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AIM:
An Integrative Model of Goal Pursuit

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Effective goal pursuit is integral to organizational success. Because of this, a large number of models have been developed that describe the process of goal pursuit in whole or part. However, these models often have little overlap with one another, making it unclear how they relate to each other, and they do not incorporate emerging evidence from neuroscience about "brain-friendly" modes of goal pursuit. We solve these two problems by proposing the AIM framework of goals, a neurally-informed model which divides the goal pursuit process into three parts—Antecedents, Integration, and Maintenance. This framework organizes existing models by describing where in the overall goal pursuit process they fit (e.g., the SMART model is about goal setting, which is an antecedent), and thus has the distinct advantage of being able to integrate across existing models in a meaningful way. Because it is based in neuroscience, the framework can also serve as a bridge between the neuroscience and organizational/leadership fields over which relevant knowledge about brain functioning can be imported into the study of goal pursuit for organizations. In this paper, we briefly review popular models of goals and describe where they fit within the AIM framework, describe each step of AIM and the corresponding current neuroscience knowledge, and then discuss how the AIM framework can set an agenda for future organizational and neuroscience research in this area. This paper is written to be equally relevant to and useful for those pursuing their own goals as well as those facilitating goal pursuit in others.

AIM: An Integrative Model of Goal Pursuit

by Elliot T. Berkman and David Rock

Goals are a critical part of organizational life. In a sense, organizations are giant collections of interconnected goals. There are goals set for tangible issues such as revenues, profits, market share, or new products, which are reported out in public companies, with significant impact on share price movements based on whether or not these goals are achieved. There are also intangible goals around consumer sentiment, service levels, or employee engagement. Organizations set a wide range of goals across a variety of metrics, from multi-year goals to annual goals, from goals for a quarter to goals for a month, week, or even for the day. People at nearly every level in organizations are managed against these goals in systems that determine their career prospects and compensation. Leaders play a critical dual role in goal pursuit in organizational contexts, both facilitating goal pursuit in others and providing examples of positive goal progress as they strive toward their own goals in view of others in the organization. With so much goal setting going on, one might think that organizations would be passionately following the research on effective goal setting and pursuit and using that research to tweak their organizational strategy for goal achievement, the same way a technology company might closely follow developments in the use of silicon. However, this does not appear to be the case.

Most organizational goal setting processes are based on ideas that are decades old, with little updating from new findings from psychology or neuroscience. If your organization promotes "SMART" goals, you might be interested to know this idea was published in the 1980's (Doran, 1981), and the science of goal setting has advanced substantially since that time. Thus, the main purpose of this paper is to review recent scientific developments, particularly in neuroscience, as they relate to popular models of goals. As part of this review, we will present an overarching framework for goals that accommodates both the existing models and the new evidence.

There is one peculiar feature of goals that makes them simultaneously difficult to pursue and to study: Integration. Success at a goal is caused by the integration of a collection of small victories, carefully orchestrated, across both physical and mental time and space. Before we can ask how to be successful at goal pursuit, whether the goal is increased sales or improved personal confidence, we must first ask what a goal even is. Is the goal the small steps, the desired endpoint, or the path that took you there? Thinking about goal pursuit in this way introduces a useful metaphor for goal pursuit—the road trip. Just like a goal, a road trip is not defined merely by its destination or its pit stops or even the roads travelled en route; just like a goal, a road trip is an emergent gestalt that is greater than any one or all of the parts. It follows, then, that to study goals with the ultimate purpose of understanding and improving how humans pursue goals, one must consider the entire "road trip" in part and in whole, and particularly how those come together in synthesis. Here, we propose a new framework for thinking about goals that recognizes their inherently multi-component and integrative nature. This framework provides a means to (a) organize existing models of goals (e.g., SMART) and point out connections between them, (b) to highlight places where neuroscience

can provide insight into goal models, and (c) to guide future research and leadership on goals. We developed the AIM framework to be equally relevant to and useful for those pursuing their own goals as well as those facilitating goal pursuit in others.

In the first part of this paper, we briefly review current models of goal pursuit (see Moskowitz & Grant, 2009 for a more comprehensive guide), explaining how each model fits into our new overarching framework. Next, we describe the three components of the framework, illustrating each with empirical research from psychology and neuroscience. Finally, we conclude with a discussion of future directions for the science of goals that are unlocked using our framework and important open questions.

Existing Goal Pursuit Models

A proper review of existing models of goal pursuit could fill a book—and has several times over (e.g., Aarts & Elliot, 2012; Locke & Latham, 1990; Moskowitz & Grant, 2009). Rather than to reiterate what has already been written about goal pursuit models, our purpose in this section is to explain how these existing models can be encompassed within a larger framework that also includes recent neuroscientific developments and why any individual model has limited power to explain success or failure in goal pursuit. Thus, the word "integrate" in this paper serves a dual purpose, referring both to the integration of various components of goal pursuit themselves, and the integration of current goal models, into a broad and unified framework. We begin by mapping a few existing models onto the road trip framework which maps onto the three phases of a road trip. Though the list of models reviewed here is by no means exhaustive, we believe it is representative of current ideas in leadership and psychology and serves to illustrate the usefulness of our framework for organizing current and future thinking in this area.

Before the Trip Begins: Goal Setting

Many popular models of goals focus mainly on the first step in the process—goal setting. In the road trip metaphor, goal setting involves planning the route, packing the gear, and making sure the vehicle is up to snuff to make the journey. Models of goal setting provide insight about the structure of the goal as a mental object—how it should be defined, what it should contain, and so forth. Examples include SMART goals, which are Specific, Measurable, Attainable, Realistic, and Time-bound (Doran, 1981; Locke & Latham, 2006), and the GROW model of coaching, which includes Goal setting, Reality checking, development of Options, and What-when-whom questions that specify the conditions of action (Gallwey, 2000, attributed to John Whitmore). Each of these models provides excellent guidance about what a goal should be in a cognitive or informational sense. At the goal formulation stage, they address what kinds of information a useful goal should contain (e.g., dates, specific actions) and what kinds of information should be associated with it (e.g., alternative options, outcomes). This approach is the predominant model in how organizations educate their employees to set goals across both day-to-day as well as annual performance management systems. Goal setting, according to these models, is about the mental work you do to map out and prepare for your journey before it begins.

The greatest strength of goal-setting models is their focus on the cognitive/informational aspects about goals, but that upside comes at the cost of neglecting the emotional and motivational parts of goals.

As important as the information provided by goal setting models is, no one—not even the progenitors of those models—claims that there is nothing more to goal pursuit than goal setting. The greatest strength of goal-setting models is their focus on the cognitive/informational aspects about goals, but that upside comes at the cost of neglecting the emotional and motivational parts of goals. Neuroscience in particular can contribute to these models because of the increasingly detailed picture it paints of motivation. Another limitation attached to the cognitive focus of goal setting models is their silence on what might be called "human factors" in goal setting. The SMART model is ideal for teaching a robot how to set a goal; just input the right parameters and set it off to go. But humans are another case because we need more

than just information; humans are sensitive to how goals are framed and the subtleties of how a given goal relates to other aspects of our personalities. Though the SMART model has been updated to some degree to reflect some of these concerns (for example, by adding "Appealing" to the list of A terms to acknowledge the power of attractive marketing in goal setting), it still provides guidance on only one aspect of goal pursuit. Goal setting is the beginning, not the end, of the goal pursuit process. We've only just hit the road. Despite this, goal setting is sometimes the end of the road for how organizations think about goal pursuit.

Hitting the Road: Goal Striving

In contrast to models of goal setting reviewed above, other models engage mostly with the actual process of taking action toward the goal, which we'll refer to as goal striving. Following the road trip metaphor, goal striving involves navigating the route to the destination, managing roadblocks, and deciding when to stay on the road and when to take a pit stop. This aspect of goals is where theoretical models from psychology shine, often under the rubric of self-regulation, including self-discrepancy theory (Higgins, 1987), action control theory (Carver & Scheier, 1980), and goal systems theory (Kruglanski, Shah, Fishbach, Friedman, Chun, & Sleeth-Keppler, 2002). Each of these theories offers a model and, sometimes, practical guidance about how to get from the start to the finish of a known (i.e., already set) goal. They engage with topics such as the perceived distance from the goal, the role of emotion in guiding action, and how multiple goals compete and cooperate when pursued simultaneously. Unlike goal-setting theories, they posit an explicit role for motivation and describe where it comes from and how it can be enhanced.

In the road trip metaphor, these models of goal striving tell you which roads to take, when to accelerate or brake, and which maps are the best. This is exactly the kind of information you need when you're behind the steering wheel. However, when you're behind the steering wheel, you also tend to lose sight of the overall journey because you're focused on the goal immediately ahead. Some of these models, notably Carver and Scheier's (1980) action control theory, address this scope-of-perspective problem by introducing the idea of a goal hierarchy, or an organization of goals ranging from tangible and near-term on one end, and abstract and long-term on the other.

Recent advances in neuroscience have unveiled how the brain processes goal hierarchies, which in turn have yielded important insights into more effective integration across their levels. Other research suggests a critical role for self-processing during goal striving, which has expanded the existing psychological theories in new and unexpected ways with direct implications for improving goal striving. Still, like those of goal setting, models of goal striving on their own do not account for how goals lead to lasting change. For that, we turn to another topic: Goal maintenance.

Cruise Control: Goal Maintenance

Getting onto the highway and headed in the right direction can be hard. Goal striving is cognitively effortful, in the sense that it requires precious and limited resources such as attention, working memory, and self-regulation. Over the long haul, having to rely upon those powerful yet finite capacities for goal striving is a road that leads only to failure; an achievable goal is one that can be sustained using less effortful, more "automatic" processes such as habit. Psychologists have studied habit for over a hundred years (James, 1890) and have made some important discoveries—particularly about the critical role of reward (Berridge & Robinson, 2003) and learning (Shiffrin & Schneider, 1977)—and new data from neuroscience have sharpened those insights even further. Also, and particularly relevant to organizational settings, social psychologists have recently taken up the question of whether and how the social context can support goal maintenance. This is particularly important given how deeply social most work has become, where teams of people now need to collaborate more than ever to achieve many organizational goals. The results from these studies underscore the powerful effect of the social environment on habit formation and goal maintenance, and as such demand to be included in any overarching framework of goal pursuit.

Goal setting is the beginning, not the end, of the goal pursuit process.

Taken together, the facts that existing models of goals focus on only one of the three phases of goal pursuit described above and insights from neuroscience have not yet been integrated into most of the models indicate that it is time to change the way we think about the goal-pursuit process. We need a model that integrates previous work into a unified framework and that accounts for research in neuroscience that is illuminating previously dark corners of the scientific study of goals at an accelerating pace. Over the last several years, we have developed the AIM model, a neurally-informed and integrative model of goal setting, striving, and maintenance, to fulfill exactly this role.

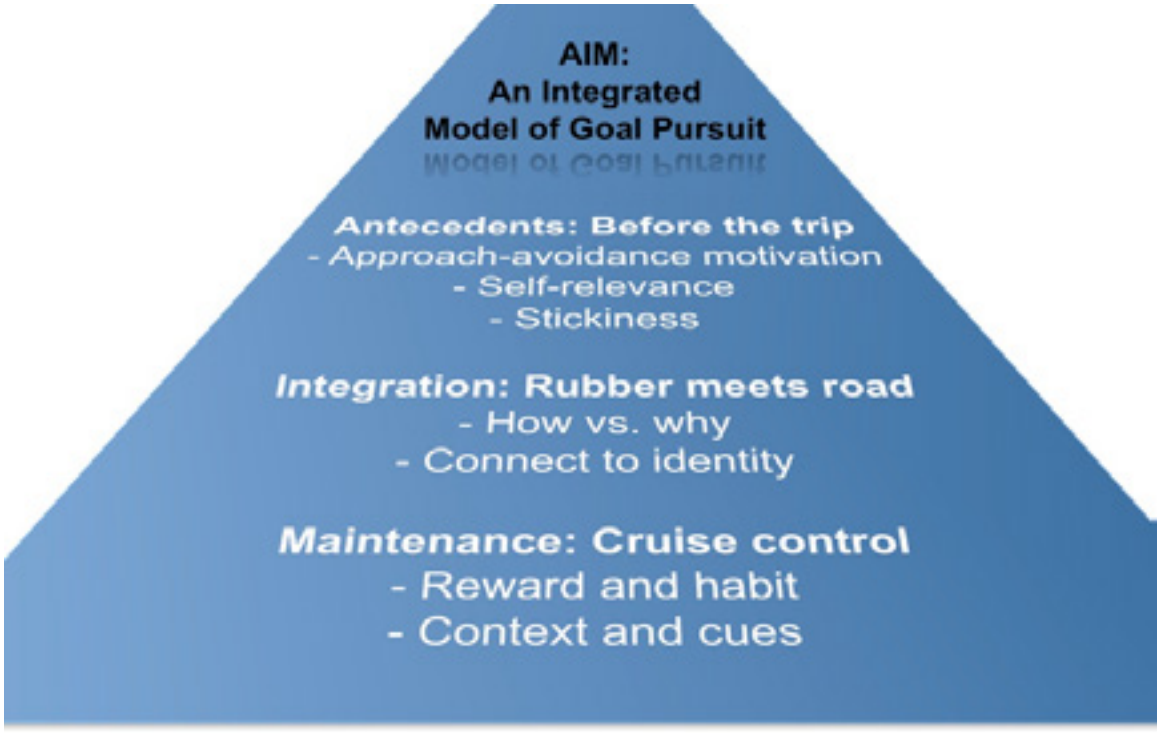

Figure 1. The AIM model of goal pursuit.

An Integrative Framework for Goal Pursuit: The AIM Model

Our model organizes existing theories into a unified framework and moves beyond them by importing knowledge from neuroscience to each phase of goal pursuit. The model is called AIM, which stands for Antecedents, Integration, and Maintenance (Figure 1). The AIM framework reflects the three phases of goal pursuit reviewed above: Goal setting is an antecedent, goal striving is where integration happens, and habit formation is important for maintenance. The AIM model is innovative and significant for two main reasons: First, it integrates neuroscience evidence into each phase of goal pursuit, and thus uses brain function as one way of unifying across the different phases of goal pursuit. This is particularly important right now, given the current dearth of neuroscience research on goal pursuit, because the AIM model will serve as a tool that researchers and practitioners can use to map existing neuroscience knowledge onto current and future models of goal pursuit. Second, the role of motivation is imbued throughout the model. At each phase of the goal-pursuit road trip, motivation plays a central role, sitting in the front seat, helping the driver navigate the road for the entire journey. We view AIM as a way of organizing knowledge about goals (e.g., the SMART model for goal setting, reward learning theories of habit for goal maintenance) into a unified framework, which in turn enables scientists and practitioners to easily identify areas where insights from neuroscience are relevant and also where further research is needed. In the following sections, we describe how new research from neuroscience and psychology build upon existing models at each stage, and what that means for effective goal pursuit.

Antecedents: Essential Luggage for Any Road Trip

We noted above that existing models of goal setting focus on the cognitive aspects of goals such as what pieces of information they should specify and be linked with. Those models are great as far as they go, but are "cold" in that they do not contain any emotional or motivational elements. The "hot" parts are what make a goal exciting and which sustain our focus through the rough patches and for the long haul. Approach-and-avoidance motivation (Gray, 1970) has long been considered one of the most powerful ways to heat up the motivational temperature of goal. The general idea is that there are two systems for motivation: One that is sensitive to reward (the approach system) and another that is sensitive to punishment (the avoidance system). Though we all have both of these systems, and indeed need each to survive, there are differences from person to person in the relative strength of one system compared to the other. One person might be more of an "approach" person, motivated by the desire for reward, success, or gain, whereas another might be more of an "avoidance" person, motivated by the fear of punishment, failure, or loss. As you might expect, setting a goal that is matched to a person's trait level of motivation (i.e., more

approach or more avoidance) increases the likelihood of that goal being successful. For example, people who are approach-motivated are more likely to floss after seeing messages that flossing promotes good breath, whereas people who are avoidance-motivated are more likely to floss after seeing messages that not flossing causes bad breath (Mann, Sherman, & Updegraff, 2004). Identifying a person's trait level of motivation (e.g., using an existing measure; Carver & White, 1994) and framing the goal to match it is a strong and evidence-based way to increase motivation. While not a hard and fast rule, jobs involving potential gains such as sales will tend to be filled by those who identify as approach-motivated, whereas jobs involving mitigating losses, such as legal or compliance jobs, may be filled by those who identify as avoidance-motivated.

The neuroscience behind approach-avoidance motivation provides even more clues about how to leverage motivation to enhance goal setting. One of the earliest findings in motivation neuroscience is that there is a large hemispheric asymmetry in the prefrontal cortex (PFC) between approach- and avoidance-motivational states: Individuals who are approach-motivated (either as an enduring trait or as a temporary state) show greater left (than right) PFC activation, whereas individuals who are avoidance-motivated (again, either as a trait or state) show greater right (than left) PFC activation (Coan & Allen, 2004; Sutton & Davidson, 1997). What is fascinating is that this neuromarker of motivation tracks the goal value of an action regardless of the intrinsic value of the action (Berkman & Lieberman, 2010); approaching creates left-lateralized PFC activation even if what is being approached is unpleasant, and avoiding creates right-lateralized PFC activation even if what is being avoided is otherwise tempting. Put another way, PFC asymmetry supports goal actions even, and perhaps especially, when they work against the path of least resistance. The fact that PFC asymmetry is stable over time within a given person indicates that people have a preferred direction of travel along that path, so setting goals so they flow in the right direction for an individual can help motivate the goal to stay on track for the long journey.

The notion of tailoring goals to be consistent with trait motivation is one way to make that goal more self-relevant, or linking the goal to a person's enduring sense of who they are. Neuroscience has recently uncovered an interesting overlap between the brain systems involved in thinking about oneself and particularly about one's goals (Cunningham, Johnsen, & Waggoner, 2011) and value (Hare, Camerer, & Rangel, 2009). One region in particular—the ventromedial PFC, or vmPFC—is active when contemplating the value of something (a purchase or decision) and also when thinking about one's own traits, preferences, and identity (Kelley, Macrae, Wyland, Caglar, Inati, & Heatherton, 2002). It is not hard to make the logical leap from there to the prediction that, at least to the brain, the self is rewarding. Indeed, theoretical perspectives from neuroscience are already beginning to make this case (e.g., Schmitz & Johnson, 2007). Another way of thinking about this is that goals that have achieved the status of being highly self-relevant will be rewarding intrinsically because of their close connection to the self. For instance, a person who identifies strongly as being budget-conscious may be able to overcome the desire to spend money on fun but not on unnecessary office equipment, because the temptation is counterweighed by the reward of reinforcing his or her identity.

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One final "hot" element that has been missing from models of goal setting to date is "stickiness," or how to set goals that will always be at the front of your mind and on the tip of your tongue. Stickiness is important because people are busy and have only limited attentional resources—a goal that does not stick firmly in mind can easily be washed away in the tidal wave of other priorities and distractions. So what is the best way to leverage goal setting to make goals sticky? In a word: Tangibility. Goals should be related to concrete objects and manifest actions as much as possible. Though our brains are capable of abstract thought (which will be relevant in the following section), that kind of thinking requires effort and concentration, and is not our default way of thinking. Neuroscience has supported this idea by providing evidence that new concepts (e.g., goals) that are linked closely to action are more easily learned, recalled, and acted upon compared

to concepts that are not linked to action, primarily because tangible goals activate associated motor and object identification regions in the brain (Jirak, Menz, Buccino, Borghi, & Binkofski, 2010; Kuhn, Keizer, Rombouts, & Hommel, 2011; McNamara, Buccino, Menz, Glascher, Wolbers, Baumgartner, et al., 2008). In the words of the psychologist Susan Fiske (paraphrasing the inimitable William James), "Thinking is for doing" (Fiske, 1992). The lesson for goal setting is to craft your thinking to resemble doing as much as possible.

Goals should be related to concrete objects and manifest actions as much as possible.

Integration: When the Rubber Meets the Road

Setting SMART and motivation-savvy goals is only the first step. The next phase of goal pursuit is striving to attain those goals in a process we call integration. The critical part of integration is to maintain cohesion between the near-term, concrete actions of goal striving and the long-term, abstract objectives of the goal. A useful tool to think about integration is the idea of a goal hierarchy, where smaller, concrete actions are embedded within larger, abstract goals (Carver & Scheier, 1980). Arranging a goal in this way gives it structure and, because of that, can be incredibly helpful when roadblocks crop up.

For example, suppose I have the goal of increasing my productivity by 10% this quarter. I can locate that goal within a hierarchy by identifying the higher-order goals above it and the lower-order goals below it by asking two critical questions: "Why" and "how," respectively. Why do I want to increase productivity by 10%? Because I want to be a good employee (a higher-order goal). How can I increase productivity by 10%? By working an extra hour each day (a lower-order goal). I can dig further up or down by repeating this process: How can I work an extra hour each day? By starting 30 minutes sooner and staying an extra 30 minutes later. Why do I want to be a good employee? Because I want to feel like a competent person. Try engaging in this process for one of your goals and see what happens when you elaborate on your goal by embedding it in a hierarchy.

Several useful properties emerge from these hierarchies. Foremost, notice how motivation lives at the higher levels. We are motivated by the "why" of goals and their broader implications, usually boiling down to either achievement/competency or affiliation/belongingness (McClelland, 1987). These kinds of motivations can also be viewed through the lens of the SCARF model (Rock, 2008). For example, a feeling of achievement (Status), competence (Autonomy), or belongingness (Relatedness) all activate the primary reward network of the brain, which means they impart an intensely rewarding experience similar to physical pleasure. In short, the "why" of goals may be deeply intrinsically rewarding, especially when this "why" connects to social needs and motives.

Conversely, the "how" of goals contain the details of their implementation but are otherwise devoid of inherent meaning. The implication of this is critical: Success at a goal requires both a will and a way, both the why and the how. Also, note how each higher-order "why" goal can be achieved through many different "how" goals. There are many different ways to be a competent person, to be a good employee, and to increase productivity. This point highlights another critical feature of the goal hierarchy, which is that flexible and fluid movement up and down within it (using why and how questions) is absolutely essential. If at first you don't succeed, try again—by moving up the hierarchy asking "why," generating a new plan by asking "how," and then implementing that new course of action. Moving up and down the hierarchy is like taking an alternative route when your original course is blocked, one that still gets you to where you ultimately want to be.

Success at a goal requires both a will and a way, both the why and the how.

Neuroimaging studies of goal hierarchies have revealed a stunning insight into goal pursuit. The brain systems for thinking about "why" and "how" are entirely separate (Spunt, Falk, & Lieberman, 2010), and may in fact be mutually inhibitory (Fox, Snyder, Vincent, Corbetta, Van Essen, & Raichle, 2005; Sprengler, von Cramon, & Brass, 2009). "Why" thinking engages networks for intention and mental state reasoning, whereas "how" thinking engages in networks for action preparation and object identification. This finding echoes the conclusion from the psychological literature that both "how" and "why" thinking are required for successful goals, but it goes beyond what was previously known in suggesting that they cannot both be activated simultaneously. More specifically, they cannot be activated within the same person at the same time. One major implication is that

another person's perspective (e.g., a leader or coach) can be helpful in maintaining both kinds of thinking for a given goal. At the least, one critical skill for goal pursuit in the long run is the ability to switch adaptively between "why" and "how" modes of thinking to enable flexible movement throughout a goal hierarchy.

A final insight into goal integration comes from the study of the self. We wrote above that "why" thinking engages brain systems that are otherwise involved in mental state attribution. "Why" is about intentions, and one of the central regions for thinking about intentions—the medial PFC—is also central to thinking about the self (and directly adjacent to the vmPFC described above; Amodio & Frith, 2006). There is perfect convergence here between neuroscience data and psychological theory: The self, writ large, including one's identity, preferences, and long-term aspirations, is the ultimate answer to every "why" question (Carver & Scheier, 1980). The motivation for any action, when viewed from high enough in the goal hierarchy, is to move closer to an ideal version of oneself. We pursue goals, fundamentally, to live up to standards that we and others set for ourselves, to become different and better people (Higgins, 1987). It is for this reason that striving to attain goals—aside from attaining them—is related to overall well-being (Sheldon & Elliot, 1999). Drawing from all of this, we suggest that the idea of "self-concordance", or the degree to which a goal is seen as fulfilling core values of an individual, will impart to that goal sustaining motivation because actions toward that goal (i.e., the lower-level "hows") will always be integrated with the ultimate "why"—the self.

Maintenance: Cruise Control and Staying the Course

The final leg of the goal pursuit journey is maintaining the behavior change that was earned during goal striving. Prevailing knowledge on how to do that mostly involves habit and automaticity: Repeat something enough times, and reward it consistently, and it will become routine and, importantly, less effortful. Consider learning to drive. When you first learn, you need to consciously think about how fast to turn the steering wheel, how hard to step on the pedals, and how to sequence those actions to get the car where you want it to go. Through this process, some actions are reinforced because they move the car in the desired direction and others are not, and after a while you can drive effectively while singing along to the radio or chatting with your passengers without thinking about driving at all.

Goals can become automated in this way, too, and some elegant neuroscience has specified how. A tiny part of the brain's reward system, the striatum, is involved in building associations between actions and rewards (Liljeholm & O'Doherty, 2012). As those associations are built, activation within that region migrates from the anterior (front) to the posterior (back) aspects of the striatum, effectively handing off control of actions from a goal-directed action system to more habit-based action system (Jankowski, Scheef, Huppe, & Boecker, 2009; Tricomi, Balleine, & O'Doherty, 2009). Critically, the habit-based action system is triggered by learned cues more than by rewards, so one of the key lessons for goal maintenance is to be deliberate about which cues are paired with your goal as you work toward it, then use those cues to launch the habit system into action during goal maintenance.

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Research from our group has further elucidated the brain changes to accompany the transition from effortful to automatic goal striving. We wanted to test the boundaries of reward learning to see if they would extend to even highly effortful parts of goal pursuit such as self-control. To do this, we had our participants practice one kind of self-control (response inhibition) for three weeks, and we measured the change in their brain activity from before to after. What we found was fascinating because it painted a new picture of how the brain learns to automate self-control. Instead of merely getting stronger with practice, the brain activity associated with self-control shifted earlier in time to peak slightly before self-control was actually required (Berkman, Kahn, & Merchant, 2014). This result is in line with a new, neurally-informed model of how self-control works called dual mechanisms of control (Braver, 2012), which describes the effects of practice or expertise in terms of shifts in time from later, reactive control to earlier, proactive control. The key advantage of proactive control derives from the fact that it's far easier and more effective to engage self-control ahead of time rather than wait until it's absolutely necessary, much in the same way

that it's easier to stop your car by slowing down at the yellow light rather than slam on the brakes when the light turns red. The lesson for goal maintenance is to learn how to detect cues or situations that are the equivalent of yellow lights for goal pursuit that signal when to slow down, pull over, or turn on to a new road. This is especially important in organizational life, when people will often be cognitively depleted from lack of sleep, chronic stress, or simply dealing with too many distractions. In this instance, self-regulation after the fact may well fail due to limited resources for regulating.

...it's far easier and more effective to engage self-control ahead of time rather than wait until it's absolutely necessary...

From a broader perspective, the insights from neuroscience about goal maintenance are encapsulated in the idea that goal maintenance is highly sensitive to the context. What do we mean by "context?" In our inclusive definition, context includes not just the physical world with its cues and nudges for action, but also the intra-psychic milieu of one's own habits of thought and, critically, the interpersonal social environment. The social world provides one of the most important and unexplored forces that maintain or derail goals for the simple reason that other people are powerful, perhaps the most powerful, contextual influences on us (Lieberman, 2013). Preliminary research has begun to explore exactly how, for example by illustrating how "instrumental others" can help us achieve our personal goals when we draw closer to them (Fitzsimons & Shah, 2008), and that even thinking about becoming closer to an instrumental other can make us feel like we're making progress toward our goals (Slotter & Gardner, 2011). An elegant study using electroencephalography found that closely watching others—but not strangers—make a mistake on a learning task creates the same neural signature in our brains as would making that mistake ourselves (Kang, Hirsh, & Chasteen, 2010). The lesson here is simple: Seek out and engage with people who will help with your goals. The social environment you build can help you set better goals, learn more from your mistakes and those of others, and sustain your efforts on the long journey toward your goal.

Conclusions and Future Directions

We have described the AIM framework of goal pursuit. The framework organizes current thinking about goals into antecedent, integration, and maintenance phases, and leverages new knowledge from neuroscience to form a deeper and more comprehensive understanding of goals. The model also emphasizes the overlooked importance of trait motivation in goal setting, self-processes in goal striving, and automaticity and social context in goal maintenance. The goals of the AIM framework are twofold: to provide an integrated account of the entire goal pursuit process that recognizes its heterogeneous phases and the various processes that are relevant to each, and to import emerging insights gained from the study of the human brain to the study of human goal pursuit. As such, we view the AIM framework as merely the beginning of the work that needs to be done in this area.

The AIM model also suggests some exciting opportunities for research on the horizon. We'll hint at a few here, and encourage the reader to think creatively about the AIM model and how it might be approached in new ways using neuroscience. First, consider the antecedents to a journey into unknown territory. One important planning step is to imagine what potential hazards might be on the road ahead and to plan for them to the extent possible. The psychological name for that plan is an implementation intention, or a preconceived if-then statement that pairs a particular eventuality with a specific action to deal with it (Gollwitzer, 1999). Neuroscience has only just begun to reveal how that kind of future thinking works and why it is valuable (Peters & Buchel, 2010), and implementation intentions have never been applied systematically to goal maintenance. Second, we highlighted the importance of maintaining integration between higher-level "why" motives and lower-level "how" actions, but also noted that the brain networks that implement "how" and "why" thinking may be mutually antagonistic. However, other recent evidence has revealed a surprising amount of neuroplasticity in adulthood as a function of "brain training" interventions (Bryck & Fisher, 2012). Would it be possible to develop the ability to maintain both "how" and "why" thoughts simultaneously? We know which neural circuits to target, and the upside of improving that ability would be immense. And finally, some of the research we described hinted that even high-level functions such as self-control could become automated under the right conditions. Can other complex capacities, ones that usually feel "effortful" or mentally taxing, become routinized as well? What about the entire goal pursuit process? There are inklings in the literature that this might be the case (Custers & Aarts, 2010), but the full extent of the power of habit learning for sophisticated behaviors is unknown.

There are far more questions than answers, but we don't want to leave you with a sense that nothing has been accomplished. Science has already yielded considerable knowledge about goals that proffers invaluable wisdom and makes models such as the AIM model possible in the first place. We hope that AIM will serve to sharpen that knowledge and make it even more relevant, even as it continues to develop. It remains to be seen whether approaches fitting within the AIM framework can address previously intractable problems. Indeed, one of the central purposes of AIM is to provide ways to organize new insights about goal pursuit and identify how those insights connect (or don't) to the current understanding. Our goal is to help organizations sharpen the effects of one of the most central tools in business by updating their knowledge about goal setting with fresh insights from psychology and neuroscience in a coherent and hopefully "sticky" form. The journey has already been worthwhile, and it has only just begun.

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