

## HOW CAN LEADERS OVERCOME THE BLURRY VISION BIAS? IDENTIFYING AN ANTIDOTE TO THE PARADOX OF VISION COMMUNICATION

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**Evidence suggests that organizational leaders can inspire employees by communicating a vision of the future with image-based rhetoric—words and phrases that are readily envisioned in the mind’s eye (e.g., “our vision is to make moviegoers laugh”). Yet research has demonstrated that most leaders do not craft visions with image-based rhetoric, instead favoring abstract language that cannot easily be visualized. We integrate theory on leadership and dual cognitive processing to argue that this problem is exacerbated when leaders focus on word selection when crafting visions because they overemphasize the meaning-based cognitive system (in which they consider the abstract meaning of words) and underemphasize the experience-based cognitive system (in which they can generate vivid mental images of what the future could look like). We introduce a novel tactic to help leaders activate the experience-based system and, in turn, generate and communicate more impactful visions. We also investigate boundary conditions. We test our predictions with three experiments featuring three distinct samples, including one with senior corporate executives and one in which members of the British government crafted visions on the day Britain announced it would exit the European Union (“Brexit”).**

Some of the most successful organizational endeavors have been credited to leaders who galvanized collective action by articulating a compelling purpose. For example, Bill Gates envisioned a “computer on every desk and in every home,”<sup>1</sup> John F. Kennedy challenged NASA to land “a man on the moon,”<sup>2</sup> and Henry Ford imagined a “motor car for the great multitude” that people could enjoy for “hours of pleasure in God’s great open spaces.”<sup>3</sup> The

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<sup>1</sup> The full quote is available at: <https://www.telegraph.co.uk/technology/3357701/Bill-Gatess-dream-A-computer-in-every-home.html>.

<sup>2</sup> The full quote is available at: <https://www.jfklibrary.org/Asset-Viewer/Archives/JFKWHA-032.aspx>.

<sup>3</sup> The full quote is available at: <https://www.thehenryford.org/collections-and-research/digital-resources/popular-topics/henry-ford-quotes/>.

extent to which leaders effectively articulate a sense of purpose is central to our understanding of not only how they inspire action, but the very concept of leadership itself, because leading is defined as the process of influencing others to achieve a common purpose (Locke, 1999). Indeed, one of the few points of overlap among a range of modern leadership theories is that the ability to convey a sense of purpose is one of the most essential leadership skills (Bass, 1990; Greer, Homan, De Hoogh, & Den Hartog, 2012; Nanus, 1992; Stam, Lord, van Knippenberg, & Wisse, 2014; van Knippenberg & Sitkin, 2013).

The above examples of Gates, Kennedy, and Ford are telling not only because each leader articulated a compelling purpose, but because they did so by employing image-based rhetoric, which we define as language that depicts objects (e.g., “cars”), actions (e.g., “driving”), and events (e.g., “landing on the moon”) that can be observed with one’s senses. Leaders can use image-based rhetoric to enliven one of the most important rhetorical tactics for communicating purpose: the vision (Stam et al., 2014). Compared to abstract rhetoric (e.g., “aiming for excellence”), image-based rhetoric engages employees’ emotions and provides a shared point of reference

around which different subgroups can coordinate (Emrich, Brower, Feldman, & Garland, 2001). By vividly depicting an event or outcome that an organization can one day realize, image-based rhetoric reflects the notion that a vision is a “portrait” of an ideal future (Rafferty & Griffin, 2004) and underscores the very essence of the word “vision”—the ability to see.

Despite the clear reasons for crafting and communicating vivid visions, leaders tend to communicate visions with abstract rhetoric (Carton, Murphy, & Clark, 2014; Emrich et al., 2001), a phenomenon we call the “blurry vision bias.” This bias largely stems from the reality that people tend to think abstractly as they ponder the distant future (Trope & Liberman, 2003). Given that dominant perspectives on vision communication assume that leaders can improve vision communication by carefully attending to word selection (Gardner & Schermerhorn, 2004), the solution to the blurry vision bias is ostensibly straightforward: leaders should consciously focus on incorporating image-based rhetoric into their visions. Consistent with this idea, those who argue for the value of imagery in vision communication have implicitly assumed that leaders who are informed of the importance of this type of rhetoric will be fully capable of incorporating it into their visions (Carton et al., 2014; Collins & Porras, 1994; Emrich et al., 2001).

We challenge this assumption by evaluating theory on vision communication through the lens of dual cognitive processing. When people focus their attention directly on language, they activate the part of their mind—the meaning-based system—responsible for considering abstract concepts (“superior customer service”) rather than the part of the mind—the experience-based system—responsible for processing sensory information about the outside world and mentally simulating real life experiences (“watching customers smiling as they dine in our lively restaurants”). When leaders do not have an image in their mind, they are less likely to employ image-based rhetoric in their visions. Thus, even leaders who deliberately focus on constructing visions with image-laden rhetoric are likely to continue to craft and communicate abstract visions.

To identify an antidote to the blurry vision bias, we further develop the link between leader communication and dual cognitive processing. We examine a tactic—mentally projecting oneself to a moment in the distant future, akin to mental time travel (Suddendorf, Addis, & Corballis, 2009)—that targets

the experience-based system rather than the meaning-based system. Rather than contemplate the distant future abstractly, this tactic impels leaders to imagine the future in vivid detail, as if they are directly observing a future scenario through firsthand observation. When leaders who take a mental leap forward in time are prompted to describe their mental imagery in words, they reflexively employ image-based rhetoric since it represents the most appropriate type of language for communicating vivid images. We further harness theory on dual cognitive processing to identify a personality difference (efficient versus analytical thinking) that explains which leaders benefit most from imagining how the distant future will be experienced firsthand. We test our predictions in three experiments—one launched on the day of “Brexit” (June 24, 2016, when Britain announced it was leaving the European Union) that featured British government employees (Study 1); one featuring leaders with various spans of control (Study 2); and one exclusively featuring upper echelon leaders (Study 3). In this latter study we assess whether the visions executives crafted as a result of our intervention inspired their employees.

Our findings redirect theory on leadership in several ways. Through a framework informed by dual cognitive processing, we shed light on a series of key questions pertaining to vision communication: why the blurry vision bias exists, what tactic can correct it, how this tactic works (mediating processes), and when it works most effectively (moderating processes). In doing so, we first explain why an assumption that underlies dominant perspectives in theory on vision communication as well as the intuition of leaders themselves (that leaders should focus intently on word selection), is incongruent with the nature of dual cognitive processing. We then introduce a parsimonious framework that brings theory on vision communication and dual cognitive processing into greater alignment. As such, we not only provide a deeper understanding of a key leader influence tactic, but also answer calls to more precisely chart the intersections between research on leadership, linguistics, and cognition (Shondrick, Dinh, & Lord, 2010). At a broader level, this integrated framework can change our understanding of how leaders should incorporate imagery on other occasions when they tend to use overly vague language, such as when they provide feedback and give task instructions (Kluger & DeNisi, 1996). We also discuss empirical contributions, including evidence for replicability via preregistered, high-powered designs

(Simmons, Nelson, & Simonsohn, 2011), and evidence for various forms of validity. Finally, our effort is practically useful: given that leaders are unlikely to increase their use of image-based rhetoric merely by being armed with the knowledge that such rhetoric is beneficial, our research illuminates an intervention leaders can use to create a more inspiring view of what their organizations can one day achieve.

### THE POWER OF IMAGE-BASED RHETORIC IN VISION COMMUNICATION

Meeting a person who benefits from one's help is more motivating than reading about it (Grant, Campbell, Chen, Cottone, Lapedis, & Lee, 2007); seeing one person die up close affects moral judgment more than does dropping a bomb on thousands from a distance (Eyal, Liberman, & Trope, 2008); and observing a measuring cup containing the amount of sugar in one soda deters soft drink consumption more than reading about caloric content (Heath & Heath, 2010). The effect of this type of vivid detail is not limited to when people witness events first hand, but extends to when they read text or listen to rhetoric that brings this type of vivid detail to mind (Fletcher, Frith, Baker, Shallice, Frackowiak, & Dolan, 1995). In contrast to words that capture ideas and generalities ("liberty," "difference," "excellence"), words that represent the observable world (e.g., "smile," "jump," "yellow") cause people to construct mental images by drawing on a cognitive store of prior encounters with external reality. Research on the vividness heuristic (Nisbett & Ross, 1980) and the identifiability heuristic (Nordgren & McDonnell, 2011) has demonstrated that verbal descriptions of images trigger emotions more powerfully compared to statistics and concepts (Bator & Cialdini, 2000). Beyond driving affective responses, image-based rhetoric compares favorably to abstract rhetoric because it provides a clearer sense of direction (Kluger & DeNisi, 1996). The impact of image-laden rhetoric on emotion and clarity causes people to be spurred into action more than does abstract rhetoric. For instance, a story of a single hungry child elicited more charitable giving compared to statistics about thousands of starving villagers (Small, Loewenstein, & Slovic, 2007), and people were more likely to quit smoking when they read about how their habit caused people to "reel back in disgust from the smoker's putrid odor" than when they

read about its adverse health effects (Smith & Shaffer, 2000: 777).<sup>4</sup>

Communicators can use image-laden rhetoric not only to depict the present, but also to provide a snapshot of events that have not yet transpired. As such, leaders can employ imagery when they articulate their organizations' visions of the future. To illustrate, Ekso (a company that makes robotic suits that help paralyzed people walk) created a vision to help one million people get up from their wheelchairs and walk (Edison Investment Research, 2014). Similar to how people find image-based descriptions of the present more compelling and clarifying than abstract descriptions of the present, they find image-laden visions of the future more emotionally engaging and easier to understand than abstract visions because they can simulate future events in their "mind's eye" rather than contemplate the future in general terms (Masuda, Kane, Shoptaugh, & Minor, 2010). This realism boosts motivation. In one study, registered voters from the U.S. who were given an image-laden vision of the U.S. government on the morning of Election Day 2016 were 11.3% more motivated to vote compared to participants given an abstract vision, and in another study full-time employees who were given an image-based vision worked for 47.8% longer on a creative task than employees who were given an abstract vision.<sup>5</sup> This latter effect was partially mediated by the vision's emotional impact and ease of comprehension, suggesting that imagery is both invigorating and clarifying. A vivid vision may also boost motivation by helping employees feel more connected to the organization's overarching purpose, because employees will feel that their day-to-day work is more closely tied to an event that can be witnessed or experienced one day in the future than to an end state that is abstract, amorphous, and unlikely to transpire in real life (Carton, 2018). Notably, the impact of image-laden rhetoric on followers extends beyond motivation: an examination of former U.S. President Barack Obama's visionary rhetoric on diversity found that

<sup>4</sup> Image-based rhetoric also explains variation in performance above and beyond goal specificity (Carton et al., 2014), which is typically conceptualized as the narrowness of a range of possible numeric performance targets (Locke & Latham, 1990). This is because numbers, despite being specific, are difficult to visualize (Guadagno, Rhoads, & Sagarin, 2011), and thus do not impact emotion and attention in the same way that image-laden rhetoric does.

<sup>5</sup> We provide information on both studies' methods in Appendix A at [blurryvisionbias.wordpress.com](http://blurryvisionbias.wordpress.com).

his use of image-laden phrases reduced prejudice compared to when he used abstract rhetoric (Stephens-Davidowitz, 2017).

Beyond boosting individual-level outcomes, image-based rhetoric has benefits for collectives because of its effect on social cognition. Vivid snapshots of the future, such as a movie studio's vision to "make moviegoers laugh," have only one basic interpretation, enabling followers from different subgroups to understand a vision's "central merits" in the same way (Stam et al., 2014: 1184–1185). This has implications for coordination: when hundreds or thousands of individuals and subgroups possess not only a mental image of the future, but the *same* mental image, they can more easily coalesce to realize a collective achievement. In one study, an image-based vision more strongly established a shared sense of purpose than did an abstract vision, and, in turn, the former helped boost group coordination and performance (Carton, Murphy, & Clark, 2014).<sup>6</sup> Reflecting these findings, image-laden rhetoric has been credited for galvanizing collective action—including during periods of change and uncertainty, when coordination is challenging (Carton, 2018). For instance, Martin Luther King's "I Have a Dream" speech is thought to have helped spark the U.S. civil rights movement in part because of the glimpses King provided of a future in which "the sons of former slaves and the sons of former slave owners will be able to sit down together" (Mount, 2010). Similarly, Susan B. Anthony helped advance women's rights by conveying a vision of a world that invoked women's equality not only in a general sense, but with language that prompted people to visualize women voting and writing laws alongside men (Stanton, Gordon, & Anthony, 1997).

In addition to enhancing follower outcomes, leaders who use image-based words improve their own standing. In two samples, Emrich et al. (2001) found that U.S. presidents who used image-based rhetoric were perceived to be more charismatic. Emrich et al. (2001) argued that image-based rhetoric has powerful effects on recipients' emotion and cognition, causing followers to view leaders more favorably.

<sup>6</sup> An image-based vision boosted team creativity when leaders complemented it with a focused value system (akin to how Martin Luther King, Jr. centered his images on one core value—equality) so that people not only visualize the future in the same way, but understand the underlying meaning of these images in the same way. However, Carton et al. (2014) found that imagery in vision communication has a direct influence on a shared sense of purpose and coordination.

When this evidence is taken together, we work from the premise that image-based visions are more beneficial compared to abstract visions for leaders as well as the individuals and groups they oversee. Moreover, for all their benefits, research has not yet identified clear downsides to vivid visions. Relative to abstract visions, image-laden visions do not restrict decision alternatives or suppress the ability for organizations to pursue paths that serendipitously present themselves. Consider a vision to "make customers smile." Since this vision can be realized via countless products and services, it does not constrain action.

### ILLUMINATING A DESCRIPTIVE–PRESCRIPTIVE GAP

Despite the upside of image-based rhetoric, less than 10% of leaders communicate visions with strong imagery—and, in total, they tend to communicate three to 15 times as much conceptual rhetoric as image-laden rhetoric when articulating visions (Carton et al., 2014; Emrich et al., 2001). Rather than allowing people to "see" the future with rhetoric that depicts scenes with graphic, ambient detail about objective reality, most visions almost exclusively contain lofty postulations (e.g., "change the world" or "serve the community") that possess multiple interpretations and push people to merely consider the future. As such, most visions are not truly "visionary." This pattern, which we call the blurry vision bias, is surprising not only because of the benefits of image-laden rhetoric but also because imagery maps onto the historical purpose of a vision, which is to counter the conceptuality of other rhetorical statements, including missions (Baetz & Kenneth, 1998), ideological appeals (Grant & Hofmann, 2011), and strategic objectives (Miller & Cardinal, 1994).

To understand how the blurry vision bias can be circumvented, we draw on the distinction between two cognitive systems—the *meaning-based system* and the *experience-based system* (Allen, Kaut, & Lord, 2008; Epstein, Pacini, Denes-Raj, & Heier, 1996). The meaning-based system processes the meaning of words, symbols, and other concepts. It is the part of the mind in which people assess data, contemplate ideas, and think abstractly. It stores information according to semantic relationships—that is, the extent to which different ideas have similar meanings. People use the meaning-based system to understand that the word "organization" is closely related to the word "company," but not to the word "pronounce." By contrast, the experience-based system processes

sensory information and underlies peoples' ability to imagine and visualize events. It is the part of the mind in which people encode the size of the room they are in, the colors of the clothes they are wearing, and who is sitting next to them. It is also responsible for autobiographical memories, such as recollections that a person might have of the interior of a previous home or a scenic view from a past vacation. We will now argue that the blurry vision bias (1) exists because leaders overemphasize the meaning-based system, and (2) can be overcome by helping leaders activate the experience-based system by imagining what the world will look, sound, and feel like if and when their company's vision is achieved.

### How the Blurry Vision Bias Stems from an Overemphasis on the Meaning-based System

The blurry vision bias arises in large part from how people tend to think about the future. Given that the future has not yet transpired, it cannot be seen or felt. Consequently, as individuals contemplate the future, they tend to rely on an abstract understanding of what it will *mean* ("providing excellent customer service") instead of a mental simulation of how it could be *experienced* ("making customers smile") (Trope & Liberman, 2003). This tendency is pronounced for those who are most likely to craft and communicate visions—upper echelon leaders—because people who possess power tend to think in broad terms about the organization's strategy (Magee, Milliken, & Lurie, 2010; Rucker, Galinsky, & Dubois, 2012; Smith & Trope, 2006).

We argue that the predisposition to think about the future abstractly rather than vividly is exacerbated when leaders are confronted with the need to not only think about the future, but communicate about it. This is because the primary medium of communication—language—tends to reinforce abstract thinking. The language-processing center is rooted in the meaning-based system because it involves the comprehension of symbols (letters and words) (Tulving, 1972). Once this system is engaged, people seek to "make meaning" by building an association between one concept and a second concept in order to improve their understanding of the first concept (Pratt & Ashforth, 2003). Critically, the second concept need not be vivid to impart meaning to the first concept (Rosso, Dekas, & Wrzesniewski, 2010). To illustrate, a leader of an online social networking company can help employees make sense of the future with an abstract phrase such as "helping people make connections." This phrase lacks imagery because it does not describe an observable action, but a leader can still use it

to understand what the company aims to achieve. It is certainly possible that a leader could use rhetoric that possesses imagery to better understand this company's future (e.g., "people exchanging the first words of what will be a lifetime friendship"); however, imagery is not necessary to satisfy the meaning-based system's need for comprehension. Since people are more likely to generate and communicate image-based rhetoric when the experience-based system is engaged—yet a focus on language does not activate the experience-based system—leaders who are not explicitly nudged to engage the experience-based system are unlikely to employ image-based rhetoric when articulating a vision. The ironic upshot of this is that leaders who focus on the very medium through which visions are communicated (words and phrases) remain entrenched in the meaning-based system and reinforce their inclination to convey the abstract meaning of the future, rather than provide an image-laden portrait of it.

Although an excessive focus on language exacerbates the blurry vision bias because it causes leaders to overweigh the meaning-based system, dominant perspectives in the literature have assumed that careful word selection is paramount for effective vision communication. In a review of 180 sources containing advice on how to construct visions,<sup>7</sup> we found that 175 (97.3%) encouraged leaders to carefully attend to the selection of words and phrases (see Appendix B at [blurryvisionbias.wordpress.com](http://blurryvisionbias.wordpress.com) for more detail). Although this is not surprising because language is perhaps the most fundamental characteristic of vision communication (Awamleh & Gardner, 1999), it is problematic because it reinforces the blurry vision bias. More paradoxically, even expert recommendations that explicitly call leaders' attention to the very category of language that elicits imagery (e.g., "use words with lifelike detail") are unlikely to counteract the blurry vision bias because they still target the meaning-based system. Consider a leader who aims to create a vision for a government agency and is countenanced by an

<sup>7</sup> Since the literature on vision communication is vast, it is challenging to review it systematically. Therefore, we introduced a new approach to reviewing the literature: semantic cluster analysis. This approach provides a way to review a body of research comprehensively (capturing the full spectrum of arguments from different articles and books), parsimoniously (grouping sources that present similar arguments under the same broad themes), and representatively (establishing the number of sources that fall into each broad category).

expert to “use words that reflect observable reality, such as what you can see and feel.” By being asked to focus on *words* that capture observable reality, this person will be prompted to contemplate the meaning of “observable reality” as a concept, which typically brings abstract ideas to mind (e.g., “helping the country”). Although it is possible that this leader would understand “observable reality” via image-based rhetoric (“when people tell their friends they feel optimistic about their lives”), such rhetoric is not necessary to convey this idea’s meaning.

Further compounding this problem are the words and phrases experts use to describe image-laden rhetoric when they recommend that leaders use it in vision communication. Our literature review (see Appendix B at [blurryvisionbias.wordpress.com](http://blurryvisionbias.wordpress.com)) indicates that experts talk about the general properties that unite different examples of image-laden visions (e.g., “an effective vision...creates a vivid image”). Ironically, although a term such as “vivid image” unites countless image-based phrases (e.g., a shimmering screen, a jubilant customer, a sold-out stadium), the term is itself a generic, abstract label rather than one that brings to mind an easy-to-visualize person, object, or action (Guadagno et al., 2011; Rosch, 1978). Advice centered on generic themes will reinforce the tendency for leaders to think about the future at a broad level of abstraction. A leader who is encouraged to create a “vivid image” is thus more likely to tell listeners about general properties of the future (e.g., “devices that advance mobile technology”) than walk listeners through a scene laden with visual detail (e.g., “devices that complete hundreds of tasks—from ordering food to starting your car—with the push of a button”). The notion that people think of words at the same level of abstraction as words they heard just moments before is consistent with evidence on the inertia of the brainstorming process, such that new ideas are offshoots of previous ones (Berg, 2014). In this way, advice that focuses leaders’ attention on general properties of rhetoric—even image-based rhetoric—will reinforce, rather than counteract, their predisposition to communicate abstractly about the future.

In sum, leaders are not inclined to craft visions with imagery, and even leaders who consciously seek to infuse their visions with image-laden rhetoric are unlikely to do so.

### **Resolving the Blurry Vision Bias by Activating the Experienced-based System**

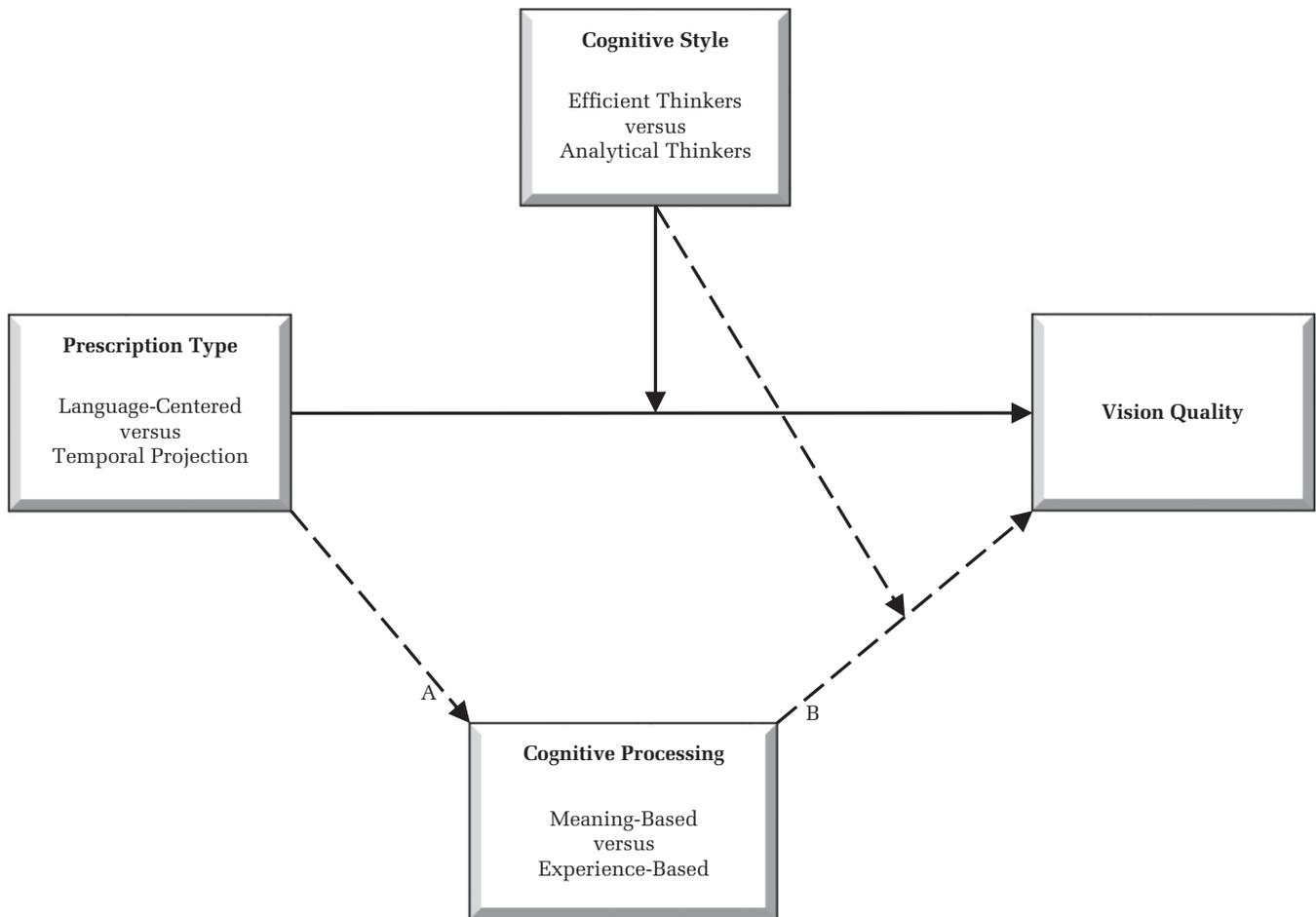
We posit that leaders will formulate image-based visions most easily when they engage in a two-step

process: drawing on the experience-based system and then having this form of cognition “spill” into the meaning-based system by driving the retrieval of image-based rhetoric. First, rather than focusing on selecting words that meet specific criteria, leaders vividly imagine future experiences (Path A in Figure 1). They can do this by mentally projecting themselves to a day in the future and envisioning what the world will look like—such as the shape of buildings, the colors of background scenery, and the expressions on people’s faces. This act of psychologically projecting across time, or temporal projection, is a prospective tactic related to mental time travel (Suddendorf et al., 2009), temporal mental simulation (Waytz, Hershfield, & Tamir, 2015), and episodic foresight (Bulley, Henry, & Suddendorf, 2016), except that people focus less on how they will personally look and feel in the future and more on what their organization will look like, as well as how the world will change if their organization’s vision is realized. Further, our proposed intervention is distinct from the above-cited tactics because it is used to enhance communication and interpersonal influence, rather than people’s private introspection and planning.

After individuals construct mental imagery about the future and are then asked to describe it to employees, they will create words in the meaning-based system (because that system houses the language center); however, they are likely to find it easiest to use image-based rhetoric, given that abstract words will not convey the visual snapshot they see in their mind’s eye (Path B in Figure 1). In short, the experience-based and meaning-based systems “cooperate,” such that leaders begin the process of constructing a vision by generating mental imagery and only then search for the words to clairvoyantly describe it. Thus, leaders who psychologically skip forward to the distant future before crafting and communicating a vision will open up the boundary between the experience-based and meaning-based systems of cognition.

To illustrate, consider a leader of a social networking company who is asked to “imagine people using yet-to-be-created social networking technology in 10 years.” This guidance pushes the leader to psychologically transport to the future and summon a mental image of what it could look like. Once this image has been formed and the leader attempts to describe it, he or she can best do so with image-based words (e.g., “a father in the military talking to his children back home” or “women from neighboring universities typing words that will inspire a social movement”). Abstract words would be insufficient for describing a mental image. Along these lines, we

**FIGURE 1**  
**Theoretical Model**



*Notes:* The solid lines represent direct effects: the main effect of prescription type on vision quality (Hypothesis 1) and the interaction between prescription type and cognitive style on vision quality (Hypothesis 2). The dashed lines represent the conditional indirect effect (Hypothesis 3) that explains the Hypothesis 2 interaction. In line with Hayes (2013), the interaction on the second stage should only be interpreted in tandem with the path between temporal projection and the mediator.

expect that leaders who deliberately take a mental leap forward to a moment in the distant future (which we hereafter label as both “temporal projection” and “mental time travel”) will employ more image-laden rhetoric than even those who consciously set out to construct visions with such rhetoric.

*Hypothesis 1. Leaders who mentally project themselves to the distant future (i.e., temporal projection) will use more image-laden rhetoric in vision communication compared to leaders who emphasize word selection.*

Although this hypothesis relates to the quantity of image-based rhetoric, in our studies we account not only for the amount of image-based rhetoric, but the quality of the images. In addition, we assess overall

vision quality, which, according to our literature review, is driven not only by whether a vision possesses imagery, but also whether it is specific, achievable, and reflects the core values and identity of the organization and its members. Although it is outside the scope of this paper to construct hypotheses about the impact of temporal projection on these three dimensions, in our studies we assess its effect on all dimensions of vision quality. If leaders who mentally project themselves deep into the future are able to boost one core dimension of vision quality (imagery) while not harming—or even while boosting—the others, then it will yield a net benefit such that they will construct and communicate higher-quality visions compared to leaders who make deliberate attempts to boost vision quality

through careful word selection (i.e., tactics that engage the meaning-based system). As another way of approximating overall vision quality, we assess whether the visions leaders craft as a result of mental time travel are effective enough to increase the extent to which their employees are inspired at work.

### The Moderating Role of Cognitive Style

The link between temporal projection, mental imagery, and imagery in vision communication is likely to be influenced by an individual difference pertaining to the willingness to accommodate experience-based processing (Cacioppo, Petty, Feinstein, & Jarvis, 1996; Epstein et al., 1996). Although this individual difference exists as a continuous dimension, it is best appreciated by contrasting its two poles: whereas *efficient thinkers* prefer not to engage in over-analysis, *analytical thinkers* are methodical and have a strong “need for cognition.” Efficient thinkers are likely to let mental imagery freely influence the way they communicate. They are not inclined to override imaginative thinking with controlled logic, supplant snapshots that they envisage in their mind’s eye with semantic analysis, or impute an abundance of abstract meaning into their mental glimpses of the future (Epstein et al., 1996). That is, efficient thinkers are comfortable focusing on a single graphically defined scenario, rather than forming general impressions. As such, we expect that efficient thinkers will let vivid images loom large in their consciousness and guide their search for words and phrases when they seek to communicate their thoughts to others.

In contrast, analytical thinkers are more inclined to consciously override the influence of mental imagery on how they communicate. Since they prefer complex problem solving and effortful thought, they tend to think at a high level of abstraction. By definition, abstract thinking involves drawing connections across disparate domains and contemplating general principles, rather than specific events (Rosch, 1978). Therefore, even if they are capable of vividly imagining a single future event, analytical thinkers are likely to explain their understanding of the future using abstract categories that represent the broader meaning of that event (Kahneman, 2011). For instance, an analytical thinker who imagines customers smiling may consider the broader meaning of this type of scenario and craft a vision in which “customers are always satisfied.” In this way, a natural disposition toward abstract cognitive processing leads analytical thinkers to favor concepts, rather than words that pertain to sensory experiences.

In short, since they prefer to “abstract out” to make general summations, analytical thinkers are likely to possess a stronger barrier between the experience-based and meaning-based systems compared to efficient thinkers. Thus, exercises that trigger experience-based thinking (e.g., mentally projecting oneself into the distant future) are less likely to “spill” into the meaning-based system for analytical thinkers than for efficient thinkers. In this way, the *generation* of mental imagery via a vivid mental simulation of the distant future is less likely to lead to the *communication* of imagery via image-based rhetoric. This is a critical distinction because leaders can only influence others through explicit communication. In short, analytical thinkers are not likely to be as amenable as efficient thinkers will be to letting temporal projection influence their communication.

*Hypothesis 2. Individual cognitive style (efficient versus abstract thinking) and prescription type (temporal projection versus language-based prescriptions) will interact, such that temporal projection will boost the use of image-laden rhetoric in vision communication more for efficient thinkers than for analytical thinkers.*

Altogether, our logic leads us to predict that the relationship between temporal projection and image-based rhetoric will be mediated by the experience-based system and moderated by cognitive style, such that the relationship between temporal projection, mental imagery, and imagery in vision communication will be stronger for efficient thinkers than for analytical thinkers (see the dashed lines in Figure 1). That is, analytical thinkers override the link between the generation of mental images and the communication of images to a greater extent than do efficient thinkers.

*Hypothesis 3. The role of mental imagery as a mediator between prescription type (temporal projection versus language-based) and image-laden rhetoric will be moderated by cognitive style, such that the mediated relationship will hold more for efficient than for analytical thinkers.*

## METHOD

We tested the hypotheses in three studies. We aimed to promote external validity by recruiting a diverse set of participants, including a sample with British government officials and a sample with senior corporate executives. All three studies were experiments, thereby establishing internal validity.

In study 3 we assessed whether the visions that senior executives craft as a result of mentally projecting themselves to a moment in the future are superior for inspiring their own employees. Thus, we establish predictive validity not only for our primary intervention (temporal projection / mental time travel), but also for imagery in vision communication. Finally, in addition to testing our predictions three times, we sought to establish the replicability of our findings by preregistering the hypotheses and methods for studies 2–3 and running one high-powered design with 700 full-time employees (study 2). All data are available from the first author.

### Study 1: Brexit Experiment

**Sample and design.** We sought a context that would establish ecological validity, such that vision communication was timely and meaningful. Imagery in vision communication can be especially useful during periods of change because it crystallizes the ultimate goal of a change effort (Heath & Heath, 2010; Kotter, 1996). For this reason, we launched an experiment involving British government employees on June 24, 2016, the day the United Kingdom announced that it would exit the European Union (“Brexit”) as the result of the vote of British citizens.<sup>8</sup> The Brexit vote marked the beginning of a transition many experts considered more daunting than any the U.K. government had experienced since the end of World War II. The day of the vote was known well in advance, allowing us to plan the exact timing of the launch of the experiment. In fact, we began the experiment just a few hours after David Cameron announced his resignation as prime minister (the highest ranking office in the British government).

The sample consisted of 166 government officials from the United Kingdom. The results remained substantively the same when retaining nine participants who failed an attention check, so we included them to increase statistical power. The sample included council members from provincial governments, heads of department, executive officers, education officers, national parks managers, heads of communication systems, administrators in the National Health Service, and principle engineers. We identified participants via an online database (prolific.ac). The average participant age was 37, with an average of 11.3 years of experience, and 66% were female. A

number of participants commented after the experiment was over about the relevance of Brexit to their jobs. We were explicit that the timing of the study was due to Brexit and we emphasized the government transition that would take place. Beyond the opportunity to examine a context involving change, we sampled government employees because vision communication is viewed as essential among government leaders, who must unify various stakeholders. Despite the unique context, our aim was to ensure that participants focused on crafting a vision for an organizational purpose in addition to a political purpose. Thus, we emphasized that participants should craft a vision relevant to both the British government overall as well as their own company, agency, or unit.

**Procedure.** We constructed six conditions in a between-subjects design. We did not drop any cases from any of these conditions or perform analyses before the data were collected, and we stopped data collection only when no further participants who met our sample requirements volunteered. One condition was a control group, in which we asked participants to write a vision statement without any prompts or prescriptions. The next four conditions featured what we call *language-based prescriptions*, because they involved explicitly instructing leaders to incorporate certain categories of words into their visions of the future. As noted earlier, scholars have converged on four desirable attributes in a vision: imagery, specificity, achievability, and values. Participants were explicitly asked to choose words that reflected these attributes. We ensured that the wording of the prescription in each condition included the most frequently invoked words that authors across the 180 sources identified in our literature review used to describe each attribute. This ensured that each prescription was confined to a unique, delineated domain. We constructed each prescription to be similar in word count. For the *imagery / vividness prescription* we noted that “a picture is vivid when it is depicted as if it could be seen and felt. It should simulate a visual representation or an image of an event. A vivid statement is picture-like. It portrays action, events, and objects with lifelike detail.” For the *specificity prescription*, we explained, “Specificity refers to a statement’s clarity and exactness. A specific statement is distinct, easy to understand, and can be interpreted in only one way. Statements that are simple are often clearer. A vision that is specific is free from ambiguity.” For the *achievability prescription*, we stated, “Achievability refers to whether a statement

<sup>8</sup> British citizens voted on Brexit the day before the departure was announced (June 23, 2016).





















***Using dual cognitive processing to identify who benefits the most from temporal projection.*** Our incorporation of dual cognitive processing also contributes to theory on leadership by illuminating which leaders are most likely to benefit from psychologically projecting themselves to an important moment in the distant future. Leaders who are efficient thinkers (i.e., are predisposed to make intuitive decisions) allow the imagery that they conjure in the experience-based system as a result of temporal projection to influence the language they use when communicating visions (Epstein et al., 1996). In contrast, leaders who are inclined to think complexly (i.e., analytical thinkers) do not benefit as much from such an intervention. Their cerebral nature blocks mental imagery from influencing their rhetoric. Although analytical thinkers are often extolled for their capacity to systematically vet situations and reach sound conclusions, our findings add to concerns raised in recent research related to the downsides of analytical thinking—such as a decreased ability to be decisive (Dalal & Brooks, 2013) and a reluctance to exploit the upsides of intuition (Dane & Pratt, 2007). In the case of vision communication, leaders who are inclined to let their imagination reign free are likely to be the most effective vision communicators.

### **Implications for Leader Communication in Other Domains**

By establishing that current understanding of leader communication is misaligned with the nature of dual cognitive processing and then updating our understanding of how these two areas of research intersect, scholars can better understand how to incorporate theory on dual cognitive processing into research on other aspects of leader communication. One such topic involves feedback. In a meta-analysis of dozens of studies, Kluger and DeNisi (1996) found that individuals improve their performance when they are given concrete feedback about which task-specific behaviors they should enact (“please arrive to work at 9 am”) rather than general feedback (“please be more conscientious”), yet leaders often provide general feedback about personal traits. To take corrective action, leaders can mentally simulate specific task behaviors in the experience-based system prior to giving employees feedback. Similarly, when giving task instructions leaders often know a task so well that they fail to appreciate what it is like not to know it, leading them to communicate in terms

that an expert can understand (abstract jargon) rather than in terms a novice can understand (concrete detail related to learning new behaviors) (Keysar, Lin, & Barr, 2003). Leaders who engage their experience-based system by imagining what it is like to perform a specific job may give better task instructions. Finally, our framework can inform theory on culture. Leaders who tell stories are often more effective at communicating an organization’s culture compared to those who only communicate values (Schein, 1990). It is possible that leaders who use mental time travel to “jump backward” in time will be more likely to identify vivid moments from the organization’s past that they can convey as stories to exemplify their organization’s desired culture.

### **Empirical Contributions, Practical Contributions, and Limitations**

We augmented our theoretical contributions by making a number of empirical contributions: (1) using a method that allows for a blend of internal and external validity, (2) boosting internal validity further by controlling for confounds and directly assessing mediating mechanisms, (3) demonstrating that our theory works with several ecologically valid samples, (4) replicating the core effects multiple times, (5) introducing a new approach to reviewing an extensive body of literature, and (6) testing four dependent measures, such that we included two separate measures each for vision imagery and overall vision quality—one that approximated the constituent elements (the parts that make up the whole) and one that approximated a holistic “gestalt” impression.

In terms of practical contributions, our paper can help close a gap between the existence of knowledge (image-laden visions have beneficial consequences) and the implementation of that knowledge (identifying the theoretical conditions that help leaders craft and communicate image-based visions) because we not only established the effectiveness of temporal projection, but provided a recipe in the methods section for how it can be implemented. It is our hope that organizational leaders can use the methods in this paper to construct a mental catalog of images and paint a vivid portrait of the future that galvanizes organizational members. Another practical contribution relates to our finding that analytical leaders struggle to harness the potential of temporal projection. This lends credence to the idea that organizations may be best served by coupling an

inspirational visionary with a cerebral strategist who manages operational details—a dichotomy famously embodied by Steve Jobs and Tim Cook at Apple in the mid-2000s.

There are several limitations with our paper. Although we found consistent results for moderated mediation across two studies, we urge caution with respect to the interpretation of these effects because of the nonnormal distributions of the mediator and moderator, and that fact that these effects appear to be driven by an extremely strong relationship between the independent variable and the mediator ( $p < .0001$ ), which in turn amplifies the moderated effect on the path between the mediator and the dependent variable. Although this meets the criteria for a significant conditional indirect effect (Hayes, 2013), the moderated effect is less powerful than the mediated effect. Another consideration is the mental time travel manipulation. Although the word “company” was vetted, and its face validity determined, for the Brexit study, it may have been less appropriate for participants who worked in agencies. A final limitation relates to the Brexit sample. Although we sampled leaders with large spans of control and high-ranking positions in Studies 2 and 3, some participants in the Brexit study did not have high-ranking roles.

A number of future directions are likely to be fruitful for scholars who seek to build on the current findings, as well as to address the limitations of our studies. It may be useful to explore whether temporal projection generalizes to team leaders. For instance, we ran a supplementary experiment using the same experimental design as in study 3. Daytime and executive Masters of Business Administration students ( $n = 121$ ) crafted visions for a team they oversaw. Linear mixed models established that those in the mental time travel condition communicated visions with more imagery,  $b = 10.03$ ,  $t = 2.49$ ,  $p = .01$ . Future research could also examine the role of nuances of vision communication that were outside the scope of this paper, including delivery, cadence, and follower characteristics (Awamleh & Gardner, 1999; Stam et al., 2014). Additionally, scholars may examine whether individuals can sustain their ability to communicate high-quality visions long after engaging in temporal projection—a possibility that seems likely due to the length of time that visual thoughts occupy memory (Tulving, 1972). Finally, scholars can explore tactics leaders use to further refine their visions after they have engaged in temporal projection and converted their mental imagery to words.

## CONCLUSION

Leaders can promote effective individual and collective action by conveying a vivid sense of what the distant future could look like. Image-laden rhetoric is a vehicle that enables leaders to achieve this, yet our findings suggest that leaders are inclined (and advised) to engage in rhetorical tactics that cause them to communicate vague descriptions of the future. In contrast, temporal projection—a tactic that impels leaders to vividly imagine a real-life scenario in the distant future and then translate it into words—can help leaders craft and transmit high-quality visions. Temporal projection places leaders into a mindset that exploits the often untapped resource of the imagination, leaving them poised to communicate a verbal portrait that captures attention and inspires action.

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