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Don't stop believing: Rituals improve performance by decreasing anxiety

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ABSTRACT

From public speaking to first dates, people frequently experience performance anxiety. And when experienced immediately before or during performance, anxiety harms performance. Across a series of experiments, we explore the efficacy of a common strategy that people employ to cope with performance-induced anxiety: rituals. We define a ritual as a predefined sequence of symbolic actions often characterized by formality and repetition that lacks direct instrumental purpose. Using different instantiations of rituals and measures of anxiety (both physiological and self-report), we find that enacting rituals improves performance in public and private performance domains by decreasing anxiety. Belief that a specific series of behaviors constitute a ritual is a critical ingredient to reduce anxiety and improve performance: engaging in behaviors described as a "ritual" improved performance more than engaging in the same behaviors described as "random behaviors."

1. Introduction

From speaking in public to interviewing for a job to going on a first date, people frequently experience performance anxiety. Although anxiety can motivate beneficial preparation in the days or weeks before a performance, anxiety felt immediately before or during a performance typically harms performance (Eysenck, 1997; Lazarus, 1993). As a result, people engage in a wide range of strategies in an effort to diminish their anxiety – or at least prevent anxiety from undermining their performance.

The current research investigates the efficacy of a commonly-employed coping strategy that people use to curtail pre-performance anxiety: rituals. Ritual use is widespread, including by some of the most successful athletes and performers. For example, before every show, singer Beyoncé Knowles listens to the same playlist of songs, says a prayer with every member of her band, completes a specific set of stretches, sits in a massage chair while she has her hair and makeup done, and spends exactly one hour meditating. Wade Boggs, former third baseman for the Boston Red Sox, ate chicken before each game and wrote the Hebrew word *Chai* ("life") in the dirt every time he went to bat. Tennis star Serena Williams bounces the ball exactly five times before her first serve and two times before her second serve. Ballerina Suzanne Farrell pinned a small toy mouse inside her leotard, crossed herself exactly twice, and pinched herself exactly twice before going on stage.

Despite the pervasiveness of pre-performance rituals, surprisingly little research has investigated whether or not rituals actually influence subsequent performance, and, if so, through what psychological mechanism. We suggest that rituals improve performance by reducing anxiety. Compared with other strategies intended to reduce anxiety, which either have limited empirical evidence to support their efficacy or can be difficult to implement, rituals may be particularly useful because they are relatively easy to implement and align with conventional wisdom – many people use them naturally to cope with their anxiety.

2. Rituals, anxiety, and performance

The study of rituals has a rich history in the anthropological, sociological, and psychological literatures, with a particular focus on the interpersonal effects of rituals. Previous research has identified both functional and dysfunctional consequences of group rituals (e.g., Atran & Henrich, 2010; Blake, 2014; Collins,

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2004; Durkheim, 1912; Irons, 1996; Norenzayan & Shariff, 2008; Rossano, 2012). In contrast, we focus on the possible intrapsychic benefits of rituals for individuals, predicting that rituals can reduce anxiety for individuals about to face a performance task. We develop this prediction by drawing on three literatures which demonstrate that: (a) rituals emerge when people experience anxiety, (b) pre-performance sports routines are used to boost performance, and (c) rituals that are connected to a broader belief system (like religious rituals) reduce anxiety for those who subscribe to the belief system.

First, prior research suggests that the occurrence of anxious feelings and rituals are correlated: ritualistic behavior emerges under circumstances characterized by high anxiety. One early description of the link between anxiety and rituals is Malinowski's (1954) observation of fishing behaviors among the Trobriand Islanders in Melanesia in the early 1900s. Malinowski noticed that the islanders performed elaborate rituals when traveling in unpredictable and dangerous ocean conditions but not when traveling in shallow, calm waters, and concluded that the islanders used rituals as a way to reduce the tension associated with uncertainty and with the unknown. Indeed, across cultures and throughout history, rituals have often accompanied stressful transitions, such as deaths, births, weddings, and graduations, as well as stressful performance situations such as public speaking and sports (Celsi, Rose, & Leigh, 1993; Cohn, Rotella, & Lloyd, 1990; Kirschenbaum, Ordman, Tomarken, & Holtzbauer, 1982; Lobmeyer & Wasserman, 1986; Moore, 1986; Norton & Gino, 2014; Orlick, 1986; Wrisberg & Pein, 1992). For example, Lang, Krátký, Shaver, Jerotijević, and Xygalatas (2015) used motion-capture technology to quantify speakers' hand movements when asked to speak in public, finding that feelings of anxiety increased the repetitiveness and rigidity of hand movements – which are considered signs of ritualistic behavior. Indeed, some scholars have even suggested that rituals develop from the experience of anxiety or uncertainty (Felson & Gmelch, 1979; Lang et al., 2015; Singer & Benassi, 1981; Vyse, 1997).

Similar behaviors emerge among people with clinical disorders involving anxiety, stress, or trauma. People suffering from these disorders often develop rituals as a coping mechanism (Rachman & Hodgson, 1980). For example, individuals with obsessive-compulsive disorder are more likely to engage in ritualistic behaviors such as elaborate and repetitive sequences of finger tapping (Reuven-Magril, Dar, & Liberman, 2008). Abuse victims (Jacobs, 1989) and palliative care patients (Romanoff & Thompson, 2006) under intense stress also adopt rituals to cope with their conditions.

This foundational research provides correlational evidence that the type of people who engage in high-anxiety or high-uncertainty tasks may also be the type of people most likely to develop rituals, that moments of high anxiety increase the performance of rituals, and that people high in trait anxiety are likely to enact rituals. This research has conceptualized rituals as a *product* of anxious feelings but has not considered how enacting rituals might reduce anxiety. In contrast, the present research focuses on exploring the causal role of rituals in reducing state anxiety, a discrete emotion that affects a broader swath of people. Most people experience some level of state anxiety every day (Brooks & Schweitzer, 2011). Such state anxiety is frequently triggered by social interactions, change, performance evaluations, and uncertainty (Gino, Brooks, & Schweitzer, 2012; Gray, 1991). Our research extends prior research by assessing whether completing a ritual can causally reduce pre-performance anxiety and thereby enhance task performance.

The second line of research underlying our predictions explores correlations between "pre-performance routines" intentionally learned by athletes and their subsequent performance (Foster, Weigand, & Baines, 2006). Pre-performance routines often involve ritualistic elements including symbolism, repetitiveness, and rigidity (Dunleavy & Miracle, 1979; Womack, 1992), such as eating exactly the same foods in the same order before a game or warming up for the game using a particular set of steps. Several studies suggest that pre-performance routines are correlated, at least directionally, with improved performance in basketball and golf (Cohn, 1990; Cohn et al., 1990; Gayton, Cielinski, Francis-Keniston, & Hearns, 1989; Lobmeyer & Wasserman, 1986; Predebon & Docker, 1992; but see McCann, Lavallee, & Lavallee, 2001). For example, basketball players who use pre-shot routines when making free-throw attempts, such as spinning the ball three times and bouncing it once before shooting it, tend to have a higher percentage of successful free-throws than those who do not (Czech, Ploszay, & Burke, 2004). Furthermore, elite basketball athletes, who have higher stakes and perhaps higher anxiety when they play, tend to have more elaborate and longer pre-shot routines than do novice athletes (Wrisberg & Pein, 1992).

Although these studies link pre-performance routines (involving ritualistic elements) with performance, they leave many questions unanswered including whether rituals can causally improve performance, and through what mechanism rituals might prove beneficial. First, the majority of these studies are correlational, use very small sample sizes (often fewer than ten participants), and do not include tests of statistical significance. Second, even if pre-performance routines consistently improve performance, it is unclear why. Pre-performance routines may reduce anxiety, but they also may be effective for other reasons, such as improving concentration (Cohn et al., 1990) or creating physical readiness (Foster et al., 2006). Finally, many pre-performance routines are purely functional and lack key ritualistic elements such as symbolism and rigidity. We address these open questions by using experiments with adequate statistical power and random assignment to explore the causal relationship between rituals and performance and assess the mediating role of anxiety.

A third line of relevant research examines the psychological consequences of deeply-ingrained cultural or personal rites – including religious rites. People who engage in religious rites such as attending church or reciting the Rosary tend to feel less anxiety and recover faster from grief than those who do not (Ahler & Tamney, 1964). Catholic college students assigned to recite the Rosary experienced a greater reduction in anxiety after a high-anxiety experience than those assigned to watch a religious video (Anastasi & Newberg, 2008); this research recruited participants with existing Catholic beliefs, and benefits were observed only among those with deeply-ingrained beliefs. Our research extends these results by examining whether implementing a novel ritual – which has never before been used by participants – can reduce anxiety and improve performance.

Finally, a recent set of experiments tested whether engaging in a novel ritual could alleviate grief for individuals who had experienced a loss (Norton & Gino, 2014). These experiments revealed that participants who engaged in a novel ritual felt less grief than those who did not, regardless of their previous use of rituals or their belief in the efficacy of rituals. Here, we build on this research by assessing the effect of performing a novel ritual when people are in a high-arousal emotional state (anxiety), rather than a low-arousal state (sadness). Whereas Norton and Gino (2014) document that performing rituals after experiencing grief enhances perceived control and decreases grief, we predict that performing rituals prior to a high-anxiety performance can reduce anxiety and improve performance. In addition, Norton and Gino (2014) examined the effect of rituals when people lack control (i.e., the death of a loved one); in the current paper we study the effect of ritual when people are facing a situation in which they are in control of their outcomes (i.e., performance).