness factor was significantly lower for the flimsy framework ($M = 3.79$, $SD = 1.53$) than for each of the other conditions in pair-wise comparisons: framework-absent control ($M = 4.42$, $SD = 1.43$; $t(112) = 2.26$, $p = .026$) and the steps framework ($M = 4.65$, $SD = 1.41$; $t(107) = 3.03$, $p = .003$). Figure 5 shows the level of each factor for each condition, and Table 4 shows the respective means for each factor and each condition.

Insert Table 3, Figure 5, and Table 4 about here

Expected flimsiness. Additionally, the flimsiness factor was higher for the flimsy framework ($M = 3.41$, $SD = 1.79$) than for framework-absent control ($M = 2.42$, $SD = 1.47$; $t(112) = -3.21$, $p = .002$). However, surprisingly, the flimsiness factor was trending but was not significantly higher for the flimsy framework as compared to the steps framework ($M = 2.90$, $SD = 1.85$; $t(107) = -1.46$, $p = .146$, *ns*).

Other expected factors. The other factors—credibility, interest in learning more, familiarity, and the degree of being overwhelmed—for the most part acted similarly to the same factors in Study 1a. Replicating Study 1a, the being overwhelmed factor was significantly lower for the flimsy framework ($M = 1.96$, $SD = 1.20$) than for each of the other conditions in pair-wise comparisons: framework-absent control ($M = 2.67$, $SD = 1.27$; $t(111) = 3.04$, $p = .003$) and the steps framework ($M = 2.55$, $SD = 1.17$; $t(107) = 2.59$, $p = .011$). See Table 4 for levels of significance for all factors across all conditions.

Will this help? The final measure of interest was a yes/no question: "Will this method help you move forward on your project?" One result did not replicate a result from Study 1a: for the flimsy framework, 47.5% said yes while for the framework-absent control condition, 58.2% said yes; χ^2 (1, $N = 114$) = 1.31, $p = .252$, *ns*. The flimsy framework yes response was higher and the framework-absent control yes response was lower than those in Study 1a. On the other hand, the flimsy framework's 47.5% yes response percentage was significantly lower than the 75.5% yes response percentage for the steps framework; χ^2 (1, $N = 108$) = 8.79, $p = .003$. See Figure 6.

Insert Figure 6 about here

Discussion

Taken together, Studies 1a and 1b demonstrate that a priori expectations of effectiveness are lower for the flimsy framework compared to every other framework condition tested (framework-absent control, general process framework, goals framework, and steps framework). Additionally, a priori ratings of flimsiness are greater

for the flimsy framework compared to three frameworks (framework-absent control, general process, and goals), but, although trending, was not significantly greater for the flimsy framework as compared to the steps framework. While Studies 1a and 1b illustrated expectations about various frameworks, in the following study, I test the actual results from experiencing a flimsy framework if one is stuck.

Study 2: The Library Texting Study

Can a flimsy framework lead stuck students to put in more effort?

I conducted a study with university students at the end of an academic quarter. In this field experiment, my central aim was to increase the studying time of those students who were thinking about their most-stuck school subjects. I proposed to demonstrate H1a—that if students were to apply the flimsy framework to the school subject on which they were stuck, they would spend more time studying the stuck subject. I also expected to be able to demonstrate H1b—that flimsy frameworks would not be able to help students who were already making progress.

In this study, in the two weeks before finals week, students coming to the library encountered researchers standing outside with clipboards. Researchers offered students a chance to make $5 if they were going into the library to study. Students who chose to participate filled in the experimental manipulations using a paper-based questionnaire on clipboards, and were then texted four times over the course of the following hour and asked to text back what school subject they were studying (whether the one they told us about, a different subject, or not schoolwork altogether).

The first question in the paper survey asked students to list all the school subjects that they had in their backpack (or accessible on their laptop) on which they could be working during this trip to the library. Then students were presented with the ***most-stuck*** or ***most-progress*** manipulation: "Of these above subjects, what is the subject on which you feel the most stuck [feel that you are making the most progress]?" The subject that students chose would be the one that we are interested in following up on during the texting part of the study.

On the following page of the paper questionnaire, students filled in one of three framework manipulations (no framework, flimsy framework, or goal framework). The ***no framework*** condition instructed students to describe making a sandwich and then to list the kind of sandwiches they would expect to see on a menu board at a sandwich shop. The ***flimsy framework*** condition instructed students to describe making a sandwich and then to describe how making a sandwich may be similar to how they would approach working on the subject they had listed. The ***goals framework*** condition instructed students to set a specific and challenging goal for doing well this term on the subject they had listed, and to describe in what ways the goal was specific and challenging.

I predicted an interaction such that for students thinking about their most-progress subject, the flimsy framework as compared to no framework would make no difference on the amount of time studying, and that for those students thinking about their most-stuck subject, the flimsy framework would lead to more time spent studying than would no framework.

At the same time, I did not have a prediction about the goals framework. Overall, goal-setting theory predicts that setting a specific and challenging goal will have better

performance results than an instruction to do one's best (e.g. Locke & Latham, 1990). Thus, for students who thought about a school subject on which they were making the most progress, I expected that goal setting could give them an additional increase in studying over the no framework condition. For those students who thought about their most-stuck school subject, however, I did not have a prediction. Erez and Zidon (1984) report that performance levels off or decreases when the limits of ability are reached. It would not be a far-fetched inference to suggest that individuals struggling on their most-stuck subject two weeks before final exams have presumably reached their levels of skills and abilities on their stuck course. Furthermore, it is plausible that individuals thinking about their most-stuck school subjects may exhibit a lower level of goal commitment than those making the most progress on their school subjects. When low goal commitment is combined with goal setting, effort and performance do not increase (e.g., Locke & Latham, 2006). To monitor whether low goal commitment is a factor for stuck students, I measured goal commitment in the study. Moreover, goal setting may not be effective when the individual is already stressed or under threat (Staw, Sandelands, & Dutton, 1981), and it would be reasonable to assume that students pondering a course on which they are the most stuck may feel stressed and threatened.

I can speak to stuck individuals being stressed or under threat. In the pilot from which I derived the definition of stuck as the gap between expected progress and actual progress, I also measured potential correlates of the feeling of being stuck. I asked about the participants' beliefs that the project is overwhelming, worrying, threatening in that one's abilities are challenged, difficult to complete, and a reminder of something that needs to be completed. I averaged these five items to create a measure of being

overwhelmed (Cronbach's $\alpha = .83$), and, as expected, stuck individuals were more overwhelmed than individuals who were making progress.[11] Additionally, the more progress people were making on their projects, the less overwhelmed they felt ($r = -.51$, $p < .001$). In addressing the claim that goal setting may not be effective for individuals under threat, this pilot suggests that stuck individuals do believe themselves to be under threat, and hence the goals framework could be ineffective for them.

Method

Participants. One hundred and ninety eight undergraduates going into the library to study completed both the paper survey and the texting responses. Of these 198 undergraduates, 26 students (13.1%) were excluded from the analysis for skipping both attention checks (those students that completed at least one attention check remained in the study). Thus, the data was analyzed with the remaining 172 undergraduates. The 172 undergraduates (51.2% female) were distributed by school year as follows: 45.3% freshmen, 21.5% sophomores, 16.3% juniors, and 16.9% seniors. Participants were paid $5. I have provided the full set of variables collected and details on data cleaning in Appendix F.

Procedure. Students completed a paper survey before entering the library. This survey included the manipulations. Then students responded to texts at four different times over the course of the following hour, texting back what they were working on at the time of the text: *A) the subject [you told us about], B) another subject, C) not schoolwork? (REPLY A, B, or C).* Then, students responded to additional texts about

[11] The stuck condition rated higher ($M = 4.72$, $SD = 1.27$) on being overwhelmed than did the making progress condition ($M = 3.68$, $SD = 1.37$); $t(146) = -4.79$, $p < .001$.

goal commitment, expected study time, and a manipulation check for the name of the subject.

Measures.

Degree of progress manipulation check. One item on the paper survey was used to assess the degree of progress on the project: "How do you feel about the subject [you told us about]?" (-3 = Fairly stuck, 0 = Neutral, 3 = Making progress).

Dependent variable: time spent working on the focal subject. The dependent variable was the count of times (out of a possible four times) that their text responses indicated that students were working on the subject they had told us about.

Planned study time in the library. "What is the total amount of time that you will be spending in the library during this visit?" Answers given in hours were converted to minutes. All outliers greater than three standard deviations were removed because time data is notoriously noisy (and the results are reported here both with outliers removed and with outliers intact).

Additional measures. In the last two texts they received, students were asked two questions as attention checks: how long they would be working at the library during this study session and the school subject they had told us about as a manipulation check. If students responded to either of the attention questions, their data was used in the analysis. The study results effectively do not change if I use the respondents who responded only to the school subject manipulation check (i.e., if I exclude the thirty respondents who responded to the time question but not to the subject question).[12] However, because

[12] The only minor difference is that for the planned study time in the library, using fewer responses demonstrated not only that the flimsy framework stuck students expected to spend more time at the library than the no framework stuck students, but additionally that flimsy framework stuck students reported

including either attention check allows a much broader range of respondents (21% more respondents), I used the broader range.

The final variable measured was goal commitment at several times during the study. The reason I measured goal commitment was to be able to address the concern about goal commitment rendering goal setting an ineffective manipulation for those potentially affected by low goal commitment, i.e. the stuck students. In fact, analysis shows that there were no differences in goal commitment between framework conditions for the stuck students: this suggests that any differences in effort for stuck students are not due to goal commitment differences. Hence, this variable is not discussed further.[13]

Results

Degree of progress manipulation check. Confirming that students in the most-progress and most-stuck conditions chose school subjects that matched the manipulation, the most-progress group rated themselves higher ($M = 1.91$, $SD = 0.96$) on the degree of making progress on the chosen school subject as compared to the most-stuck group ($M = 0.07$, $SD = 1.67$); $t(170) = 9.00$, $p < .001$. The most-stuck group reported an average near 0, corresponding to neutral on the scale, however, these are university students who are likely not all failing their most-stuck school subjects, and hence reporting a neutral result as opposed to "-3 fairly stuck" is likely more representative of their situation.

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expecting to spend more time than the goals framework stuck students. This is not a crucial result for the purposes of this study, especially as that measure was an unexpected auxiliary finding in any case.

[13] There were two minor goal commitment differences in the data, and both do not address our argument about stuck students and goal setting. One was a short-lived main effect difference such the stuck students had greater goal commitment that did the progress students during the second of four text responses: because nothing like this occurred for the other three texting times, this is likely an arbitrary chance result. The other was a difference in the end-of-survey goal commitment measure such that only for the most-progress students, goal commitment was higher for the goals framework than for either the flimsy framework or for no framework. Hollenbeck and Klein (1987) suggest that the process of setting goals (i.e., experiencing the goals framework) can affect a person's concept of volition and being free to engage in a behavior, which in turn can affect goal commitment; perhaps this is what occurred here for the most-progress students when goal commitment rose in the goals framework manipulation.

Time spent working on the focal subject. An analysis of variance was conducted and an interaction was found: $F(2, 154) = 3.65$, $p = .028$ (see Figure 7). An analysis of the simple effects reveals that the most-stuck condition drives the interaction ($F(2, 154) = 2.64$, $p = .075$) such that for the most-stuck condition, students studied marginally more in the flimsy framework condition ($M = 2.10$, $SD = 1.68$) than in the no framework condition ($M = 1.33$, $SD = 1.49$); $t(53) = -1.75$, $p = .085$. Additionally, students studied marginally more in the flimsy framework condition than in the goals framework condition ($M = 1.19$, $SD = 1.50$); $t(50) = 1.99$, $p = .052$.

As predicted by the past thirty years of goal-setting theory, for those students who had written about their most-progress subjects, the goals framework led to marginally more studying ($M = 2.12$, $SD = 1.39$) than did the flimsy framework ($M = 1.40$, $SD = 1.59$); $t(53) = -1.77$, $p = .083$.

Insert Figure 7 about here

Planned study time. An analysis of variance was conducted with planned future study time as the dependent variable, and no interaction or main effects were found. However, a t-test analysis of pair-wise comparisons within the most-stuck and the most-progress conditions revealed one significant comparison. For the most-stuck condition, the planned future study time for the flimsy framework ($M = 3.27$ hours, $SD = 1.62$) was greater than for no framework ($M = 2.24$ hours, $SD = 1.61$); $t(54) = -2.36$, $p = .022$. See Figure 8.

Insert Figure 8 about here

Discussion

In summary, Study 2 showed that flimsy frameworks induce stuck students to study marginally more over the following hour, compared to no framework and compared to the gold standard of manipulations, the goals framework. For the students who were making progress on their school subjects, as would be predicted by goal-setting theory, the goals framework induced these students to study marginally more over the making-progress students that used the flimsy framework.

Consider the results of Study 1—that the goals framework was rated higher on expected effectiveness than the flimsy framework. However, in this study the goals framework was not more effective than the flimsy framework for stuck students. Also consider that following the instructions of the goals framework was rated as more overwhelming than following the instructions of the flimsy framework. A picture starts to emerge of a powerful but perhaps overpowering framework. In this study in particular, it is not farfetched to imagine the thinking of a stuck student when instructed to write an attainable but difficult and specific goal for the remaining two weeks of the quarter. If one is already stuck on the school subject, certainly this instruction could appear even more overwhelming. The goals literature described previously indicated that goal setting can become less effective or ineffective when the limits of ability are reached, when goal commitment is low, or when the individual feels threatened. Additionally, in the context of Study 2, it may be that writing down the goal itself can make the stuck student feel

even worse. Earley, Connolly, and Ekegren (1989) find that goal setting may backfire if the goal makes people too anxious to search for strategies in a systematic way. On the whole, Study 2 provides an example of goal setting as an effective and highly-lauded framework that may not work for stuck students for a variety of possible reasons mainly related to the concomitants of being stuck: possible threat, anxiety, and leaning up against one's limits.

There was an unexpected and pleasant trend such that among the most-stuck students, those who had used the flimsy framework reported that they planned to spend more time in the library than did the no framework students—in fact, about an hour longer (3.27 hours over 2.24 hours).

This study has several limitations. First of all, the study was conducted with undergraduate students at a time of pressure, a couple of weeks before their final exams. For future studies, I would expand the participants beyond undergraduates, and invite a broader range of projects that would extend in scope beyond schoolwork. I would also investigate whether the stuck-flimsy effect holds beyond a one-hour duration.

Secondly, the study was limited in terms of the conclusions I can draw based on the number of times that students texted back that they were working on the subject I asked them about. I propose that measuring the number of times out of a possible four times that participants could be working on a school subject is indicative of the effort that students are putting towards that school subject. However, it may be the case that stuck students under a flimsy framework over-report the number of times they are working on the subject I asked them about. I do not have any reason to believe that individuals reported differentially between conditions, but in future studies, I ask questions about

how much time individuals spent and whether they took an action as opposed to asking about the frequency of an action at various times.

A final limitation is that the control condition in Study 2 asked participants to describe making a sandwich and then to list the sandwiches on the menu board of a sandwich shop. However, in this control condition, the participant does not think about the project at hand; this control condition provides a distraction to thinking about the school subject. In future studies, I would include a control that makes participants think about the project they are considering working on; I would just make sure that there is no inherent framework in the control condition.

Study 3: The Weekend Projects Study

Does Study 2 replicate over a longer duration?

Is the effect of the flimsy framework due simply to stuck individuals taking steps?

In Study 3, I wanted to replicate and extend the results of Study 2. In Study 2, the effect was demonstrated over the course of one hour of texting with students. In Study 3, I conducted a study on weekend projects, projects on which I could give individuals the longer duration of the entire day of Sunday during which to attend to these projects, weekend projects that could include working on home repair, weeding a garden, or making a quilt. The goal of Study 3 was to demonstrate that for those individuals that are considering projects on which they are stuck, the flimsy framework would lead them to spend more time on their projects than would no framework. All of the participants in Study 3 were in the stuck condition and not in the making progress condition.

I also sought to test one possible reason that the flimsy framework may be effective for stuck individuals. It could be that the flimsy framework leads stuck individuals to examine their stuck projects through the lens of taking steps to make a sandwich. Thus, a natural critique would be that any steps condition should cause the same effect, not only a flimsy framework.

Study 3 thus included three conditions. One was the ***flimsy framework*** of describing the process of making a sandwich, and then relating that process to tackling moving forward on their project, similar to that in Study 2 (see Appendix J for the exact wording of all study manipulations). A second was the ***steps framework***, in which participants were instructed to describe the steps they could take to work on their project. The third was the control condition: this was the ***framework-absent control*** condition, in which participants were instructed to describe any aspect of their project. This control condition improved upon the control condition in Study 2, in which participants described making a sandwich and listed the sandwiches on the menu board of a sandwich shop, because this control allowed participants to focus on their projects rather than on a topic separate from their projects.

Recall from Study 1b that the flimsy framework was rated as having lower expected effectiveness as compared to the framework-absent control and as compared to the steps framework. However, I argue that for stuck individuals, actual effectiveness should be higher under the flimsy framework. If the entire effect of the flimsy framework is in that it allows participants to think through the steps of their stuck project, then the steps framework of this study should result in participants spending the same amount of time on their projects as they would in the flimsy framework. If, however, the

flimsy framework led stuck individuals to spend more time on their weekend projects than did the steps framework, then it is not only via steps that the flimsy framework produces its results.

Method

Participants. Amazon.com's Mechanical Turk workers participated in this study in exchange for $2. Participants were limited to those in the U.S. who had a 95% approval rating on Mechanical Turk. Two hundred and seventy-eight participants completed both the first survey and sent a follow-up email on the following day. I have provided the full set of variables collected and details on data cleaning in Appendix G.

Procedure. Participants were told that the study would be about working on a project for the weekend. Participants took the first part of the survey, which was expected to take about seven minutes, on Saturday evening, and were instructed to email the answer to one question by Sunday evening at 5pm. In the first part of the survey, participants described a project that they felt stuck on that they could be working on during the weekend. Then, they filled in one of three framework manipulations: the framework-absent control condition, the steps framework, or the flimsy framework.

At the end of the first survey, the participants were instructed to email the response to this question by 5pm of the following day: "How many hours and/or minutes did you work on your project on Sunday, up until 5pm?" We chose 5pm in order to have a specific time for participants so that we could influence having a greater response rate because individuals would have a specific triggering time for sending the email (Gollwitzer, 1993) than if we had just asked them to email us the following evening.

Measures.

Degree of progress. I used a one-item degree of progress measure (1 = Very much stuck, 7 = Very much making progress).

Amount of time spent on the weekend project on Saturday (before the manipulations). Participants provided the number of hours and/or minutes that they had already worked on their weekend project prior to taking the survey, which was available on Saturday evening.

Amount of time spent on the weekend project on Sunday (after the manipulations). Participants provided the number of hours and/or minutes that they worked on project on Sunday until about 5pm.

Repeated measure of time spent, original data. The dependent measure was a repeated measure of how long participants spent working on their weekend project, in hours.

Repeated measure of time spent, ranked data. In his work on improving statistical analyses, Wright (2003) suggests that ranking could be a useful way to evaluate data, but that to be conservative, the same analysis should be conducted both with ranked values and with the original values, which I do in the previous measure and in this one. I rank ordered the data because time estimates are notoriously noisy. Hence, to transform the more noisy information into values that can be compared among each other, I rank ordered the results on each day: the repeated measure was the Saturday rank followed by the Sunday rank. The longest time spent was assigned the highest ranking, and when times were equal, they were assigned the mean ranking.

Repeated measure of time spent, original data with outliers removed. Finally, to be sure that the effect for the analysis with the original data was not driven primarily by outliers, I conducted the same analysis as the original repeated measures analysis but removed the three-standard-deviation outliers from each of the Saturday and Sunday responses.

Results

Degree of progress. There were no differences between conditions on degree of progress of the project: flimsy framework (M = 2.40, SD = 1.34), steps framework (M = 2.54, SD = 1.40), and framework-absent control (M = 2.43, SD = 1.41); $F(2, 275) = .28$, $p = .754$, *ns*.

All the means by condition for the following measures of the dependent variable are summarized in Table 5.

Insert Table 5 about here

Repeated measure of time spent, original data. I ran a repeated measures analysis of variance on the time spent, and there was an omnibus interaction $F(2, 275) = 3.02$, $p = .050$. During the weekend, the flimsy framework increased by 8% in amount of time spent (M = 1.44, SD = 1.71 to M = 1.56, SD = 1.73). This was significantly better than the 2% increase by the framework-absent control (M = 1.04, SD = 1.35 to M = 1.05, SD = 1.65); $F(1, 182) = 4.96$, $p = .027$. Additionally, the flimsy framework performed marginally better than the 15% decrease by the steps frameworks (M = 1.21, SD = 1.79 to M = 1.03, SD = 1.31); $F(1, 187) = 3.52$, $p = .062$. See Figure 9a.

Repeated measure of time spent, ranked data. I ran a repeated measures analysis of variance on the ranked repeated measure of time spent, and there was a marginal omnibus interaction $F(2, 275) = 2.78$, $p = .058$. During the weekend, the flimsy framework increased by 6% in rank ($M = 147.85$, $SD = 83.25$ to $M = 156.44$, $SD = 79.44$). This was significantly better than the 6% decrease by the framework-absent control ($M = 134.46$, $SD = 75.15$ to $M = 126.27$, $SD = 77.97$); $F(1,182) = 4.93$, $p = .028$. Additionally, the flimsy framework performed marginally better than the 1% decrease by the steps frameworks ($M = 135.84$, $SD = 77.78$ to $M = 134.90$, $SD = 73.14$); $F(1,187) = 3.11$, $p = .079$. See Figure 9b.

Insert Figures 9a, 9b, and 9c about here

Repeated measure of time spent, original data with outliers removed. In this analysis, I removed the outliers in order to investigate whether the above result for the original data was driven by those participants that spent longer than about six hours each day (longer than 6.15 on Saturday and longer than 5.96 on Sunday). I ran a repeated measures analysis of variance on the time spent, and there was nearly a marginal omnibus interaction $F(2, 260) = 2.32$, $p = .100$. During the weekend, the flimsy framework increased by 6% in amount of time spent ($M = 1.17$ hours, $SD = 1.40$ to $M = 1.24$, $SD = 1.32$). This was significantly better than the 9% decrease by the framework-absent control ($M = .91$, $SD = 1.18$ to $M = .83$, $SD = 1.29$); $F(1, 171) = 4.56$, $p = .034$. While there was a trend of the flimsy framework contributing to more time spent than the steps framework, statistically the flimsy framework did not perform any better than the 6%

decrease by the steps frameworks (M = 1.00, SD = 1.43 to M = .14, SD = 1.19); $F(1, 176) = 2.04$, p = .155, *ns*. See Figure 9c.

Discussion

Study 3 extended the findings of Study 2. The library texting study, Study 2, demonstrated a short-term effect of the flimsy framework on students working on that school subject on which they were the most stuck. Study 3 demonstrated that the effect holds in a different domain (weekend projects) and for a longer period of time (an entire day). The results held, or at worse trended, regardless of the method of analysis used – the original time measures, the rank of time measures, or the original times measures removing all outliers.

More importantly, this study nearly rules out the argument that the reason that the flimsy framework is effective is because it helps stuck individuals find a series of steps to take.

One limitation of the concrete wording of the steps framework is that it is not a parallel structure to the flimsy framework. The current steps framework asks participants what steps they could take. However, the flimsy framework is structured more similarly to analogical problem-solving in that it first asks about the process of making a sandwich, and then asks the participant in what ways the project could be related to that process. Hence, in the next study, I wanted to be certain that steps or process does not do as well as the flimsy framework by testing a process framework that contains more analogical-problem-solving.

Study 4: Four possible explanations for the efficacy of flimsy frameworks

Do flimsy frameworks lead stuck individuals to take action because they change one of the following: expectations, motivation, ability to create structure for the projects, or the feeling of being overwhelmed?

In Study 4, I measured several possible explanations for the effect of flimsy frameworks on stuck individuals. I used an in-the-moment dependent variable, that of whether an individual takes an optional action during the course of the online study. After the opportunity to take an action, participants answered questions that addressed several explanations for them having taken or not taken the optional action.

Studies 1 through 3 already rule out several explanations. One might think that stuck individuals would be motivated by frameworks that are expected to work (higher expected effectiveness) or that have higher credibility, but, in fact, the opposite is true. While the goals framework was rated higher in expected effectiveness and higher in credibility (Study 1a), for students working on their most-stuck school subjects, the goals framework led to less time spent studying the most-stuck subject than did the flimsy framework (Study 2). Similarly, the steps framework of asking participants what steps they could take on their projects was rated higher in expected effectiveness and in credibility than the flimsy framework (Study 1b), but the steps framework was less helpful than the flimsy framework in leading stuck individuals to spend more time on their weekend projects (Study 3). As a final piece of data in this argument, the framework-absent control was rated higher in expected effectiveness and credibility than was the flimsy framework (Studies 1a and 1b), but led to stuck individuals spending less time working on their schoolwork (Study 2) or weekend project (Study 3). The above

comparisons illustrate probable evidence that neither credibility nor expected effectiveness leads stuck individuals to take action.

Also ruled out in the previous studies is the explanation that flimsy frameworks are effective for stuck individuals only because flimsy frameworks break the stuck project into steps. It is true that an aspect of the particular flimsy framework used in these studies is that it reminds participants of the process and steps of making a sandwich. Study 3 demonstrated, however, that steps by themselves are not the aspect of the flimsy framework that is causing stuck individuals to put more time into their projects. In Study 4 (in addition to the framework-absent control and the flimsy framework), I added the general process framework to address the limitation of the steps framework not having been structured in an analogical problem-solving manner. The addition of this framework should put to rest doubts that the flimsy framework depends both on taking steps and on a mental comparison of steps to one's own project (i.e. similar to analogical problem-solving). Thus, the general process framework in Study 4 is stronger as a comparison condition because it not only includes the steps aspect, but also the analogical problem-solving aspect. If the general process framework leads to less action than does the flimsy framework, then this suggests that process and analogy together do not explain the effect of the flimsy framework. If there is no difference between the general process framework and the flimsy framework, then this would indicate that an aspect of analogical problem-solving could contribute to the overall effect of flimsy frameworks on stuck individuals.

To summarize the preceding paragraphs, in the previous studies in which I indirectly included components of credibility, expected effectiveness, and steps as

explanations for the effect, these explanations failed to explain the reason that flimsy frameworks lead stuck individuals to action. The additional component of Study 4 is that I methodically examined four reasons for the effect of flimsy frameworks on stuck individuals: expectations, motivation, ability to create structure for the projects, and the feeling of being overwhelmed. The first possibility is that the flimsy framework changes expectancies of success for stuck individuals. Note that the expectancy of success is different from the expectation of effectiveness already ruled out in the combination of Studies 1-3. The expectancy of success refers to the likelihood of achieving success or completion whereas expected effectiveness is a measure that does not center on likelihood or probability, but rather on a evaluation of the helpfulness of the framework in leading to action-taking without reference to probability. Expectancy theory as developed by Vroom (1964) and expectancy-value theory as defined by Fishbein and Ajzen (1975) both argue that the expectation of greater and better results may motivate individuals to take one course of action over another. Expectancy-value theory adds the argument that when individuals place greater value on one course of action over another, this could lead them to take that course of action. It is possible that flimsy frameworks simply prompt stuck individuals to have a greater belief in expectancy of success and a greater belief in the importance of their task. Typically, expectancy is measured by asking about the likelihood and probability of achieving certain results, and value is measured by beliefs of importance and worth. I measured these variables in this study.

Secondly, one might think that a flimsy framework—as opposed to more substantial frameworks—leads stuck individuals to desire more structure in their projects, and this desire for structure may be alleviated by taking more action on their projects.

This is a fairly complex explanation because it involves a series of assumptions. To preface the discussion of structure, the need for structure refers to both a state and a trait associated with needing to make sense of situations relatively more quickly or more completely than other individuals. The need for structure is a subset of the need for cognitive closure (NFC), which refers to a desire for firm answers and an aversion to ambiguity (Kruglanki & Webster, 1996). The series of assumptions necessary to propose a need for structure as an explanation starts with the first assumption that a flimsy framework makes those stuck individuals who are high in need for structure or NFC perceive more ambiguity than does a more substantial framework or no framework. The second assumption is that these differential perceptions leads to differential action taking.

To support the first assumption that a flimsy framework makes those stuck individuals high in NFC perceive more ambiguity, Ford & Kruglanski (1995) demonstrate that the need for cognitive closure is associated with a degree of ambiguity (such that individuals high in NFC are more likely to remove ambiguity by characterizing ambiguous targets in terms of primed traits). I would propose that both extremes—no framework and substantial frameworks—have low ambiguity. The framework-absent condition is designed to minimize the difference between what the individual experienced before the experiment and during the experiment, hence there is no reason to expect a change in ambiguity. The substantial frameworks tested are so well-known and powerful (goals framework and steps framework) that there is no research that I know of that suggests that either of these frameworks should be associated with ambiguity; in fact, if anything, goal setting theory by definition argues for specific (i.e. non-ambiguous) and challenging goals (Locke & Latham, 1990; 2002; 2006). The operationalization of both

the goals framework (setting a specific and difficult, yet attainable goal) and the steps framework (describing the steps the participant could take) was intended to evoke specific and concrete thinking. I do not have a manipulation check of whether participants in fact perceived these frameworks to be more concrete, and thus less ambiguous. The flimsy framework, on the other hand, was not operationalized to favor either concrete or ambiguous interpretation, and it may be that the flimsy framework induces more ambiguous thinking in stuck individuals.

To support the second assumption that different perceptions of the framework manipulations can lead to different degrees of action taking, Kruglanski, Webster, and Klein (1993) demonstrate that when the situation allows such action, a high need for structure may lead individuals to want to take an action. Kuglanski et al. (1993) created a situation in which a participant took on the role of a juror who needed to discuss a case with another juror. When the participant had a higher need for closure (either because of a noisy printer or as a rating on the NFC scale), he expressed a greater desire to come to agreement with the other juror and to attain closure via consensus than under low need for closure. It may be that when stuck individuals experience flimsy frameworks, they work on their projects more because they do not like the tension of project non-completion. When individuals feel a tension between the degree of completion achieved and the degree desired, they may also have associated uncomfortable feelings such as threat or being overwhelmed. In this way, flimsy frameworks—but not the other conditions—may help stuck individuals reach closure and take action towards project completion for the purpose of decreasing that threatening tension. This may be supported, in part, by the results of Studies 1a and 1b, which illustrated that there is a

lower feeling of being overwhelmed for the flimsy framework, as compared to the substantial frameworks and to no framework. Hence, in Study 4, I tested a need for structure as a possibly explanation for the nuanced argument that flimsy frameworks—and not the other framework condition—lead stuck individuals to take more action.

A third possible explanation tested in Study 4 is motivation. Stuck individuals may be motivated by a flimsy framework. Flimsy frameworks may be seen as more fun and more interesting, and they may intrigue stuck individuals into wanting to experiment with them precisely because they do not seem as if they will work. Intrinsic motivation theory postulates that it is the individual's enjoyment of and interest in the project that prompts an individual to take action (e.g. Ryan & Deci, 2000). Because flimsy frameworks look so insubstantial compared to the other framework conditions (see Studies 1a and 1b), stuck individuals may have greater motivation to and a renewed interest in trying them.

The final explanation that I tested in the current study is the fact that flimsy frameworks seem easy and approachable. This approachability may help stuck individuals overcome their feeling of being overwhelmed by a difficult task. In Studies 1a and 1b, the flimsy framework was rated appreciably lower on being overwhelming than no framework or the substantial frameworks tested. In research on threat-reduction (Staw et al., 1981; Major & O'Brien, 2005), involuntary anxiety and stress responses are common. Hence, if a flimsy framework can decrease such responses to thinking about the project on which one is stuck, then it may disinhibit action on that project.

Method

Participants. Amazon.com's Mechanical Turk workers participated in this study in exchange for $1.50. Participants were limited to those in the U.S. who had a 95% approval rating on Mechanical Turk. Three hundred and seventy-one participants completed the survey, but two participants did not list a valid project and two participants reported that they may have taken a similar survey before; all four were removed from the analysis. Hence, the data from 367 participants was used (56.7% female, .3% not reporting; age $M = 33.60$, $SD = 11.80$). I have provided the full set of variables collected and details on data cleaning in Appendix H.

Procedure. Participants were told that the study would be about working on a project, and that it would take approximately fifteen minutes. As in Study 3, participants described a project (either a project on which they felt stuck or a project on which they felt that they were making progress). Then, participants followed the instructions of the framework manipulation. The framework manipulations were framework-absent control, the flimsy framework, and the general process framework. The ***framework-absent control*** and the ***flimsy framework*** were the same as in Study 3. The ***general process framework*** condition was constructed to be structurally similar to the flimsy framework: participants were instructed to describe the process of working on a project in general, and then to consider how that description could help them work on their project.

Next, the dependent variable was measured: participants were informed that they had the opportunity to take one action towards moving forward on their project; they were instructed that taking the action was optional, and that they could advance to the following screen whether they took an action or not. On the following screen, they were

asked whether or not they had taken an action and asked to describe the action. As examples, some of actions taken during the study were: "I took an old, ugly shirt I no longer wear and threw it out," "I watered my garden," and "I sent a quick email confirming a meeting with a technical specialist next week." Finally, potential mediation variables were measured as well as demographics.

Measures.

Degree of progress manipulation check. As in previous studies, a one-item degree of progress manipulation check was used to measure the degree of making progress (1 = Very much stuck, 7 = Very much making progress).

Dependent variable of taking an action. The dependent variable was whether the participant took or did not take an action during the study.

Potential mediators.

A principal components factor analysis was conducted to identify the distinct factors. Initially, the factorability of the items was examined: the Kaiser-Meyer-Olkin measure of sampling adequacy was .86, above the recommended value of .6, and Bartlett's test of sphericity was significant (χ^2 (276) = 4780.05, $p < .001$).

A varimax rotation was implemented for eigen values of greater than one, and the scree plot was examined. A six-factor solution emerged that explained 69% of the variance. The six factors were need for structure (explaining 30% of the variance), expectancy (13%), value (8%), motivation (6%), and two factors representing thoughts about taking the action: that the action takes a small amount of time and resources (7%) and that the action is overwhelming (4%). Because the scree plot visually leveled off at seven factors, I additionally examined a seven-factor solution with varimax rotation,

which explained 73% of the variance. The additional factor separated the two factors about taking an action into three factors: that it is a small effort to take the action (cognition), that the participant doesn't have the time or resources to take the action (cognition), and that the action is overwhelming (emotion). The seven-factor solution was chosen as more representative of the underlying effect for two reasons: because at face value, it more accurately separated items referring to emotions and those referring to thoughts, and because the sixth and seventh factors explain similar amounts of variance (about 4% each). Of the three factors, one was pertinent and interesting theoretically—the feeling of being overwhelmed—and thus it was used in the following analyses.[14]

Thus the mediators tested were four factors for expectancy-value, motivation, need for structure, and being overwhelmed. Each factor was composed of items with factor loadings over .5. All factors and Cronbach's alphas along with their corresponding items are listed in Appendix I. Expectancy (Cronbach's $\alpha = .87$) included statements such as "Reaching the end of my project seems achievable." Value ($\alpha = .83$) was measured with statements such as "This project is important to me." Motivation ($\alpha = .87$) was measured with items including "I have a renewed interest in my project." The need for structure ($\alpha = .89$) was measured with items such as "I feel that structuring my day-to-day approach to my project can make me more productive." The measure of being overwhelmed averaged responses to the two items of "Taking this action could feel overwhelming" and "Taking an action right now is intimidating" ($r = .64$, $p < .001$).

[14] The remaining two factors were participants' thoughts about the low amount of effort used and the high amount of resources needed to take an action. I did not have a theoretical prediction about either low effort or high resources as explanations for the effect. To make sure that removing these factors would not result in an oversight, I examined interaction effects and did not find any for either factor, suggesting that these were not mediators. For the purpose of comprehensiveness, I include the means and reliabilities of these factors in Appendix H, and they are not included in further analysis.

Intention. Intention to take action was measured and expected to support the results of the behavioral dependent variable. Intention and behavior are expected to be correlated according to several areas in social psychology, in particular the theory of reasoned action and the theory of planned behavior. The theory of reasoned action (cf. Madden, Ellen, & Ajzen, 1992) views intentions as both the proximal predictors of behavior and the mediator between behavior and independent variables such as personality or attitudes. Similarly, the theory of planned behavior (Ajzen, 1985) treats intentions as the best possible predictor behavior. In a meta-analysis of 10 meta-analyses with a total sample size of over 82,000 responses, the intention and behavior correlation was 0.53 with a 95% confidence interval from 0.52 to 0.53 (Sheeran, 2002). While this common belief about the relationship between behavior and intention holds in this study, it holds at a much lower level than in the meta-analyses; for a 5-item measure of the intention to take action in the next few days ($\alpha = .85$), $r = .142$, $p = .007$, $N = 367$. Additionally, as demonstrated by an analysis of variance, the only difference on intention found was a main effect difference for the making progress ($M = 4.92$, $SD = 1.20$), as compared to the stuck condition ($M = 4.39$, $SD = 1.58$), on the intention to take action over the next few days (F (1, 361) = 12.74, $p < .001$). Because no additional differences among intentions between conditions were found, I do not address this variable further.

Results

Degree of progress manipulation check. The participants in the stuck conditions reported being more stuck ($M = 2.59$, $SD = 1.41$) than did the participants in the making progress conditions ($M = 5.96$, $SD = .74$); $F(1, 361) = 842.92$, $p < .001$). While there was a main effect of framework ($F(2, 361) = 3.02$, $p = .040$) driven by the stuck-general

process framework individuals reporting being more stuck (M = 2.29, SD = 1.20) than the stuck-flimsy framework individuals (M = 2.86, SD = 1.50); $t(124) = -2.36$, $p = .020$, this would not be a problem in further analysis because these are not the two conditions of interest in the mediation analysis. There was no difference on the manipulation check between the two conditions of most interest, stuck-framework-absent control (M = 2.65, SD = 1.48) and stuck-flimsy framework; $t(112) = -.75$, $p = .456$, *ns*.

Dependent variable. For the making progress conditions, there were no differences between the percentage of people that reported that they took an action. Respectively, 42.6%, 31.7%, and 39.7% of participants responded that they had taken an action for the framework-absent control, flimsy framework, and general process framework. On the other hand, for the stuck conditions, there was a marginally significant difference between framework-absent control (23.5% took an action) and the flimsy framework (38.1%); $\chi^2(1, N=114) = 2.77$, $p = .096$. The general process framework (31.7%) did not differ from either framework-absent control or the flimsy framework (see Figure 10).

Insert Figure 10 about here

Potential mediators. Before engaging in a mediation analysis, the four potential mediators (expectancy-value, need for structure, motivation, and being overwhelmed) were evaluated first for whether the six conditions differed on these metrics. All means, standard deviations, and correlations are in Table 6.

Insert Table 6 about here

In an analysis of variance for expectancy, there was a main effect such that the making progress conditions (M = 6.41, SD = .68) had higher expectancies about the project's probability of success than did the stuck conditions (M = 5.55, SD = 1.22); F(1, 361) = 71.80, p < .001, and there was no interaction effect. For value, there was the same main effect such that that the making progress conditions (M = 6.33, SD = .72) believed that their projects were more valuable and more important than did the stuck conditions (M = 6.13, SD = .96); F(1, 361) = 5.14, p = .024, and no interaction effect. For motivation, there was similarly no interaction effect and only a main effect such that the making progress conditions (M = 6.11, SD = .89) reported being more motivated than the stuck conditions (M = 5.30, SD = 1.46); F(1, 361) = 41.49, p < .001.

For the need for structure, there was a marginal interaction (F(2, 361) = 2.51, p = .083) that demonstrated that the simple effect was significant for the stuck conditions F(2, 361) = 6.46, p = .002. Within the stuck conditions, need for structure was higher for the flimsy framework (M = 5.84, SD = .97) than it was for framework-absent control (M = 5.46, SD = 1.05); t(112) = -2.02, p = .046. Additionally, the need for structure was higher for the general process framework (M = 6.02, SD = .89) than it was for framework-absent control; t(112) = -3.07, p = .003. Because the differences in need for structure paralleled those in the dependent variable of the willingness to take action, the need for structure became a candidate for a potential mediator.

I conducted a bootstrapping analysis to estimate the direct and indirect effects of the mediation (Hayes & Preacher, 2013; Preacher & Hayes, 2004). The analysis used 5,000 bootstrap samples with bias-corrected confidence intervals and I report unstandardized coefficients throughout below. The six experimental conditions were dummy coded as five variables with the reference condition being stuck-framework-absent control; each dummy variable was coded as 0 for all other conditions and 1 for the condition in question. I tested the need for structure factor as the mediator. First, in a logistic regression including all five dummy-coded variables, there is a direct effect of the stuck-flimsy framework (as compared to stuck-framework-absent control) on the willingness to take action in a logistic regression ($\beta = .69$, $p = .099$). Next, according to the bootstrapping analysis, there is a direct effect of the stuck-flimsy framework (as compared to stuck-framework-absent control) on the need for structure ($\beta = .38$, $t = 2.44$, $p = .015$). However, when the need for structure was entered into the equation between the independent variable and the dependent variable of willingness to take an action, no evidence of mediation was found. Although the effect of the stuck-flimsy framework (as compared to stuck-framework-absent control) on the willingness to take action became not significant ($\beta = .61$, $Z = 1.43$, $p = .153$, *ns*), the indirect effect included zero in the 95% confidence interval and therefore did not show evidence of mediation (confidence interval: [-.009, 3.90]).

Finally, the feeling of being overwhelmed demonstrated an interaction effect ($F(2, 361) = 4.30$, $p = .014$) such that the simple effect was significant for the stuck conditions: $F(2, 361) = 3.64$ $p = .027$. Within the stuck conditions, being overwhelmed was marginally lower for the flimsy framework ($M = 3.10$, $SD = 1.83$) than it was for

framework-absent control (M = 3.69, SD = 1.63); $t(112) = 1.80$, $p = .075$. Additionally, being overwhelmed was lower for the general process framework (M = 2.90, SD = 1.77) than it was for framework-absent control; $t(112) = 2.45$, $p = .016$. Because the differences in being overwhelmed appeared to parallel those in the dependent variable of the willingness to take action, being overwhelmed became a candidate for a potential mediator.

I conducted a bootstrapping analysis to estimate the direct and indirect effects of the mediation similar to the method above for need for structure. I tested being overwhelmed as the mediator and found evidence for mediation. First, in a logistic regression including all five dummy-coded variables, there is a direct effect of the stuck-flimsy framework (as compared to stuck-framework-absent control) on the willingness to take action in a logistic regression ($\beta = .69$, $p = .099$). Next, according to the bootstrapping analysis, there is a direct effect of the stuck-flimsy framework (as compared to stuck-framework-absent control) on being overwhelmed ($\beta = -.59$, $t = -1.97$, $p = .050$). Additionally, when being overwhelmed was entered into the equation between the independent variable and the dependent variable of taking action, the effect of the stuck-flimsy framework (as compared to stuck-framework-absent control) on the willingness to take action became not significant ($\beta = .58$, $Z = 1.35$, $p = .176$), and the indirect effect of being overwhelmed became significant ($\beta = -.22$, $t = -2.90$, $p = .004$). Furthermore, the 95% confidence interval did not include zero and therefore showed evidence of mediation (confidence interval: [.004, 3.58]); see Figure 11.

Insert Figure 11 about here

Discussion

Study 4 again provides evidence—this time on an immediate dependent variable, that of the optional willingness to take action on a project in the moment—that for stuck individuals, the flimsy framework increases the percentage of those respondents that take action (38.1%) as compared to framework-absent control (23.5%). As in the library texting study, Study 2, there were no differences for individuals that were making progress between the framework-absent control and the flimsy framework, such that making progress respondents took action at approximately the same rate for all three frameworks in Study 4.

Finally, Study 4 provides evidence of mediation. In this study, I rule out three potential mediators (expectancy-value theory, the need for structure, and motivation) as well as two potential mediators of thought processes (that the action is low effort and that the participant does not have resources to take the action). While the need for structure is higher for the stuck-flimsy framework condition, as compared to for the stuck-framework-absent control condition, it was not found to mediate the interaction.

This research demonstrates that being overwhelmed mediates the relationship between the stuck-framework-absent control and the stuck-flimsy framework conditions. Specifically, when stuck individuals are able to move from using framework-absent control to using a flimsy framework, their sense of being overwhelmed diminishes and this leads to their increased willingness to take action.

General Discussion

If one were to ask a reasonable person, "Should I ever choose a seemingly inferior product?" the emphatic answer would be "No." However, in the case of flimsy frameworks, the better recommendation may be "Yes." If a framework appears flimsy and ineffective a priori, one might expect that it would be not useful. However, the trifecta of having a project to complete, being stuck on it, and experiencing a flimsy framework leads to individuals doing more to move their project forward. Feeling stuck is an instantiation of being overwhelmed. Perhaps there are other overwhelming or threatening situations in which a flimsy framework could also add value even though it might not appear to a priori.

Taken together, the studies in this research demonstrate several conclusions. First, a flimsy framework leads stuck individuals to take more action that does no framework. I demonstrated this for three distinct dependent variables, listed here in order from most immediate to most long-term: an immediate action towards moving forward on one's project (Study 4), a one-hour study session (Study 2), and a one-day-long "weekend" project (Study 3).

Second, a flimsy framework often leads stuck individuals to take more action than a more substantial framework. In the library texting study (Study 2), the goals framework did not lead those in the most-stuck students to spend any longer studying than did no framework; in fact, the flimsy framework led to students making more effort than did the goals framework. In the weekend projects study (Study 3), for stuck individuals, the steps framework did not lead to any more time spent on the weekend project than did the framework-absent control; in fact, the flimsy framework led to more time spent on the

project than did the steps framework. In the online-action study (Study 4), for stuck individuals, the general process framework did not lead to any greater percentage of individuals taking an action than did the framework-absent control. However, unlike in Studies 2 and 3, the general process framework did not lead to a *lower* percentage of individuals taking an action as compared to the flimsy framework; i.e., the flimsy framework and general process framework for stuck individuals led to about the same percentage of individuals taking an action. Hence, for stuck individuals, the recommendation based on the results from Studies 2 and 3 would be to use a flimsy framework as opposed to a more substantial framework.

Third, people discount flimsy frameworks. According to Studies 1a and 1b, individuals do not expect flimsy frameworks to be effective, as compared to the framework-absent control or to any of the following frameworks: goals, general process, or steps. This result implies that if individuals are evaluating frameworks before having experienced the frameworks, individuals are likely to discount and discard flimsy frameworks. In doing so, they could be disposing of helpful techniques that could lead them to taking action. Six factors were measured in Studies 1a and 1b—effectiveness, flimsiness, credibility, familiarity, interest in learning more, and being overwhelmed. On almost all the factors, the flimsy framework differed from the other conditions. One takeaway from comparing Studies 1a and 1b to Studies 2, 3, and 4 is that people are not enacting their expectations about frameworks.

Fourth, the mechanism by which a flimsy framework, in contrast to a no-framework control, leads stuck individuals to take action is that it diminishes the feeling of being overwhelmed (Study 4). Consider the results of Studies 1a and 1b alongside the

mediation found in Study 4. In Studies 1a and 1b, ironically, individuals were not able to accurately predict the effectiveness of flimsy frameworks, but they were able to accurately predict how overwhelmed they would feel after using the framework, in that individuals predicted that using the flimsy framework would be less overwhelming than using other frameworks. This prediction in light of the mediation result of Study 4 suggests that individuals are accurate about predicting their sense of being overwhelmed. All in all, stuck individuals appear to experience the behavior change as less overwhelming when using the flimsy framework.

There appears to be an actor-observer difference between the observer's framework perceptions in Studies 1a and 1b and the actor's framework use in Studies 2-4. Why does this actor-observer difference exist? The closest answer may be that the observer who rates the frameworks in Studies 1a and 1b does not experience—and, more tellingly, cannot predict that he or she would be able to experience—the decrease in being overwhelmed. Hence, the observer cannot factor that into his or her a priori framework ratings. Wilson and Gilbert (2005; Gilbert & Wilson, 2009) highlight that misprediction can occur at two points: between imagining the situation and the corresponding affective reaction and between imagining the affective reaction and the corresponding consequences for the individual. The present research suggests that individuals are accurate between reading the description of the flimsy framework and their predictions of the affective state of being less overwhelmed, but then that affective prediction does not translate into an accurate behavioral prediction.

Furthermore, Loewenstein's (1996) work on mispredicting visceral factors—such as the influence of hunger, moods, and other cravings—may be pertinent to the present

research. The state of feeling stuck on one's project is unpleasant. It is possible that individuals discount just how unpleasant that state is. Even though individuals can predict that a flimsy framework will feel less overwhelming, they may not be as able to predict the original influence of being stuck on their emotional palate. It may even be that feeling stuck encompasses within it the visceral factor of a craving to become "unstuck." Perhaps individuals are not able to recognize if and when they have such a craving.

Limitations and Future Directions

Surprisingly, in Study 4, the intention-behavior link was not strong. In past research, correlations between intention and behavior are often in the range of .53. In this research, the link was a correlation of .14. Additionally, there were no differences between conditions in Study 4 on intention. It is not clear why flimsy frameworks affect behavior for stuck individuals but do not move the dial on intentions. One argument could be that setting an intention is like making a prediction, and in this research, behavioral predictions tend to be inaccurate. This may be worth exploring further.

For future research, one possible new direction is to better understand the different ways in which people become stuck. There is a famous quote by Buddha: "There are two mistakes one can make along the road to truth… not going all the way, and not starting." Similarly, stuck can be a function of not being able to complete a project or not being motivated enough to even start to work on a project. Delineating the different types of being stuck would be intriguing to address in future research, especially because the types of frameworks that help different types of stuck may vary. It may be

that flimsy frameworks were effective for stuck individuals because in these studies the individuals were stuck for primarily the same reasons.

A second possible research direction is to determine what contributes to decreasing or increasing the feeling of being overwhelmed (i.e., what the moderators are for the mediator). In what situations are individuals more or less overwhelmed? For example, there are varying degrees of being stuck from being completely stalled to being slightly behind. The current research suggests that flimsy frameworks decrease the feeling of being overwhelmed for stuck individuals. It is likely that completely stalled individuals feel more overwhelmed than those individuals who are slightly behind. Thus, a flimsy framework would likely influence stalled individuals more than it would influence individuals that are slightly behind. Another moderator may be the degree to which the flimsy framework prompt—such as making a sandwich or seeing snow—is related to the project. The further away the project is from the flimsy prompt, the more likely that the instructions make the stuck individual think in a non-linear, creative manner about steps to take on the project. This could be tested through analyses of creativity and out-of-the-box thinking.

A third possible direction is to study the minimal manipulations needed to draw individuals out of the state of being stuck. The current research emphasizes flimsy frameworks as leading to action for stuck individuals. One technique that could be helpful to stuck individuals runs somewhat counter to goal setting theory. The goal setting manipulation of setting a challenging and specific goal is a strong manipulation. However, it may be frustrating and overwhelming to attempt to set a goal in a situation in which one may already have tried to set a goal. Consider an individual who is stuck on

the issue of weight loss. Presumably, this individual has already tried setting a challenging and specific goal, and has still not achieved that goal. Having faced failure after attempting to set a goal, an individual may be open to working in the domain of habits (e.g., Wood, Quinn, & Kashy, 2002; Wood & Neal, 2007). One technique that may help a stuck individual is to not think about the challenging goal (as this did not work well in Study 2, the library texting study), but instead to think of the next small step that he or she could take. Specifically, the same small step each day at the same time and in the same place is functionally equivalent to Woods and colleagues' definitions of habits.

A fourth possible research direction is to consider frameworks posed exclusively as metaphors and analogies. When an analogy framework is presented to individuals, this may make people think enough out of the box to lead them to take action. In fact, Gick and Holyoak (1980) argue that using analogical problem-solving can help with new ideas and with creative insight. The analogical problem-solving literature (e.g., Gick & Holyoak 1980; 1983) argues that the analogy of comparing the target analog (e.g., "my small business") to the source analog ("a community of friends") creates an organized system of relations like a schema (Gick & Holyoak, 1980: 309). Then, suddenly, it becomes easier to see solutions to business problems when considering the schema of a community of friends. In particular, demonstrating the effect of such an analogical relationship, Gick and Holyoak (1980) show that describing a General needing to attack a fortress (the source) can be used as an analogy for radiation needing to attack a tumor (the target); if a participant can draw the conclusion that the General can disperse his troops and attack the fortress from many sides at once, that may often help the participant

come to the conclusion that the radiation can be aimed from multiple places to be strongest at the point of focus on the tumor (i.e. the "tumor dispersion solution"). In particular, their findings are well elucidated in their Experiment 4, in which the participants memorize and recall three stories, the middle one of which is the General and fortress story, and then the experimenters either give a hint that one of the previous stories could be related to the tumor problem or do not give such a hint. In the hint condition, 92% of participants could come up with the tumor dispersion solution, and in the no-hint condition, only 20% of participants could reach the same conclusion. Thus, there is something about relating the potential analogical solution to the problem via a hint or other connection that makes the solution to the new problem more accessible.

An analogy framework is even more heavy-handed than a hint. Gentner and colleagues studied giving a fairly heavy-handed hint within negotiations, in the context of contingent contracts, to see whether learning about contingent contracts (agreements whose terms depend on a future event) allows individuals to build more contingent contracts into their future negotiations (Gentner, Loewenstein, Thompson, & Forbus, 2009). Similar to Gick and Holyoak (1980), dropping a hint about the General and the fortress, Gentner and colleagues (2009) suggested to half the participants to make comparisons between two contracts. Gentner and colleagues asked all participants to read two cases of contingent contracts; then, half the participants answered questions on each case separately and half the participants were asked to compare the similarities of the two cases (both of which had contingent contracts in them). Then, all participants entered a negotiation that was analogous to the study cases and in which by creating a contingent contract, both parties would have a greater net gain. In the analogous

negotiation, pairs of "comparison" negotiators were almost twice as likely (59%) to make contingent contracts, compared to pairs of "separate" negotiators (33%). Thus the heavy-handed hint of comparing the two case studies led to better knowledge transfer about the skill of negotiating a contingent contract. Because a framework can be a deliberate hint, the cognition of believing that the framework holds some sort of answer can induce individuals to have stronger intentions and behaviors.

Frameworks could be thought of as a type of analogical knowledge transfer, and then it would be possible to test frameworks that differ on their degree of analogy and on their degree of hint-giving. Results from such studies could inform actual frameworks as frameworks are often worded using an analogical structure.

Conclusion

Individuals midpredict the usefulness of flimsy frameworks. The errors that individuals make about frameworks may reflect deeper errors in how we have been taught to think about motivation. The Western world is often encouraged to reach high and aim for aspirational targets. Goal setting is striving for high aspirations. Perhaps in some cases, one just needs to climb out of a rut and investigate the surroundings. The techniques that are good for aspirations are not necessarily the same techniques that are helpful for climbing out of ruts.

References

Ajzen, I. 1985. ***From intentions to actions: A theory of planned behavior***. Springer Berlin Heidelberg.

Bain. 2010. ***Strategic planning***. Retrieved from http://www.bain.com/publications/articles/management-tools-2011-strategic-planning.aspx

Baron, R. 1998. ***What type am I? Discover who you really are.*** New York: Penguin Books.

Baron, R. M. & Kenny, D. A. 1986. The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. ***Journal of Personality and Social Psychology***, 51(6): 1173-1182.

Carr, C. 2002. Executive life: Redesigning the management psyche. ***New York Times***. Retrieved from http://www.nytimes.com/2002/05/26/business/executive-life-redesigning-the-management-psyche.html?pagewanted=all&src=pm

BCG. 2013***. Interview tips: Structure the problem and develop a framework***. Retrieved from http://www.bcg.com/join_bcg/interview_prep/tips/

Booz Allen & Hamilton. 2013. ***Organizing for agility: Creating natural business units***. http://www.boozallen.com/media/file/natural_business_units.pdf

Covey, S. R. 1989. ***The 7 habits of highly effective people***. New York: Simon and Schuster.

CPP. 2012. ***History, reliability and validity of the Myers-Briggs Type Indicator® (MBTI®) instrument and The Myers-Briggs assessment***. Retrieved from

https://www.cpp.com/pdfs/MBTI_Product_Data_Sheet.pdf and https://www.cpp.com/Products/mbti/mbti_info.aspx

CTI. 2013. ***Program FAQs: How is this program related to Co-Active Coaching?*** Retrieved from http://www.thecoaches.com/leadership/program-faqs

Earley, P. C., Connolly, T., & Ekegren, G. 1989. Goals, strategy development and task performance: Some limits on the efficacy of goal setting. ***Journal of Applied Psychology***, 74: 24–33.

Erez, M., & Zidon, I. 1984. Effects of goal acceptance on the relationship of goal setting and task performance. ***Journal of Applied Psychology***, 69: 69–78.

Feldman, D. C. & Lankau, M. J. 2005. Executive coaching: A review and agenda for future research. ***Journal of Management***, 31: 829-848.

Ferraro, F., Pfeffer, J., & Sutton, R. I. 2005. Economics language and assumptions: How theories can become self-fulfilling. ***Academy of Management Review***, 30(1): 8-24.

Fishbein, M., & Ajzen, I. (1975). ***Belief, attitude, intention and behavior: An introduction to theory and research***. Reading, MA: Addison-Wesley.

Ford, T. E., & Kruglanski, A. W. 1995. Effects of epistemic motivations on the use of accessible constructs in social judgments. ***Personality and Social Psychology Bulletin***, 21: 950-962.

Gardner, W. L. & Martinko, M. J. 1996. Using the Myers-Briggs Type Indicator to study managers: A literature review and research agenda. ***Journal of Management***, 22(1): 45-83.

Gentner, D., Loewenstein, J., Thompson, L., & Forbus, K. D. 2009. Reviving inert knowledge: Analogical abstraction supports relational retrieval of past events. ***Cognitive Science***, 33(8): 1343-1382.

Gick, M. L., & Holyoak, K. J. 1980. Analogical problem solving. ***Cognitive Psychology***, 12: 306-355. Reprinted in A. M. Aitkenhead & J. M. Slack (Eds.) (1986), Issues in cognitive modeling. Hillsdale, N.J.: Erlbaum.

Gick, M. L., & Holyoak, K. J. 1983. Schema induction and analogical transfer. ***Cognitive Psychology***, 15: 1-38.

Gilbert, D. T. & Wilson, T. D. 2009. Why the brain talks to itself: sources of error in emotional prediction. ***Philosophical Transactions of the Royal Society B: Biological Sciences***, 364(1521): 1335-1341.

Gollwitzer, P. M. 1993. Goal achievement: The role of intentions. ***European Review of Social Psychology***, 4(1): 141-185.

Hambrick, D. C., & Fredrickson, J. W. 2005. Are you sure you have a strategy? ***The Academy of Management Executive***, 19(4): 51-62.

Hayes, A. F. & Preacher, K. J. 2013. ***Statistical mediation analysis with a multicategorical independent variable [White paper].*** Retrieved from http://www.afhayes.com/

Hill, T. & Westbrook, R. 1997. SWOT analysis: It's time for a product recall, ***Long Range Planning***, 30(10): 46-52.

Hollenbeck, J. R. & Klein, H. J. 1987. Goal commitment and the goal-setting process: Problems, prospects, and proposals for future research. ***Journal of Applied Psychology***, 72(2): 212-220.

Ibisworld, 2013. ***Management consulting in the US: Market research report***. Retrieved from http://www.ibisworld.com/industry/default.aspx?indid=1421

Kiersey, D. & Bates, M. 1984. ***Please understand me: Character and temperament types***. B & D Books.

Kruglanski, A. W., Webster, D. M., & Klein, A. 1993. Motivated resistance and openness to persuasion in the presence or absence of prior information. ***Journal of Personality and Social Psychology***, 65: 861-876.

Kruglanski, A. W., & Webster, D. M. 1996. Motivated closing of the mind: "Seizing" and "freezing." ***Psychological Review***, 103: 263-283.

Locke, E. A. & Latham, G. P. 1990. ***A theory of goal setting and task performance***. New Jersey: Prentice Hall.

Locke, E. A. & Latham, G. P. 2002. Building a practically useful theory of goal setting and task motivation: A 35-year odyssey. ***American Psychologist***, 57: 705–717.

Locke, E. A. & Latham, G. P. 2006. New directions in goal-setting theory. ***Current Directions in Psychological Science***, 15(5): 265-268.

Loewenstein, G. 1996. Out of control: Visceral influences on behavior. ***Organizational Behavior and Human Decision Processes***, 65(3): 272-292.

Madden, T. J., Ellen, P. S., & Ajzen, I. 1992. A comparison of the theory of planned behavior and the theory of reasoned action. ***Personality and Social Psychology Bulletin***, 18(1): 3-9.

Major, B. & O'Brien, L. T. 2005. The social psychology of stigma. ***Annual Review of Psychology***, 56: 393-421.

McKinsey. 2013. ***Enduring ideas: Classic McKinsey frameworks that continue to inform management thinking***. Retrieved from http://www.mckinsey.com/insights/strategy/enduring_ideas_classic_mckinsey_frameworks_that_continue_to_inform_management_thinking

Mindtools. 2013. ***About Mind Tools***, featuring the section "Mind Tools in Numbers." Retrieved from http://www.mindtools.com/corporate/about/

Muraven, M. & Baumeister, R. F. 2000. Self-regulation and depletion of limited resources: Does self-control resemble a muscle? ***Psychological Bulletin***, 126(2): 247-259.

Muraven, M., Baumeister, R. F., & Tice, D. M. 1999. Longitudinal improvement of self-regulation through practice: Building self-control strength through repeated exercise. ***The Journal of Social Psychology***, 139(4): 446-457.

Pittenger, D. J. 2005. Cautionary comments regarding the Myers-Briggs Type Indicator. ***Consulting Psychology Journal***, 57(3): 210-221.

Preacher, K. J. & Hayes, A. F. 2004. SPSS and SAS procedures for estimating indirect effects in simple mediation models. ***Behavior Research Methods, Instruments, & Computers***, 36(4): 717-731.

Rigby, D. R. 2011. ***Management tools 2011: An executive's guide***. Bain & Company. Retrieved from http://www.bain.com/Images/Bain_Management_Tools_2011.pdf

Ryan, R. M. & Deci, E. L. 2000. Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. ***American Psychologist***, 55(1): 68-78.

Stabile, S. J. 2002.The use of personality tests as a hiring tool: Is the benefit worth the cost? ***U.PA. Journal of Labor and Employment Law,*** 4(2): 279-313.

Sheeran, P. 2002. Intention-behavior relations: A conceptual and empirical review. ***European Review of Social Psychology***, 12(1): 1-36.

Staw, B. M., Sandelands, L. E., & Dutton, J. E. 1981. Threat rigidity effects in organizational behavior: A multilevel analysis. ***Administrative Science Quarterly***, 26: 501-524.

Simmons, J. P., Nelson, L. D., & Simonsohn, U. 2011. False-positive psychology: Undisclosed flexibility in data collection and analysis allows presenting anything as significant. ***Psychological Science***, 22(11): 1359-1366.

Simonsohn, U. & Gino, F. 2013. Daily horizons evidence of narrow bracketing in judgment from 10 years of MBA admissions interviews. ***Psychological Science,*** 24(2): 219-224.

Strang, D. & Macy, M. W. 2001. In search of excellence: Fads, success stories, and adaptive emulation. ***American Journal of Sociology***, 107(1): 147-182.

Tieger, P. D. & Barron-Tieger, B. 1995. ***Do what you are***. New York: Little, Brown & Co.

Valentin, E. K. 2001. SWOT analysis from a resource-based view. ***Journal of Marketing Theory and Practice***, 9(2): 54-69.

Vroom, V. H. (1964). ***Work and motivation***. San Francisco, CA: Jossey-Bass.

Whitworth, L., Kimsey-House, H., & Sandahl, P. 1998. ***Co-active coaching: New skills for coaching people toward success in work and life***. New York: Nicholas Brealey Publishing.

Wilson, T. D. & Gilbert, D. T. 2005. Affective forecasting: Knowing what to want. ***Current Directions in Psychological Science***, 14(3): 131-134.

Wood, W., Quinn, J. M., & Kashy, D. A. 2002. Habits in everyday life: Thought, emotion, and action. ***Journal of Personality and Social Psychology***, 83(6): 1281-1297.

Wood, W. & Neal, D. T. 2007. A new look at habits and the habit-goal interface. ***Psychological Review***, 114(4): 843.

Wright, D. B. 2003. Making friends with your data: Improving how statistics are conducted and reported. ***British Journal of Educational Psychology***, 73(1): 123-136.

Table 1. Means, Standard Deviations, and Correlations for Study 1a

			Correlations					
	Mean	SD	1	2	3	4	5	6
1. Credibility	3.22	1.41	1	.57**	-.52**	.29**	.54**	.31**
2. Effectiveness	4.32	1.48		1	-.62**	.30**	.56**	.12
3. Flimsiness	2.78	1.52			1	-.27**	-.35**	-.01
4. Familiarity	4.09	1.34				1	.16*	.19**
5. Interest in Learning More	3.06	1.58					1	.29**
6. Being Overwhelmed	2.23	1.12						1

* $p < .05$, ** $p < .01$

Table 2. Means for Framework Conditions for Each Factor in Study 1a

	Credibility	Effectiveness	Flimsiness	Familiarity	Interest in Learning More	Being Over-whelmed
Framework-Absent Control	3.18 ^	4.53 **	2.48 ***	4.68 ***	3.34 *	2.61 ***
Flimsy Framework	**2.74**	**3.53**	**3.57**	**3.09**	**2.64**	**1.70**
General Process Framework	3.17 ^	4.38 **	2.81 *	4.06 ***	3.00	2.23 **
Goals Framework	3.83 ***	4.85 ***	2.31 ***	4.57 ***	3.35 *	2.47 ***

All significance signs refer to the significant difference between the flimsy framework condition and any other condition in a pair-wise comparison for that factor. I.e., for the effectiveness factor, because the framework-absent control has asterisks (**) next to it, this means that the 4.45 value is different from the 3.59 value of the flimsy framework at a level of $p < .01$.

^ $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Table 3. Means, Standard Deviations, and Correlations for Study 1b

			Correlations					
	Mean	SD	1	2	3	4	5	6
1. Credibility	3.02	1.66	1	.56**	-.56**	.46**	.67**	.48**
2. Effectiveness	4.27	1.50		1	-.62**	.43**	.48**	.22**
3. Flimsiness	2.92	1.75			1	-.36**	-.45**	-.19*
4. Familiarity	4.09	1.44				1	.23**	.24**
5. Interest in Learning More	3.06	1.74					1	.33**
6. Being Overwhelmed	2.38	1.25						1

* $p < .05$, ** $p < .01$

Table 4. Means for Framework Conditions for Each Factor in Study 1b

	Credibility	Effectiveness	Flimsiness	Familiarity	Interest in Learning More	Being Over-whelmed
Framework-Absent Control	3.05	4.42 *	2.42 **	4.16 **	2.93	2.67 **
Flimsy Framework	**2.60**	**3.79**	**3.41**	**3.34**	**2.85**	**1.96**
Steps Framework	3.48 **	4.65 **	*(p = .146)* 2.90	4.91 ***	3.45 ^	2.55 *

All significance signs refer to the significant difference between the flimsy framework condition and any other condition in a pair-wise comparison for that factor. I.e., for the effectiveness factor, because the framework-absent control condition has an asterisk (*) next to it, this means that the 4.42 value is different from the 3.79 value of the flimsy framework at a level of $p < .05$.

^ $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Table 5. Means for Framework Conditions in Study 3 (Weekend Projects Study)

	N	RANK			ORIGINAL DATA (in hours)			ORIGINAL DATA with outliers removed (in hours)		
		Rank Saturday	Rank Sunday	Difference	Saturday	Sunday	Difference	Saturday	Sunday	Difference
Framework-Absent Control	89	134.46	126.27 *	-6% *	1.04 ^	1.05 *	2%	0.91 ^	0.83 *	-9%
Steps Framework	94	135.84	134.90 ^	1% ^	1.21	1.03 *	-15%	1.00	0.94 ^	-6%
Flimsy Framework	95	**147.85**	**156.44**	**6%**	**1.44**	**1.56**	**8%**	**1.17**	**1.24**	**6%**

All significance signs refer to the significant difference between the flimsy framework condition and any other condition in a pair-wise comparison for that factor. I.e., for "Rank Sunday," because the framework-absent control condition has an asterisk (*) next to it, this means that the 126.27 value is different from the 156.44 value of the flimsy framework at a level of $p < .05$.

^ $p < .10$, * $p < .05$

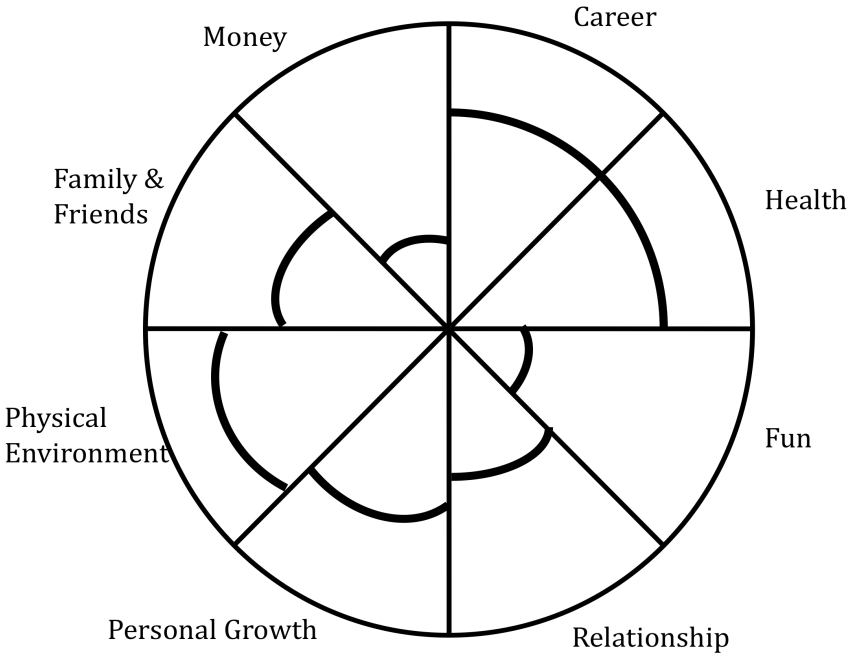
Table 6. Means, Standard Deviations, and Correlations in Study 4 (Mediation Study)

	Mean	SD	1	2	3	4	5	6	7
1. Degree of progress	4.34	2.02	1	.01	.48**	.14**	.37**	.23**	-.23**
2. Took action (0=No,1=Yes)	0.35	0.48		1	.02	.05	.15**	.11*	-.17**
3. Expectancy	6.00	1.07			1	.33**	.50**	.43**	-.28**
4. Value	6.23	0.85				1	.51**	.44**	-.13*
5. Motivation	5.72	1.26					1	.53**	-.28**
6. Need for Structure	5.98	0.86						1	-.17**
7. Being Overwhelmed	2.85	1.64							1

* $p < .05$, ** $p < .01$

Took action refers to the dependant variable: did the participant take an action?

Figure 1a. Wheel of Life Framework



Based on Whitworth et al., 1998.

Figure 1b. Urgent-Important Framework

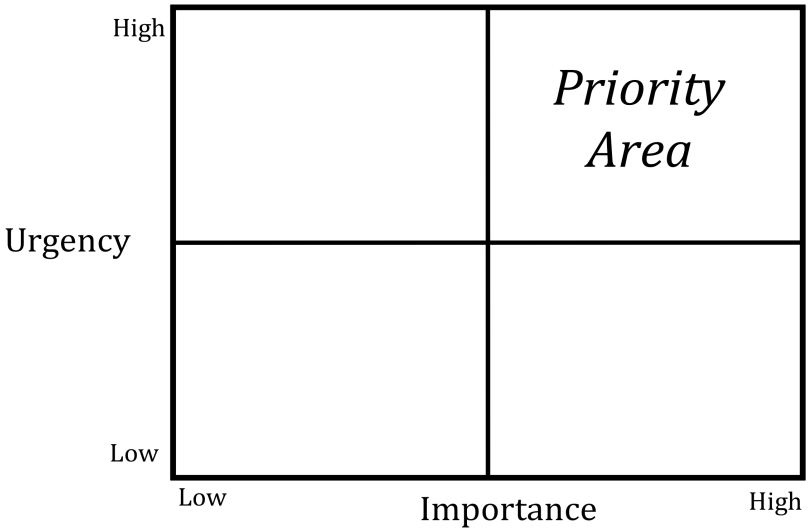


Figure 1c. Porter's Five Forces Framework

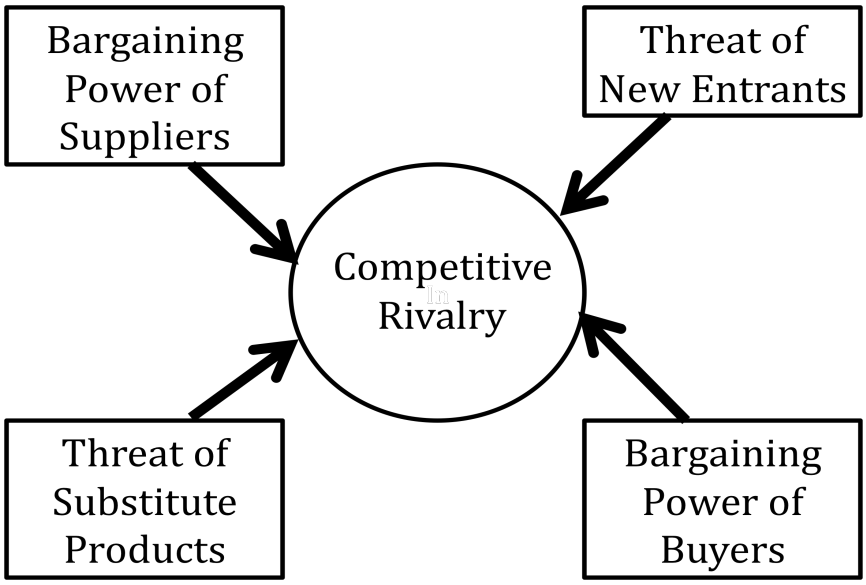
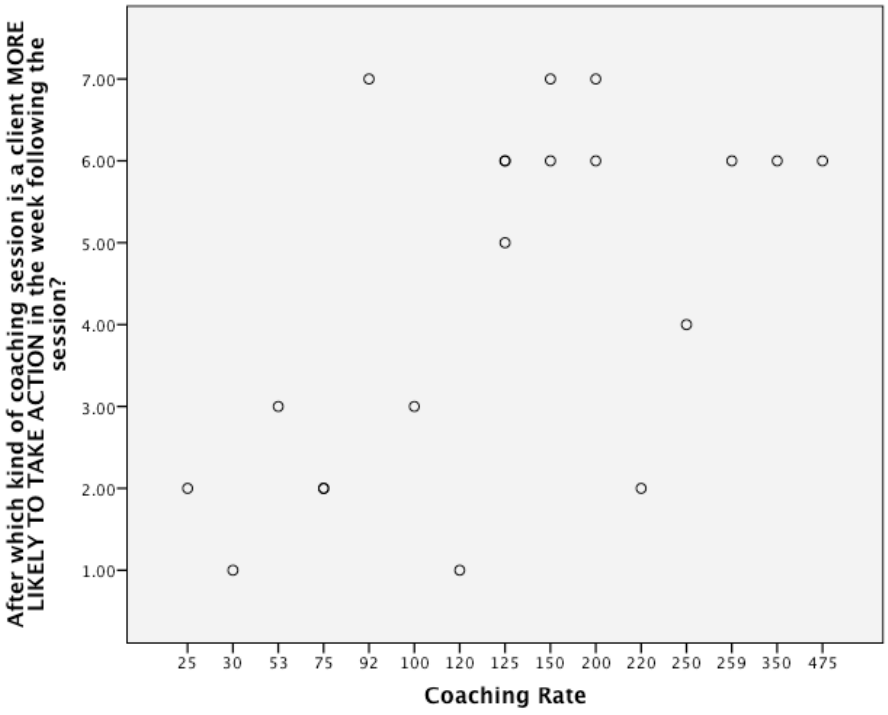


Figure 2. Relationship between Coaching Rate and Beliefs about Action

This chart demonstrates the relationship between the coach's per-hour rate and his or her belief in frameworks (as opposed to discussion) lead the client to take action over the week following the coaching session (r = .47, p = .036).

7 = A session that
includes ACTIVELY
USING a framework
to address the client's issues



1 = A session based
ALMOST ENTIRELY
on discussion to address
the client's issues

Figure 3. Means for Framework Conditions for Each Factor in Study 1a

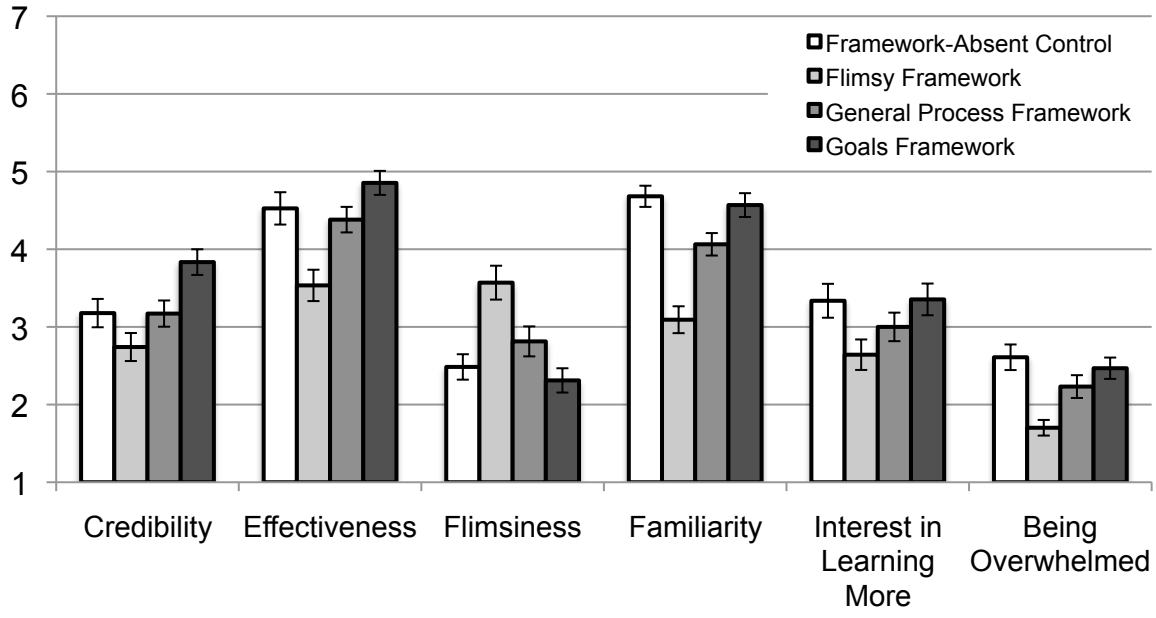


Figure 4. Percentage of Respondents Saying "Yes" in Study 1a

The Question: "Will this method help you move forward on your project?"

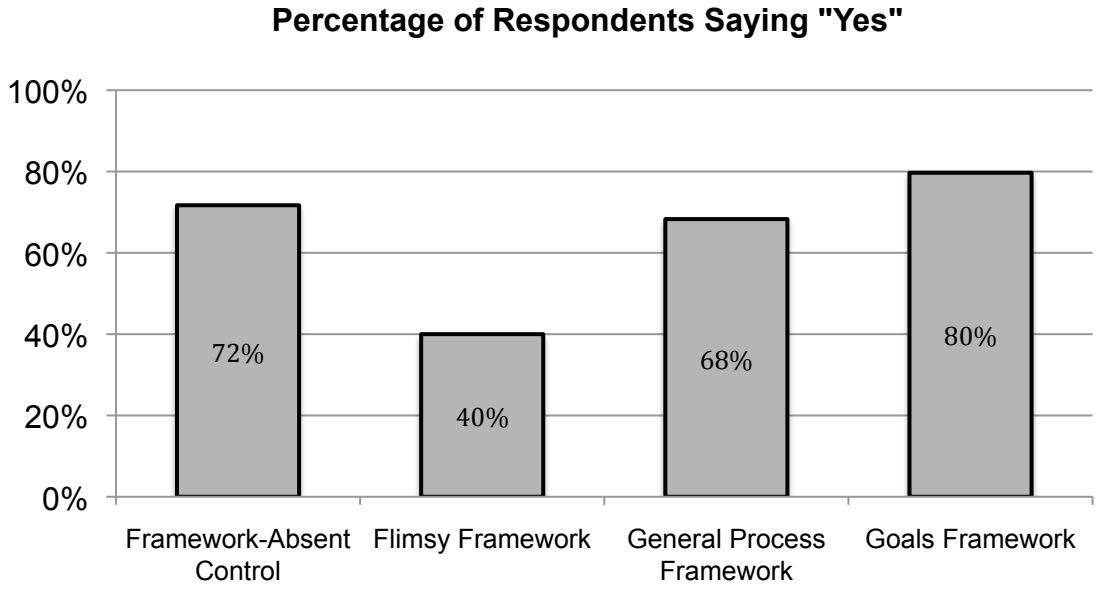


Figure 5. Means for Framework Conditions for Each Factor in Study 1b

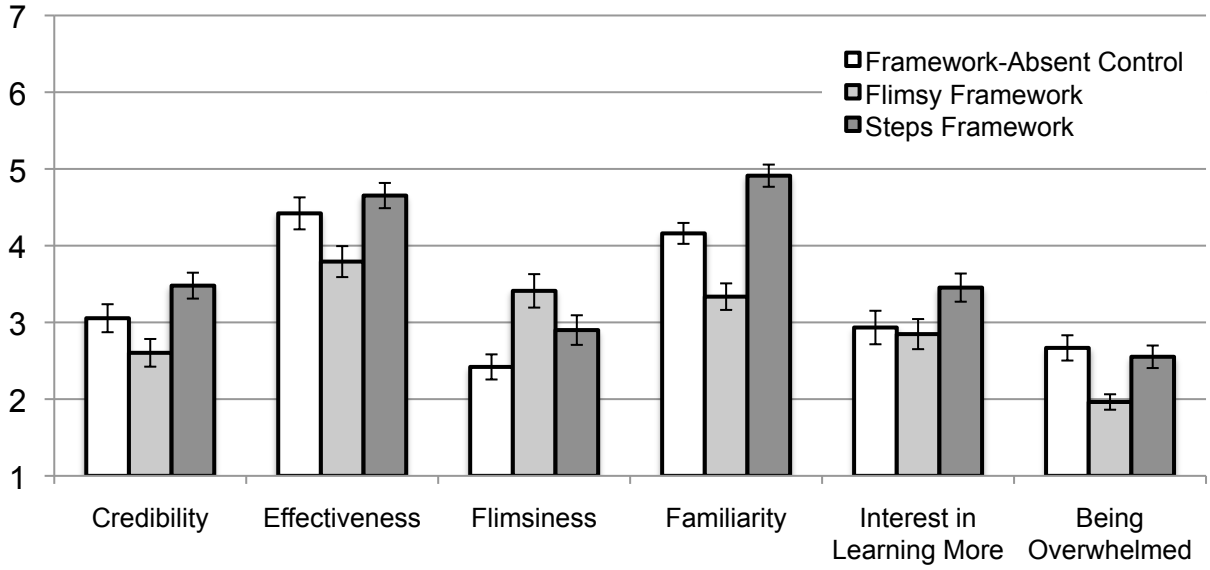


Figure 6. Percentage of Respondents Saying "Yes" in Study 1b

The Question: "Will this method help you move forward on your project?"

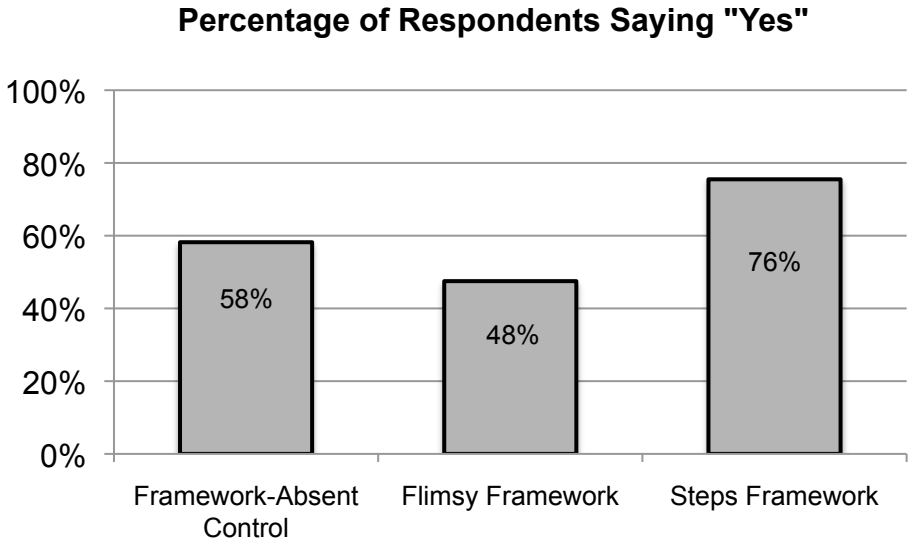
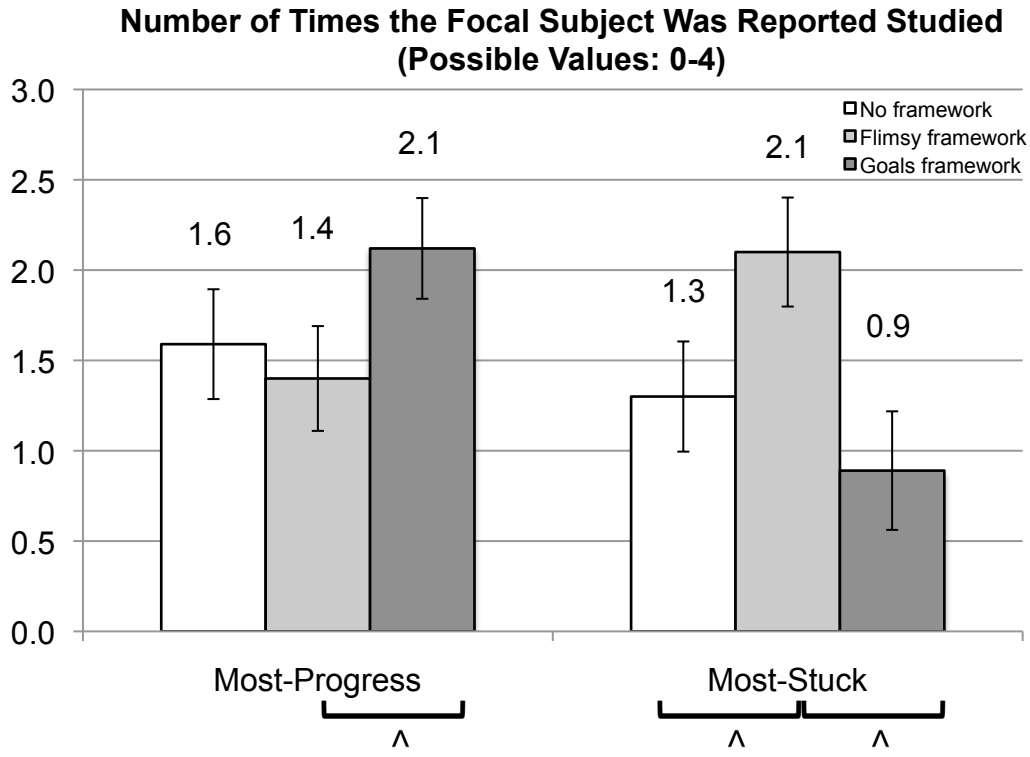
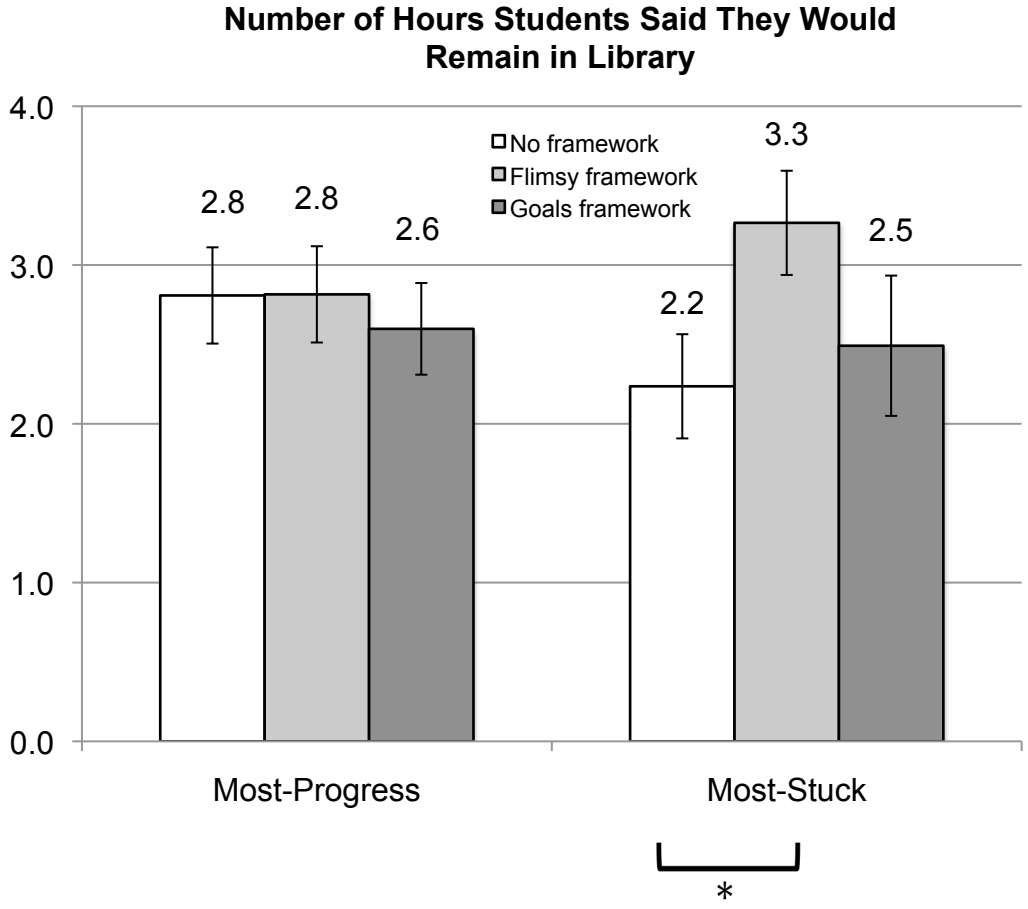


Figure 7. Dependent Variable in Study 2 (Library Texting Study)



^ $p < .10$

Figure 8. Expected Study Time in Study 2 (Library Texting Study)



* $p < .05$

Figure 9. Dependent Measure in Study 3 (Weekend Projects Study)

Figure 9a. Time spent (original data)

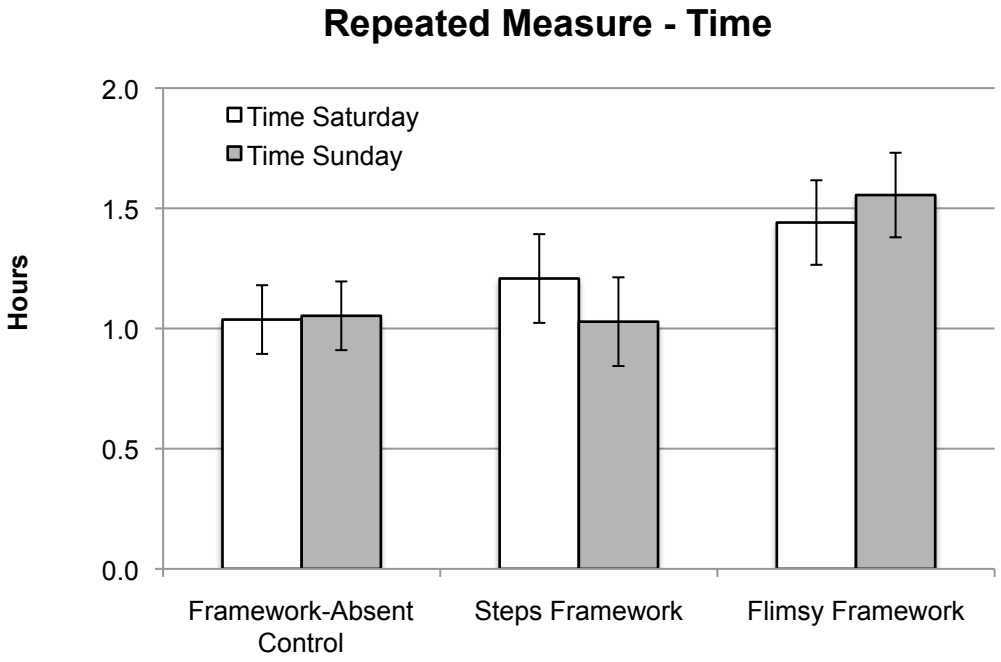


Figure 9b. Rank of time spent

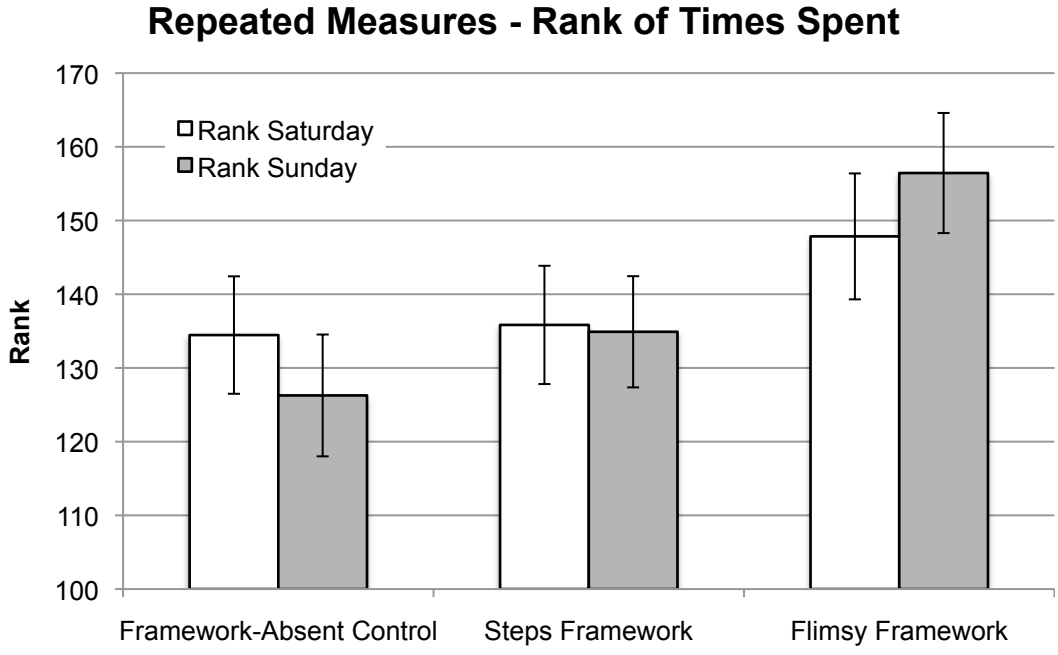


Figure 9. Dependent Measure in Study 3 (continued)

Figure 9c. Time spent, outliers removed

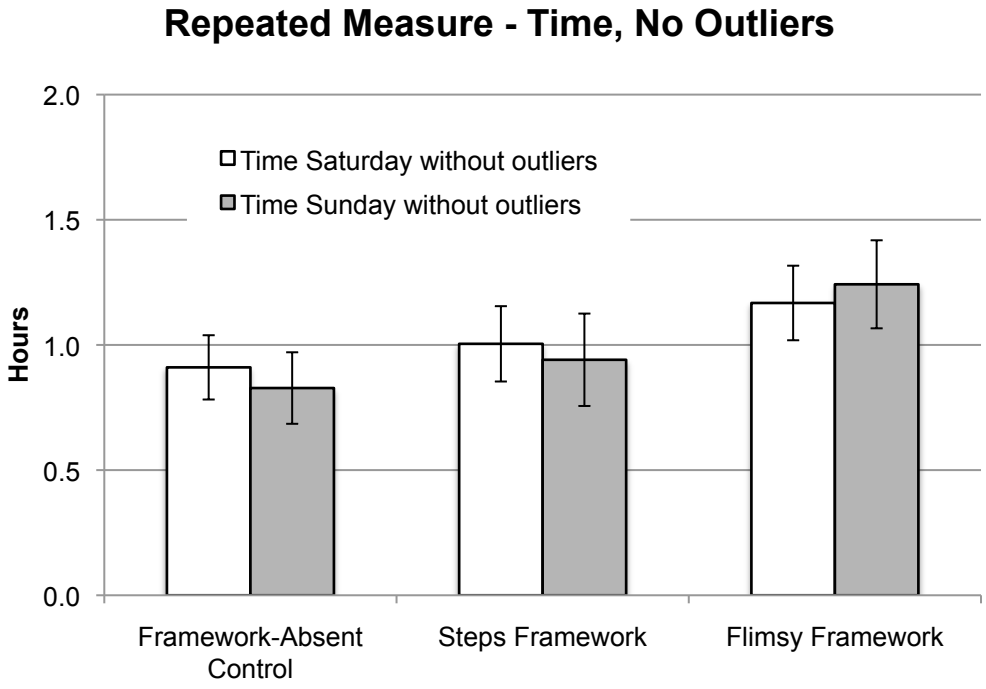
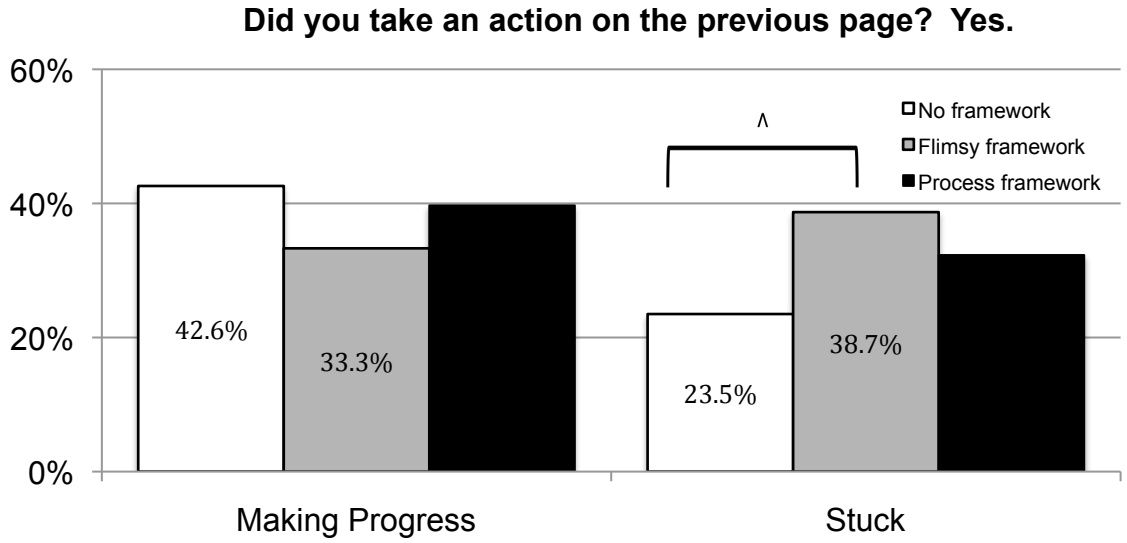
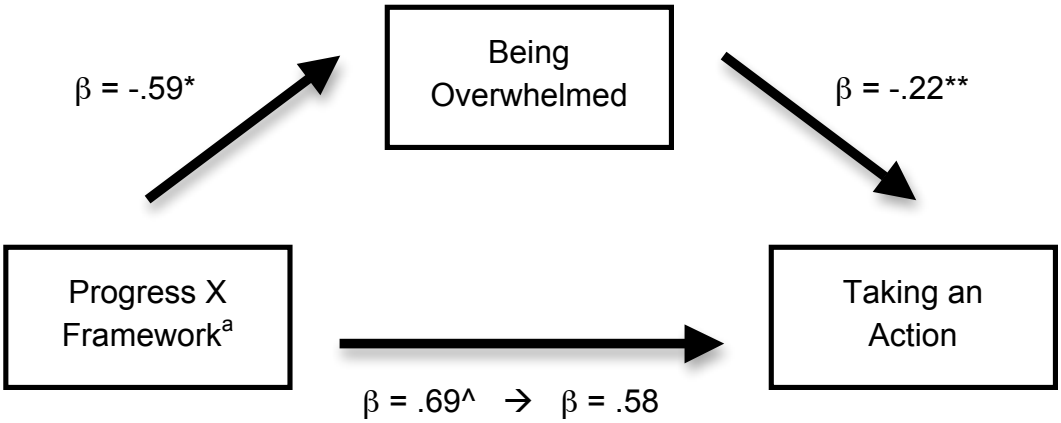


Figure 10. Dependent Variable in Study 4 (Mediation Study)



^ $p < .10$

Figure 11. Mediation in Study 4 (Mediation Study)



^ $p < .10$, * $p \leq .05$, ** $p < .01$

[a] The progress X framework interaction depicted here (the independent variable) is a comparison of the condition of stuck-flimsy-framework to stuck-no-framework.

Coded as follows:

- Taking an action is coded as 0=no, 1=yes
- Six progress X frameworks conditions are dummy-coded into five variables such that 0=all other conditions and 1=the condition being coded. The stuck-framework-absent control condition is the reference condition.

APPENDIX A. Full set of variables for Pilot 1 (Coaching Survey #1 about Coaching Fee and Framework Beliefs)

Exhaustive list of variables available in the dataset for the coaches' survey. The dataset includes only the following variables. Variables printed in bold were used in the analyses.

1. Qualifying questions
1a. Are you doing this survey from a computer?
1b. Can you spend 5-10 minutes on this survey and not do other things at the same time?

2. Background questions
2a. How long have you been a coach?
2b. What type of coaching do you primarily do?

4. What have you found to be the most effective things that you do as a coach to get the client to take action between sessions?

5. Evaluating five frameworks (the Flow Framework, the Wheel of Life Framework, the Values-in-Action Strengths Survey, the Peak-End Rule, and the Strengths-Opportunities-Aspirations-Results Framework)
5a. To what degree do you use the following frameworks in your coaching?
5b. To what degree do you find these frameworks to be effective in getting the client to take action on projects in the week following the session?

6. After which kind of coaching session is a client MORE LIKELY TO TAKE ACTION in the week following the coaching session?

8. Demographic and background questions
8a. Do you do your coaching primarily by phone or primarily in person?
8b. Typically, how often do you have a meeting or phone call with each client?
8c. Typically, how long does one client engagement last?
8d. How much do you charge per hour for coaching (in US dollars)?
8e. What is your gender?
8d. What time zone are you in?

9. Any optional comments about the survey

10. Contact information for the drawing

Details on data cleaning.

There was no data cleaning. The raw data contains 24 observations. Four respondents did not respond to the question about how much they charge as coaches, and hence 20 responses were used. For item 2a above, all responses of "less than one year" were coded as .5 years; all responses of a number of years (2, 15, etc.) were coded as that response itself.

APPENDIX B. Full Set of Variables for Pilot 2 (Understanding Stuck)

Exhaustive list of variables available in the dataset for Mechanical Turk survey about a priori beliefs about frameworks. The dataset includes only the following variables. Variables printed in bold were used in the analyses.

1. Qualifying question: Do you have up to 7 minutes right now to take this survey without interruption?

2. Stuck [making progress] manipulation and choosing a project
2a. What is your specific project?
2b. Why feeling stuck [feeling that you are making progress] on the project?
2c. To what degree do the following make you feel that you are stuck [making progress]: skills, resources, energy and motivation, prioritizing this project, knowing what steps to take
2d. Please rate how you are currently doing on this project (Degree of progress item)

3. Expected progress items
3a. Current progress and expectations: behind versus ahead of expectations
3b. Percentage - How much of the project have you currently completed?
3c. Percentage - How much of the project did you expect to complete by this point?

4. Stuck correlates
4a-f. To what degree is the project consequential, difficult, worrying, reminder of not being able to complete something, overwhelming, threatening

5. Potential related items
5a. Hope pathways subscale (3 items)
5b. Ordering and structuring my work (5 items)
5c. Motivation (6 items)

6. Manipulation check about content of project

7. Demographics
7a. Gender
7b. Age
7c. Gain or benefits from survey

Details on data cleaning.

Initially, 155 participants started the survey. However, the data from 7 participants was not useable because they either did not write a project or wrote gibberish in the project field; these responses were removed from the analysis. Thus, the responses of 148 participants were used. There was no data cleaning within the 148 participants.

APPENDIX C. Full Set of Variables for Pilot 3 (Coaching Survey #2 about Frameworks)

Exhaustive list of variables available in the dataset for Mechanical Turk survey about a priori beliefs about frameworks. The dataset includes only the following variables. Variables printed in bold were used in the analyses.

1. Coaching Demographics
1a. Length of time as coach
1b. Client or client's organization or other paying for the coaching
1c. Number of issues clients general want to solve
1d. Clients' degree of progress on issues about which they seek coaching
1e. Decision to start coaching as more internally- or externally-generated idea
1f. How clients are doing in their life overall when they come to coaching

2. Progress manipulation of hypothetical client:
Consider a client who has come with an issue on which he or she is very much stuck OR
Consider a client who has come with an issue on which he or she is very much making progress

3. On this issue, the degree to which the respondent is likely to have the client:
3a. Focus on other issues
3b. Pay less attention to this issue
3c. Fill out a questionnaire or self-assessment
3d. Use a coaching framework or model
3f. Discuss how they got to this stage
3g. Discuss future goals

4. Ending demographics
4a. Coaching rate per hour
4b. U.S. or not-U.S. based
4c. Gender

5. General information
5a. How to contact for a drawing
5b. Optional comments to researcher
5c. How respondent heard about the survey

Details on data cleaning.

Initially, 106 participants took the survey. However, the data from 55 participants was not used because their response to item 4b above was not-U.S.-based. Thus, data from the 51 participants that were U.S.-based was used because the term "framework" may hold different nuances internationally.

APPENDIX D. Full Set of Variables for Studies 1a and 1b (A Priori Beliefs about Frameworks)

Exhaustive list of variables available in the dataset for Mechanical Turk survey about a priori beliefs about frameworks. The dataset includes only the following variables. Variables printed in bold were used in the analyses.

1. Qualifying question: Do you have up to 7 minutes right now to take this survey without interruption?

2. Choose a project
2a. What is your specific project?
2b. Please rate how you are currently doing on this project (Degree of progress item)

3. Evaluation of the framework. (While thinking about the project you just described, consider the following instructions). Instructions given were the framework-absent control, flimsy framework, general process framework, and goals framework (Study 1a), and the framework-absent control, flimsy framework, and steps framework (Study 1b).

3a. Effectiveness in taking action (6 items)

- **These instructions will get me to work more on my project.**
- **I am skeptical that these instructions will help me achieve my stated goal on the project.**
- **These instructions will be helpful to me for working more on my project.**
- **These instructions will be useless for making progress on my project.**
- **These instructions will not be able to increase how much work I put into my project.**
- **I can see that these instructions will lead me to work more on this project.**

3b. Flimsiness (4 items)

- **The method described in these instructions is flimsy.**
- **The method in these instructions is unsubstantiated.**
- **The method in these instructions is not reliable.**
- **The method in these instructions is silly.**

3c. Credibility (4 items)

- **The method described above is ... Authoritative and dependable**
- **… Likely scientifically validated**
- **… Well-established as a framework**
- **… Credible and trustworthy**

3d. Overwhelming (5 items)

- **Following the instructions in the method described above seems: Overwhelming, Intimidating, Threatening, Time-consuming, Effortful**

3e. Learning more (3 items)

- **I am interested in learning more about how I can apply this method to my project.**

I am interested in going to a website that describes in more detail how to apply this framework to my project.
I think there are subtleties in this method that will be helpful.

3f. Familiarity (6 items)
This way of thinking about my project is familiar to me.
This way of thinking about my project is similar to other ways that I have tried.
This is a new way of thinking about my project.
This is a boring way of thinking about my project.
This is a way of thinking about my project that I have heard of before.
This is a surprising way of thinking about my project.

3g. Expectation of effectiveness (5 items)
That is surprising that it is effective
I thought it would be effective
That makes sense that it is effective
I would not have expected it to be effective
I would have anticipated that it is effective

3h. Will it help and how?
Will this method help you move forward on your project?
How?

4. Demographics
4a. Gender
4b. Age
4c. MTurk ID
4d. Any reason to disqualify
4e. Optional comments about gain or benefits

Details on data cleaning for Study 1a.

Initially, 278 participants started the survey. However, the data from 10 participants was not useable because they were automatically removed from the survey when they wrote for too short a time in answering the project description question (all participants were informed that if they did not write for at least one minute about their projects, they would be removed and not paid; this is an attention check based on pretests). Additionally, 26 participants stopped part way through the survey, and their responses were excluded. Thus, 242 participants responded to the full survey. The project description question was checked for each respondent and all responses were valid. Thus, there was no data cleaning within the 242 participants.

Details on data cleaning for Study 1b.

Initially, 170 participants started the survey. However, the data from 6 participants was not useable because they were automatically removed from the survey when they wrote for too short a time in answering the project description question. Thus, 164 participants responded to the full survey. The project

description question was checked for each respondent and all responses were valid. Thus, there was no data cleaning within the 164 participants.

Details on factor analysis for Study 1b.

In Study 1b, I used the same factors, composed of the same items, as in Study 1a for consistency in viewing of the data (for the factors, see Appendix E). These factors had a good fit at face value with the six theoretical measures I aimed to address. Additionally, I took two precautions in Study 1b to insure that using the same factor solution as in Study 1a would not be an inaccurate portrayal of the data. First of all, I measured the reliabilities of each factor, and they were similar to those of Study 1a, and all factors had high Cronbach's alphas (see Appendix E). Secondly, I conducted a factor analysis for Study 1b to examine the differences that would emerge if a different factor solution were determined based only on the data in Study 1b. In the new factor analysis (again a principal components analysis with varimax rotation), a seven-factor solution was found. There were two differences from Study 1a. The first difference was quite small: the five items of being overwhelmed factor divided into two sub-factors: one was composed of overwhelmed, threatened, and intimidated, and the second was composed of time-consuming and effortful. The second difference was that one additional item loaded together with the flimsiness items; the item was rating how boring the method appeared and it loaded with the items of unsubstantial, flimsy, silly, and not reliable. Because both of these factor solution differences are not substantial distinctions from the factor solution in Study 1a (and because the reliabilities for the factors were high in Study 1b), the factor solution from Study 1a was chosen to be the factor solution used in Study 1b.

APPENDIX E. Items Corresponding to Each Factor in Studies 1a and 1b

Credibility (α = .89 in Study 1a, α = .92 in Study 1b)

The method described above is ... Authoritative and dependable
… Likely scientifically validated
… Well-established as a framework
… Credible and trustworthy
That makes sense that it is effective

Expectation that it will be effective to get the participant to work more
(α = .86 in Study 1a, α = .83 in Study 1b)

These instructions will get me to work more on my project.
I am skeptical that these instructions will help me achieve my stated goal on the project. (R)
These instructions will be helpful to me for working more on my project.
These instructions will be useless for making progress on my project. (R)
These instructions will not be able to increase how much work I put into my project. (R)

Flimsiness (α = .89 in Study 1a, α = .94 in Study 1b)

The method described in these instructions is flimsy.
The method in these instructions is unsubstantiated.
The method in these instructions is not reliable.
The method in these instructions is silly.

Familiarity (α = .79 in Study 1a, α = .76 in Study 1b)

This way of thinking about my project is familiar to me.
This way of thinking about my project is similar to other ways that I have tried.
This is a new way of thinking about my project. (R)
This is a way of thinking about my project that I have heard of before.
This is a surprising way of thinking about my project. (R)

Interest in learning more (α = .89 in Study 1a, α = .90 in Study 1b)

I am interested in learning more about how I can apply this method to my project.
I am interested in going to a website that describes in more detail how to apply this framework to my project.
I think there are subtleties in this method that will be helpful.

Being overwhelmed
(α = .84 in Study 1a, α = .81 in Study 1b)

Following the instructions in the method described above seems:
… Overwhelming
… Intimidating
… Threatening
… Time-consuming
… Effortful

APPENDIX F. Full Set of Variables for Study 2 (Library Texting Study).

Exhaustive list of variables available in the dataset for the library texting study. The dataset includes only the following variables. Variables printed in bold were used in the analyses.

1. Most-stuck and most-progress manipulations
1a. Text in the shaded box
1b. Degree of progress manipulation check

2. Framework manipulations: none, flimsy, goals

3. Demographics
3a. Gender
3b. Year in school

4. Cell number

5. Texting data:
5a. What are you working on? (A,B,C – four times)
5b. How committed are you to this goal (1-5 – four times)
5c. Goal commitment (2 items)
5d. Report of total time spent or expected to be spent in the library on this session

Details on data cleaning.

Initially, 198 undergraduates going into the library to study completed both the paper survey and the texting responses. Of these 198 undergraduates, 26 students (13.1%) were excluded from the analysis for skipping both attention checks (those students that completed at least one attention check remained in the study). Thus, the data was analyzed with the remaining 172 undergraduates.

APPENDIX G. Full Set of Variables for Study 3 (Weekend Projects Study).

Exhaustive list of variables available in the dataset for the weekend projects study. The dataset includes only the following variables. Variables printed in bold were used in the analyses.

1. Qualifying questions
1a. Not blocked from this study
1b. Currently at the computer
1c. Have 7 minutes available
1d. Will be able to send an end-of-study email the following day

2. Stuck manipulation
2a. Are you stuck on this project?
2b. What is your specific project?
2c. Why feeling stuck on the project
2d. Please rate how you are currently doing on this project (Degree of progress item)

3. Work on the project today
3a. How much time did you spend on your project today? (Hours and/or minutes)
3b. Time zone
3c. Actions taken on the project today

4. Framework manipulation
4a. Control framework: Describe any aspect of this project.
4b. Steps framework: Describe the steps you could take to work on this project.
4c. Flimsy framework: Describe the process of making a sandwich, and then describe how the sandwich description is similar to working on this project.

5. Manipulation check
5a. Describe the project again in a few words.

6. Demographics
6a. Gender
6b. Age
6c. Mturk ID

7. Work on the project the following day (via email)
7a. How much time did you spend on your project today until 5pm? (Hours and/or minutes)

Details on data cleaning.

Initially, 364 participants started this study. Of these, 16 were timed out due to writing for less than one minute about their project and did not take the remaining part of the survey, 9 additional participants did not complete the survey

voluntarily, and one was excluded because he or she typed gibberish for the project description question. Thus, 338 participants filled in the entire first survey. Of these, 278 participants (82.2%) replied the following day with the amount of time that they had spent working on the project. Hence, 278 participants were included in the full analysis.

APPENDIX H. Full Set of Variables for Study 4 (Mediation Study).

Exhaustive list of variables available in the dataset for the mediation study. The dataset includes only the following variables. Variables printed in bold were used in the analyses.

1. Qualifying questions
1a. Currently at the computer
1b. Sitting down at the computer
1c. Have 15 minutes available

2. Stuck and making progress manipulations
2a. Are you stuck/making progress on this project?
2b. What is your specific project?
2c. Why feeling stuck/that you are making progress on the project
2d. Please rate how you are currently doing on this project (Degree of progress item)

3. Framework manipulation – none, flimsy framework, general process framework
3a. Framework-absent control: Describe any aspect of this project.
3b. Flimsy framework: Describe the process of making a sandwich, and then describe how the sandwich description is similar to working on this project.
3c. General process framework: Describe the process of working on a project in general, and then describe how the working on a project in general description is similar to working on this project.

4. Taking an Action dependent variable
4a. Did you take an action? Y/N
4b. Why or why not?
4c. What is the specific action you took?
4d. Was this action directly related to moving forward on your project? Y/N

5. Intentions (3 items)
5a-c. How much time will you spend on your project today, tomorrow, the day after tomorrow?

6. Expectancy #1 (2 items)
6a. Likelihood of attaining desired result
6b. Probability of finishing the project

7. Intentions #2 (4 questions)
7a-b. Intention to work on the project next month, and probability of doing so
7c-d. Intention to work on the project in the next day, and probability of doing so

8. Value (3 items)
8a. My project is important.

8b. My project is valuable.
8c. The outcome of my project is important.

9. Expectancy #2 (2 items)
9a. Completing my project feels fairly doable.
9b. Reaching the end of my project seems achievable.

10. Motivation (3 items)
10a. I am motivated to work on my project.
10b. I have a renewed interest in my project.
10c. I look forward to working on my project.

11. Structure (3 items)
After following the instructions in this survey…
11a. … I am finding that having a well-ordered approach to my problem is helpful.
11b. … I feel that structuring my day-to-day approach to my project can make me more productive.
11c. … I believe that approaching my project with clearly stated objectives and requirements can make me more effective.

12. Process (3 items)
12a. Thinking about the process is helpful to moving forward on my project.
12b. Following a good process may the difference between my success and failure on this project.
12c. Breaking my project into smaller steps is helpful.

13. Manipulation check about the project description and about instructions

14. Thoughts when deciding to take the action (8 items)
14a. "I don't have time to take an action right now."
14b. "It is a small action."
14c. "Taking this action could feel overwhelming."
14d. "This action takes me a small amount of effort."
14e. "The action is not threatening."
14f. "I do not have the materials available to take an action towards my project."
14g. "Taking an action right now is intimidating."
14h. "I have some time available to take an action."

15. Demographics
15a. Gender
15b. Age
15c. Any reason to not include responses
15d. Mturk ID

Details on data cleaning.

Initially, 408 participants started the study. Thirteen got timed out due to writing for shorter than one minute about their project and 24 voluntarily did not complete the study. Thus, 371 participants completed this study. Of these, two did not name an actual project in the project field and two reported in the optional text that they may have taken a similar survey before; all four were removed from the analysis. This, the data from 367 participants was used in this study.

Data on two other factors that are not theoretically predicted.

One group of thoughts about the project as using low effort (α = .78) included the item "It is a small action." This thought of taking an action as low effort cannot be a mediator because there are no main effect or interaction differences between conditions (Fs <1.05).

Another group of thoughts about not having the resources for the project (α = .68) included statements such as "I don't have time to take an action right now." This thought of not having the resources to take an action has a main effect such that such that the stuck participants (M = 3.85, SD = 1.66) reported having a greater belief in the lack of time and resources than did the making-progress participants (M = 3.43, SD = 1.64); $F(1, 361) = 6.16$, p = .014, but there were no interaction effects.

APPENDIX I. Items Corresponding to Each Factor in Study 4 (Mediation Study)

Expectancy (4 items; α = .87)
Likelihood of attaining desired result
Probability of finishing the project
Completing my project feels fairly doable.
Reaching the end of my project seems achievable.

Value (3 items; α = .83)
My project is important.
My project is valuable.
The outcome of my project is important.

Motivation (3 items; α = .87)
I am motivated to work on my project.
I have a renewed interest in my project.
I look forward to working on my project.

Need for Structure (6 items; α = .89)
After following the instructions in this survey…

> … I am finding that having a well-ordered approach to my problem is helpful.
> … I feel that structuring my day-to-day approach to my project can make me more productive.
> … I believe that approaching my project with clearly stated objectives and requirements can make me more effective.

Thinking about the process is helpful to moving forward on my project.
Following a good process may the difference between my success and failure on this project.
Breaking my project into smaller steps is helpful.

Thoughts about an action: It's a small effort (3 items; α = .78)
It is a small action.
This action takes me a small amount of effort.
The action is not threatening.

Thoughts about an action: I don't have time or resources (3 items; α = .68)
I don't have time to take an action right now.
I do not have the materials available to take an action towards my project.
I have some time available to take an action. (R)

Thoughts about an action: Being overwhelmed (2 items; *r* = .64)
Taking this action could feel overwhelming.
Taking an action right now is intimidating.

APPENDIX J. Full Set of Manipulations across All Pilots and Studies.

Pilot 1 (Coaching Survey #1 about Coaching Fee and Framework Beliefs)

No manipulations used.

Pilot 2 (Coaching Survey #2 about Client Progress)

A 2-condition study design.

Progress manipulations:

> ***Stuck condition:*** "Consider a client who has come to you with an issue on which he or she is very much stuck."
> ***Making progress condition:*** "Consider a client who has come to you with an issue on which he or she is very much making progress."

Pilot 3 (Understanding Stuck Pilot)

A 2-condition study design.

Progress manipulations:

> ***Stuck condition:*** "Think about an important project you'll be working on in the next month on which you **FEEL STUCK**."
> ***Making progress condition:*** "Think about an important project you'll be working on in the next month on which you **FEEL THAT YOU ARE MAKING PROGRESS**."
>
> "It could be a personal project (like practicing more on a hobby or calling a friend more) or a professional project (like becoming more organized or spending more time on any aspect of work)."

Study 1a (A Priori Beliefs Study)

A 4-condition study design.

Project manipulation:

> "Choose an important project you'll be working on in the next month. Other people have described projects that include renovating the kitchen cabinets, de-cluttering the living room, making a quilt or afghan, applying for jobs, and catching up on work organizational tasks."

Frameworks:

> ***Framework-absent control:*** "Describe any aspect of your project."
> ***Flimsy framework:*** "1) Think about how you make a sandwich. Describe what you think about when you are making a sandwich.
> 2) Consider your answer to making a sandwich. Describe how your thinking about making a sandwich could help you work on this project. Please reply in detail."

General process framework: "1) Think about how you work on a project in general. Describe what you think about when you are working on a project in general.
2) Consider your answer to working on a project in general. Describe how your thinking about working on a project in general could help you work on this project. Please reply in detail."
Goals framework: "1) Think about setting a specific and difficult, yet attainable, goal for yourself on this project.
2) Consider the goal you have just set. Describe how your thinking about your specific and difficult, yet attainable, goal could help you work on this project. Please reply in detail."

Study 1b (A Priori Beliefs Study)

A 3-condition study design.

Project manipulation:

Same as in Study 1a.

Frameworks:

Framework-absent control: same as in Study 1a.
Flimsy framework: same as in Study 1a.
Steps framework: "Describe the steps you could take to work on this project."

Study 2 (Library Texting Study)

A 2x3 study design.

Project manipulations:

"1A) Please list all the subjects that you have in your backpack on which you could possibly work during this trip to the library (including any subjects you can work on online if you have your laptop with you):"
Most-stuck condition: "1B) Of these above subjects, what is the school subject on which you feel the most stuck?" OR
Most-progress condition: "1B) Of these above subjects, what is the school subject on which you feel you are making the most progress?"

Frameworks:

No framework: "2A) You already know how to make a sandwich. Please describe what you think about when you are about to make a sandwich. Describe any aspect of making a sandwich in detail.
2B) List the kind of sandwiches you would expect to see on the menu board of a sandwich shop. Please reply in detail."
Flimsy framework: "2A) You already know how to make a sandwich. Please describe what you think about when you are about to make a sandwich. Describe any aspect of making a sandwich in detail.

2B) Take your answer to making the sandwich and describe how it may be similar to how you would approach working on the subject in the shaded box. Please reply in detail."
Goals framework: "2A) Set a specific and challenging goal for doing well this term in the subject you wrote in the box above.
2B) In what ways is your goal specific? In what ways is your goal challenging?"

Study 3 (Weekend Projects Study)
A 3-condition study design.

Project manipulation:

Stuck condition: "Choose an important project that you could be working on this weekend on which you **FEEL STUCK**.
People have described projects that include cleaning a mess in the kitchen, weeding a garden, making a quilt for a friend's child, and working on home repair."

Frameworks:

Framework-absent control: "Describe any aspect of this project."
Flimsy framework: "1) Think about how you make a sandwich. What do you do when you are making a sandwich? Describe what you think about when you are making a sandwich.
2) What are the similarities between making a sandwich and working on this project? How could your answer about making a sandwich help you tackle working on this project?"
Steps framework: "Describe the steps you could take to work on this project."

Study 4 (Mediation Study)
A 2x3 study design.

Project manipulations:

Stuck condition: "Choose an important project you'll be working on in the next month on which you **FEEL STUCK**."
Making progress condition: "Choose an important project you'll be working on in the next month on which you **FEEL THAT YOU ARE MAKING PROGRESS**."

"Other people have described projects that include renovating the kitchen cabinets, organizing the closets from summer to fall, writing the next chapter of a book, making a quilt for an upcoming birthday, and reorganizing the filing system at work."

Frameworks:

Framework-absent control: Same as in Study 3.

Flimsy framework: Same as in Study 3.

General process framework: "1) Think about how you work on a project in general. What do you do when you are working on a project in general? Describe what you think about when you are working on a project in general.

2) What are the similarities between working on a project in general and working on this project? How could your answer about working on a project in general help you tackle working on this project?"