

CHAPTER 21



Don't Tread on Me

Freedom and Reactance to Autonomy Threat

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Derived from cognitive dissonance theory (Festinger, 1957) and other cognitive inconsistency theories (for review, see Proulx et al., 2012), psychological reactance theory (PRT; Brehm, 1966) posits that people experience psychological reactance—a motivational state aimed at restoring freedom—when their freedom of behavior or belief is threatened or eliminated. Brehm's (1966) emphasis on the existential importance of freedom and its loss places PRT alongside the ideas of philosophers such as Kant (1797/1967), Sartre (1943/1956), Merleau-Ponty (1964), and Fromm (1941), who debated the existence and importance of free will. Viewpoints among these scholars varied widely; for instance, Sartre (1943/1956) suggested that freedom is absolute, equating free will with being human. Summarizing the range of ideas about freedom, Feldman (2017) noted, “Choice is important, as it is a fundamental factor in the understanding of the human psyche and is considered by thinkers to be a defining feature of human existence (Heidegger, 1927/1962; Sartre, 1943/1956) and sense of freedom (Kant, 1967)” (p. 5).

For many years, this debate about the existence and importance of freedom, free choice, and free will was largely the prov-

enance of philosophers, with few empirical investigations informing their viewpoints (for review, see Feldman, 2017). More recently, psychologists and neuroscientists have made strides in defining and empirically studying the concept of free will as it relates to human behavior and cognition (for reviews, see Brass et al., 2019; Feldman, 2017). An important advancement is the acknowledgment that, as Brehm (1966) suggested, freedom of choice may be rooted in evolution, as it is likely adaptive for people to weigh their options and select appropriate actions (Vohs & Baumeister, 2004).

With these existential concerns in mind, this chapter briefly outlines the research and application of PRT, which have continued since its introduction over 50 years ago. In line with Rosenberg and Siegel's (2018) review of PRT, this chapter outlines and summarizes research that comprises five overlapping waves of PRT literature: 1) theory proposal and testing, 2) contributions from clinical psychology, 3) contributions from communication research, 4) measuring reactance, and 5) return to motivation. After covering these five waves, we discuss how principles from PRT could be applied when developing persuasive messages.

WAVE 1: THEORY PROPOSAL AND TESTING

Assumptions of PRT

Brehm (1966) developed PRT based on two main assumptions. First, people believe they can engage in a set of free behaviors (or *freedoms*). Second, when these freedoms are threatened or eliminated, people are often motivated to restore them. This motivational arousal, known as *reactance*, occurs even though freedom may not always be desired. These foundational assumptions led to predictions concerning the characteristics of freedoms, the nature of freedom threats, and the resultant effects of reactance (for review, see Brehm & Brehm, 1981).

Components of PRT

For clarity, researchers (e.g., Dillard & Shen, 2005) have segmented PRT into four sequential components: (1) the presence of freedom, (2) the threat or elimination of freedom, (3) reactance arousal, and (4) the restoration of freedom.

Freedoms

People believe they have a set of free behaviors—*freedoms*—they have engaged in before, can currently engage in, or could engage in in the future (Brehm, 1966). For a behavior to be perceived as a freedom, people must (1) be aware of the freedom and (2) feel capable of engaging in it (Wicklund & Brehm, 1968).

Elimination and Threats to Freedom

The *elimination* of freedom (Brehm, 1966) is anything that completely prevents people from engaging in a behavior or holding a particular position (e.g., outright bans; Avishai et al., 2023; Mazis et al., 1973). A *threat* to freedom is anything that limits but does not eliminate a behavior (e.g., attempted social influence; Brehm, 1966). Beneficial events can also act as threats and thus arouse reactance, such as when feeling pressured to return a favor (e.g., Krishnan & Carmen, 1979).

Reactance Arousal

Characteristics of the freedom itself influence reactance arousal. Brehm and Brehm (1981) proposed that more reactance is elicited when a greater proportion of freedoms are threatened. One study showed initial support for this relationship (Wicklund et al., 1970), though subsequent research is sparse (for an unsupportive exception, see Grabitz-Gniech et al., 1975). Additionally, Brehm (1966) noted that freedoms unique in fulfilling specific needs, when threatened, trigger more intense reactance than when other freedoms can fulfill the same need (e.g., removing a desired food from people who lack vs. have other foods to quell their hunger). However, this aspect has yet to be extensively studied (for an exception, see Goldman & Wallis, 1979).

Another factor that can determine how much reactance is aroused is the threat's characteristics, including threat severity, perceived intent to persuade, and vicarious threat (Brehm, 1966). Empirical studies have demonstrated that more severe threats induce stronger reactance (e.g., Rains & Turner, 2007). When people perceive high persuasive intent, their opposition to the advocated position tends to increase due to elicited reactance (Benoit, 1998; Jones & Brehm, 1970). Furthermore, vicarious experiences of threat, such as observing or learning about others having their freedoms threatened, can also evoke reactance (i.e., vicarious reactance; Sittenthaler et al., 2015b). However, direct threats to freedoms prompt an immediate physiological response, whereas vicarious threats lead to a delayed response (Sittenthaler et al., 2016; Steindl et al., 2015).

Restoration of Freedom

When freedoms are threatened or eliminated, reactance typically manifests in two primary ways (Brehm & Brehm, 1981). People may *directly* engage in the restricted behavior, known as the boomerang effect (Brehm, 1966), such as when underage college students drank more alcohol following an increase in the drinking age from 18 to 21 (Engs & Hanson, 1989). People may also ex-

press reactance *indirectly*, such as by observing or encouraging others to enact similar behaviors (Brehm & Brehm, 1981). For instance, if those newly underage college students were unable to drink as a method of freedom restoration, they might watch their friends do so instead. Additionally, people can alleviate the discomfort associated with reactance by showing hostility toward or derogating the source of a threat (Nezlek & Brehm, 1975; Rains, 2013). Alongside these behavioral responses, the attractiveness and desirability of restricted behaviors often increase (Brehm & Rozen, 1971; Brehm et al., 1966).

When Reactance Reduction Fails

When efforts to reduce reactance fail, people may stop feeling reactance and experience a sense of defeat or lost control (Brehm & Brehm, 1981; Wortman & Brehm, 1975); this resembles learned helplessness, where people accept their inability to restore freedoms after acknowledging that the threat exists (Seligman, 1975). We discuss learned helplessness further in Wave 5.

Additionally, personality traits (e.g., locus of control; Rotter, 1966) can affect reactance. For instance, people who are Type A (i.e., competitive, urgent, aggressive) exhibit higher reactance under threat than those who are Type B (i.e., relaxed, patient, easy-going; Rhodewalt & Marcroft, 1988). These results suggest that ability to cope with threats moderates reactance arousal (Brehm & Brehm, 1981), which aligns with findings that people assess situations through primary and secondary appraisal processes to determine if they are threatening (potentially harmful or loss-inducing) or challenging (leading to mastery or benefits; Brehm & Self, 1989; Folkman et al., 2000; Lazarus & Folkman, 1984).

WAVE 2: CONTRIBUTIONS FROM CLINICAL PSYCHOLOGY

PRT was identified as having substantial potential in clinical psychology (Brehm, 1976; Brehm & Brehm, 1981), with scholars reconceptualizing reactance as a trait (stable and

enduring; Shoham et al., 2004) and a state (momentary and context-dependent; Brehm, 1966). Trait reactance is the “consistent tendency to perceive and react to situations as if one’s freedoms were being threatened” (Kelly & Nauta, 1997, p. 1124); people with differing levels of trait reactance will perceive the same stimulus as more or less threatening to their freedom. For example, when participants were exposed to a message indicating a COVID-19 vaccination was mandatory (i.e., freedom-threatening) as opposed to voluntary, greater state reactance was reported—but only among those with higher levels of trait reactance (Soveri et al., 2024).

Perspectives on Reactance in Clinical Psychology

To better understand reactance among clients receiving psychotherapy, clinicians have described three approaches to examining trait reactance: reactance as a moderator, overcoming reactance in therapy, and reactance as a tailoring variable (for reviews, see Beutler et al., 2002; Shoham et al., 2004).

Reactance as a Moderator

Trait reactance moderates therapeutic success (for review, see Shoham et al., 2004); patients with higher trait reactance have shown less satisfaction and less expectation of change in therapy (Dowd et al., 1988). This decrease in therapeutic effectiveness can be attributed to patients perceiving their therapists’ recommendations as freedom threatening (e.g., Tracey et al., 1989). Indeed, those high in trait reactance who experience bipolar disorder or depression adhere less to psychotropic medication (Lazary et al., 2023); people who exhibit high trait reactance may respond more positively to therapeutic styles that avoid confrontation (Gaume et al., 2023). Clients with higher trait reactance generally receive poorer prognoses than those with lower trait reactance (Beutler et al., 2002; Cautilli et al., 2005).

Overcoming Reactance in Therapy

Offering clients free choice in therapy is one method to prevent the adverse outcomes of

reactance (Devine & Fernald, 1973). For example, students who were given a choice in treatments reported greater value and treatment effectiveness compared to those whose treatment was chosen for them (Gordon, 1976). Another method to address reactance in therapy is to encourage its arousal (for discussion, see Tennen et al., 1981) via paradoxical interventions (i.e., those that encourage symptomatic behavior; Dowd & Swoboda, 1984). However, research has indicated inconsistencies with using paradoxical interventions on client outcomes (e.g., Debord, 1989; Shoham-Salomon & Rosenthal, 1987; Swoboda et al., 1990).

Reactance as a Tailoring Variable

Research addressing the moderating effect of trait reactance and methods to overcome reactance in therapy suggests that therapists should tailor their therapy to patients' trait reactance levels (e.g., Beutler et al., 2018). Patients who are higher in trait reactance tend to respond better to therapy (e.g., using more pro-recovery language) when their therapists use a less structured approach that is more flexible and adaptive; conversely, patients low in trait reactance benefit more when therapy has a clear framework that encourages autonomy and shared decision making (Arnold & Vakhrusheva, 2016; Dowd & Siebel, 1990; Karno et al., 2010).

Debate over Trait Reactance

Although the previously mentioned research supports the conceptualization of reactance as a trait, other researchers have questioned its use and construct validity as a personality trait, suggesting that reactance is more effectively applied as a motivational state (Miron & Brehm, 2006; Shoham et al., 2004). Silvia (2006) highlighted the uneven nature of the evidence supporting trait reactance, noting inconsistencies in responses to reactance-inducing messages on the Hong Psychological Reactance Scale, a measure of trait reactance (Hong & Page, 1989). Further critiques focus on the low explanatory power of trait scales, suggesting they might only measure affect (Miron & Brehm, 2006).

WAVE 3: CONTRIBUTIONS FROM COMMUNICATION RESEARCH

In addition to the settings mentioned in Wave 2, researchers also started utilizing principles of PRT in communication research (for reviews, see Quick et al., 2013; Reynolds-Tylus, 2019). Branching from communication research examining low- and high-threat antidrinking messages (Bensley & Wu, 1991), scholars began investigating how messages can increase (e.g., controlling language; Buller et al., 1998) and decrease (e.g., narrative; Moyer-Gusé, 2008) reactance arousal.

High- and Low-Controlling Language

Building on Brehm's (1966) scholarship, researchers have explored how controlling language can cause reactance (Grandpre et al., 2003; Quick & Kim, 2009). These studies often compare high-controlling messages (high threat; "must," "ought," "should") with low-controlling ones (low threat; "perhaps," "possibly," "maybe"; Miller et al., 2007, p. 223). For example, Bensley and Wu (1991) found that high-threat messages increased college students' alcohol consumption more than low-threat messages did, demonstrating a boomerang effect (Brehm, 1966). This high- and low-threat message communication paradigm is the standard in PRT communication research (Burgoon et al., 2002). With this approach, results similar to the aforementioned alcohol consumption messages have been found repeatedly in various contexts, including health (e.g., Crano et al., 2017; Li & Shen, 2024; Richards et al., 2022) and consumer behavior (e.g., Zemack-Rugar et al., 2017).

Other Message Features Affecting Reactance Arousal

After establishing that strongly-worded messages consistently arouse reactance, researchers explored features that could instead reduce reactance (Quick et al., 2013). These are discussed in the "Practical Implications of PRT" section after Wave 5.

WAVE 4: MEASURING REACTANCE

Although *trait* reactance was considered to be measurable using observational (Shoham-Salomon et al., 1989) and self-report methods (Hong & Page, 1989; Merz, 1983), early research on PRT did not directly measure *state* reactance. Instead, outcomes like boomerang effects (Worchel & Brehm, 1970) and increased attractiveness of the eliminated freedom (Brehm & Rozen, 1971) were assessed. Despite early assertions that state reactance is immeasurable (Brehm, 1966; Brehm & Brehm, 1981), scholars have spent the last 20 years developing measures for directly measuring state reactance (Dillard & Shen, 2005; Lindsey, 2005; Sittenthaler et al., 2015a).

Measures of Trait Reactance

Questionnaire for Measuring Psychological Reactance

Merz (1983) developed the Questionnaire for Measuring Psychological Reactance (QMPR), an 18-item scale (e.g., “I react strongly to duties and regulations”), as an initial measure of trait reactance. While the QMPR initially showed some face and content validity (for review, see Shen & Dillard, 2007), subsequent evaluations indicated psychometric weaknesses, partly due to translation issues from its original German (Hong & Ostini, 1989; Tucker & Byers, 1987).

Therapeutic Reactance Scale

To address limitations of the QMPR (Merz, 1983), Dowd and colleagues (1991) developed the 28-item Therapeutic Reactance Scale (TRS) to measure trait reactance. Initially, 112 items were developed from Brehm’s (1966) description of reactance, which were subsequently refined to a final set of 28 items (e.g., “I am relatively opinionated”). Although the TRS demonstrated correlations with the K scale of the Minnesota Multiphasic Personality Inventory and measures of locus of control, its unidimensional nature prompted caution in its use, considering reactance’s multidimensional aspects (Buboltz et al., 2002).

Hong Psychological Reactance Scale

Hong and Page (1989) developed the Hong Psychological Reaction Scale (HPRS) to address the deficits of the QMPR (Merz, 1983). The 14-item scale (e.g., “I find contradicting others stimulating”) had four factors: emotional response to restricted choice, reactance to compliance, resisting influence from others, and reactance to advice and recommendations (Hong, 1992; Hong & Faedda, 1996). Despite evidence of validity in the form of correlations with trait anger and depression (while not correlating with self-esteem; Hong & Faedda, 1996), a confirmatory factor analysis (Thomas et al., 2001) suggested the HPRS needed major revisions like the TRS (Dowd et al., 1991). Recent research has indicated a single-factor solution to the HPRS, but this factor explained little variance in the scale (Waris et al., 2020); research has also indicated a bi-factor structure (Moreira et al., 2020).

Observational Measure

Shoham-Salomon and colleagues (1989) developed an observational measure of trait reactance by coding patients’ tone of voice. Patients were considered highly reactant if their tone was coded as spiteful, uninhibited, and active. Though initially demonstrating construct validity, later research found mixed evidence (Shoham et al., 1996). While seldom used (e.g., Levesque et al., 2008), this measure advanced direct reactance assessments beyond self-reports (e.g., Sittenthaler et al., 2015a).

Measures of State Reactance

Intertwined Model

Dillard and Shen (2005) were the first to create an in-depth state reactance measurement. After empirically testing four models based on previous literature (Dillard & Meijnders, 2002; Dillard & Peck, 2000; Kelly & Nauta, 1997), results supported the intertwined model (i.e., a combination of anger and negative cognitions). Researchers typically measure anger using a four-item scale (Dillard & Shen, 2005). However, there is more debate over how to measure

negative cognitions (e.g., coders' ratings vs. a meta-cognitive scale; Reynolds-Tylus et al., 2021). The intertwined model was supported by a comparison of measures (Quick, 2012) and a meta-analysis (Rains, 2013). Notably, in line with PRT (Brehm, 1966), a serial mediation model is recommended, with perceived freedom threat predicting the intertwined construct (Rains, 2013).

Salzburg State Reactance Scale

Despite its widespread use (e.g., Kim et al., 2013), Sittenthaler and colleagues (2015c) noted limitations in Dillard and Shen's (2005) reactance measure, particularly its untested applicability beyond persuasion studies and nonstudent samples. In response, the Salzburg State Reactance Scale (Sittenthaler et al., 2015c) was developed, guided by earlier research (e.g., Jonas et al., 2009), using 10 items to assess emotional response, negative attitudes, and aggressive intentions across varied scenarios. Results indicated high internal consistency and correlations with other measures of state reactance (e.g., Lindsey, 2005).

Reactance to Health Warnings Scale

Based on Dillard and Shen's (2005) intertwined model, Hall and colleagues (2016, 2017) developed the Reactance to Health Warnings Scale (RHWS), to measure reactance to health messages across three dimensions: anger, perceived threat, and counter-arguing the warning. Initially comprising 27 items, the RHWS was condensed to a three-item Brief RHWS with demonstrated reliability and validity (Hall et al., 2017).

Physiological Measurement of Reactance

Although Brehm (1966) associated psychological reactance with physiological arousal, few measured motivational states this way (e.g., Baum et al., 1986). Inspired by Wright's (2008) work on cardiovascular effort markers, Sittenthaler (2015a) tested a physiological reactance measure by assessing heart rate changes under illegitimate versus legitimate freedom threats. Results indicated that reactance involves both im-

mediate physiological responses and slower cognitive responses. There has also been a recent movement to examine neurological correlates of psychological reactance (e.g., Mühlberger et al., 2020, 2024).

WAVE 5: RETURN TO MOTIVATION

Brehm (1966) initially defined reactance in PRT as a motivation to regain lost freedom. However, the construct's motivational focus was relatively deemphasized until Miron and Brehm (2006) connected it to other motivational theories (e.g., Brehm & Self, 1989). This reemphasis on reactance's motivational properties spurred the integration of PRT into broader motivational frameworks (e.g., Deci & Ryan, 2000; Leander et al., 2016; Schumpe & Leander, 2025; Steindl et al., 2015; Wright et al., 2015). Keeping this motivational aspect of PRT in mind, Wave 5 presents four avenues PRT has the potential to continue expanding: (1) factors affecting perceptions of freedom threats and freedom restoration, (2) catalysts of reactance beyond freedom threats, (3) outcomes of reactance beyond anger, negative cognitions, and boomerang effects, and (4) sequential reactance effects.

Factors Affecting Perceptions of Freedom Threats and Freedom Restoration

Though individual differences have long influenced reactance scholarship (Brehm & Brehm, 1981), recent research examines the impact of psychological states on responses to freedom threats, such as empathy (Shen, 2010) and self-affirmation (Schüz et al., 2013). Guided by Fromm's (1941) theorizing, Rosenberg and Siegel (2021) studied how uncertainty affects reactions to controlling and supportive scenarios. The authors found that reactance was greatest when participants felt safe and certain prior to exposure to a controlling message; when they felt uncertain, no differences in reactance emerged among those exposed to a controlling or supportive message. Therefore, uncertainty reduced people's negative perceptions of a freedom threat. Integrating prior literature, scholars have since posited

that inducing uncertainty at different stages of the reactance process could reduce reactance toward persuasive communication, such as reducing the certainty of one's prior attitudes and reducing the certainty of one's metacognitive evaluations of messages (Adam-Troian & Bélanger, 2025).

Expanding Catalysts of Reactance

Experiences beyond direct threats or loss of freedoms, such as group categorization, can arouse reactance (Miron & Brehm, 2006). Even positive labels (e.g., "mother," p. 9) may induce reactance if they feel stereotypically limiting or discriminatory (Wicklund, 1974). Supporting this notion, Kray and colleagues (2001) suggested that explicitly activating gender stereotypes in negotiations led people to act contrary to stereotypical expectations. Although the primary paradigm for testing PRT involves using explicit verbal or written threats (e.g., Dillard & Shen, 2005), early studies testing implicit freedom threats, such as making a decision (e.g., Sullivan & Pallak, 1976) and publicly committing to a position (e.g., Andreoli et al., 1974), also demonstrated reactance arousal. Similarly, Graupmann and colleagues (2012) showed that group categorization (i.e., ingroup vs. outgroup) can affect reactance arousal, demonstrating that talking about other social groups or being in the presence of an outgroup member (e.g., police) can cause people to feel immediately threatened.

Expanding Outcomes of Reactance

PRT broadly affects behaviors and cognitions—reactance, as a negative motivational state, triggers various goal-directed outcomes (Hart, 2014; Proulx, 2012). Building on the theories of Lewin (1959) and Tolman (1932), more recent research suggests that reactance is related to outcomes associated with negative motivational states (i.e., changes in abilities, disposition, resource allocation, and perception; Rosenberg & Siegel, 2016). Although researchers have expressed interest in observing the relationship between reactance and other negative emotions (e.g., fear; Steindl et al., 2015), positive feelings (e.g., humor, determination) should

also be explored. Additionally, Steindl and Jonas (2015) reported that interpersonal freedom threats aroused reactance, which biased subsequent cognitions and evaluations; future research could, therefore, examine how reactance-induced anger influences optimistic appraisals (e.g., Dunn & Schweitzer, 2005), riskier decision making (e.g., Baumann & DeSteno, 2012), and willingness to punish wrongdoers (e.g., Ask & Pina, 2011). Reactance also increases attention toward words related to the threatened object (Sprengholz et al., 2023) and affects subjective norm perceptions (Li & Shen, 2024).

Sequential Reactance Effects

Classic (i.e., learned helplessness; Wortman & Brehm, 1975) and contemporary (i.e., reactance decoy effect; Schumpe et al., 2020) scholarship have examined what happens when two freedom threats occur in such a way that the amount of reactance experienced is reduced. Additionally, recent work has examined a third phenomenon—the reactive spiral (Siegel & Rosenberg, 2025)—to address the circumstances when consecutive threats increase reactance.

Learned Helplessness

Learned helplessness occurs when people acknowledge a threat to their freedom but eventually accept their inability to overcome it and restore freedom (Wortman & Brehm, 1975), which can occur when people try but fail to reduce reactance (Brehm & Brehm, 1981). This can then lead to feelings of diminished control (Seligman, 1975). Perceived difficulty in freedom restoration appears to affect motivation to restore freedoms; motivation tends to be higher if freedom restoration is perceived as moderately difficult but lower when perceived as impossible (Mikulincer, 1988).

Reactance Decoy

A decoy can reduce reactance toward a persuasion attempt (Schumpe et al., 2020). The reactance decoy effect occurs when a persuasive message is preceded by another message that arouses reactance; this decoy

message allows the recipient to vent their reactance toward the decoy object, thus reducing the ability of subsequent threats from the following message to cause reactance. This concept stems from previous research suggesting that preceding a target message with a message with a weaker argument or a less credible source can increase the target message's persuasiveness (Tormala & Clarkson, 2007). The reactance decoy can increase persuasiveness by reducing people's reactance and decreasing their need to reassert themselves when evaluating the proceeding message (Schumpe et al., 2020).

Reactive Spiral

Similar to Coyne's (1976) depressive spiral, whereby negative behaviors caused by depression lead to peer withdrawal, increasing isolation, and worsening depression (e.g., Joiner & Metalsky, 2001), a *reactive spiral* describes how being in a state of reactance can result in increased sensitivity to future freedom threats (Siegel & Rosenberg, 2024/2025). Based on work by Brehm and Brehm (1981) and Wicklund (1974), Siegel and Rosenberg (2025) proposed that two consecutive threats cause changes in processing and general hypersensitivity to subsequent threats. In this conceptualization, any two threats received in relatively close succession can result in the reactive spiral, so long as the first threat is sufficient to arouse reactance and the reactance does not dissipate. In line with numerous theories of affect and information processing (e.g.,Forgas, 1995; Lerner et al., 2015), the reactive spiral occurs because the anger and negative cognitions resulting from an initial freedom threat influence subsequent information processing, thus affecting reactions to a second freedom threat (Siegel & Rosenberg, 2025).

PRACTICAL IMPLICATIONS OF PRT

One of PRT's greatest assets is its vast applied utility in various domains, a fact that was apparent early on in Brehm and Brehm's (1981) review and restatement of the theory; they included chapters on reactance in interpersonal relationships, clinical psychology,

and social influence, among other topics. As summarized earlier, in the past four decades, scholars have explored the utility of PRT in explaining thought and behavior in a variety of domains, such as health communication and behavior (for reviews, see Quick et al., 2013; Reynolds-Tylus, 2019) and treatment of mental disorders (for review, see Beutler et al., 2002).

In line with this work, we examine how PRT's advances can enhance the effectiveness of persuasive communications—primarily by reducing reactance arousal, but in one instance, capitalizing on it. As an illustration of these possibilities, the following section examines 11 strategies for tailoring messages to influence parents' reactions to childhood vaccination requirements. We first explore one strategy already discussed in Wave 5 (uncertainty), then introduce 10 new strategies.

Uncertainty

As noted, participants who feel certain and safe have shown greater reactance to controlling messages than those who feel uncertain and vulnerable (Rosenberg & Siegel, 2021). Uncertainty could thus be vital in determining reactance elicited by a persuasive message. For example, parents who feel uncertain (e.g., about their lives) should be less likely to become reactant to a persuasive message about childhood vaccination compared to those feeling more certain. Reduced reactance to the message, in turn, could allow the message to more effectively persuade them to vaccinate their child.

Message Sensation Value

Novel messages have decreased reactance and enhanced message effectiveness (e.g., Kang et al., 2006). Palmgreen and colleagues (1991) defined one such novel approach, message sensation value, as the ability of a message's audiovisual features to evoke sensory and emotional responses. The high sensation value (HSV) of these messages helps shift focus away from the controlling elements of the messages, thus reducing perceived threats to freedom (Morgan et al., 2003; Quick, 2013). HSV messages have been shown to capture the attention of

adolescents and lower their intentions to use drugs (Morgan et al., 2003).

An HSV message for childhood vaccination could use rapid, uplifting visuals of healthy, vaccinated children paired with dynamic music and bright colors. The narrative could show real-life stories of parents and children experiencing the benefits of vaccination, ending with a hopeful message emphasizing health and protection. Although the message would advocate for parents vaccinating their children, the HSV elements of the message could lessen the impact of its controlling elements.

Narrative

Narratives in messaging can reduce reactance and enhance persuasiveness (Quick et al., 2013). Moyer-Gusé and Nabi (2010) found that story-driven messages—such as those in TV dramas about teen pregnancy—decrease perceived persuasion, thereby reducing reactance and increasing intentions for safe sex among women compared to straightforward news broadcasts. Using a narrative approach, a message for childhood vaccination could tell the heartwarming story of a community coming together to protect its children, highlighting personal testimonials from parents about their positive experiences with vaccination. This story-driven message could create emotional engagement, reduce perceived persuasion, lower reactance, and increase vaccination acceptance.

Empathy

Making characters more relatable can increase feelings of empathy, which in turn reduces reactance and enhances persuasiveness by decreasing perceived threats (Shen, 2010, 2011). Shen (2010) demonstrated that empathy-inducing antismoking and antidrinking messages lowered reactance and indirectly improved ad effectiveness. This was achieved by participants empathizing with the characters, perceiving their messages as less threatening due to the connection with the characters.

Empathy might reduce reactance to childhood vaccination messages by featuring relatable stories of parents and children who

have benefited from vaccines. This approach could make the characters' experiences and emotions more identifiable. By fostering a sense of connection and understanding, these messages could decrease perceived threats and resistance, enhancing the overall persuasiveness of the message.

Inoculation and Reactance

Inoculating (e.g., forewarning; McGuire, 1961) people about potential threats can increase or decrease reactance (Richards et al., 2017). Miller and colleagues (2013) found that preexposing participants to a reactance-*inducing* message increased resistance to later persuasive messages, like those promoting marijuana legalization. Conversely, forewarning participants about possible reactance reduced it, enhancing the persuasiveness of anti-binge-drinking campaigns (Richards & Banas, 2015; Richards et al., 2017). These inoculation effects are inconsistent (e.g., Karlsson et al., 2024) and may depend on other message factors (Bessarabova et al., 2013; Quick et al., 2015).

Messages aiming to increase childhood vaccinations could benefit from warning parents about the possible reactance-arousing aspects of the ad. For example, a message might state, “After listening to the following information, you might feel your freedom to choose to vaccinate your child is being threatened. However, the benefits of vaccines are powerful, and the recommendations for immunizing children make much sense given what is known about preventing disease.” This message acknowledges the potential freedom threat, which could reduce reactance arousal while still advocating for the cause.

Low-Controlling Language

Autonomy-supportive messages can help reduce reactance (e.g., alcohol consumption; Bensley & Wu, 1991). Messages using low-controlling language (LCL; Staunton et al., 2022), which emphasize autonomy and use polite and implicit suggestions, support this approach, in contrast to messages using high-controlling language (HCL), which tend to be overtly persuasive and more likely to trigger reactance due to perceived free-

dom threats (for review, see Rains, 2013). This difference highlights the practical applications of using LCL in health communication strategies.

For example, LCL antismoking ads (e.g., “It’s your health, your body, your brain”) have led to adolescents reporting lower intentions to use cannabis compared to HCL ads (e.g., “Only complete idiots would do drugs”; Crano et al., 2017). Similarly, an ad targeting childhood vaccination could benefit from LCL, such as, “The choice to get your child vaccinated is yours,” to reduce reactance arousal. There are times when HCL messages can be beneficial in enhancing message clarity and efficiency (for review, see Staunton et al., 2022), but they carry more risk of inducing reactance than LCL messages.

Restoration Postscripts

Reminding recipients at the end of a persuasive message of their freedom of choice to comply with the message (i.e., using a restoration postscript; Brehm & Brehm, 1981) can help lower reactance (Richards et al., 2022). For instance, phrases like “The choice is yours; you’re free to decide for yourself” (Bessarabova et al., 2013) clearly emphasize the recipients’ autonomy, reducing perceived threats to their freedom (Miller et al., 2007). This approach can also increase desired behavioral intentions (Reynolds-Tylus et al., 2022). Additionally, adding a brief statement such as “but you are free to refuse” to the end of a request can enhance compliance and reduce reactance (Carpenter & Pascual, 2016). Miller and colleagues (2007) found that adding a short postscript (i.e., reminding recipients that the choice was theirs) following a promotional health appeal made the message less threatening.

Returning to our example, it could be beneficial to add restoration postscripts after messages targeting childhood vaccination, such as, “Ultimately, the decision to vaccinate your child is yours. You know what is best for your child’s health and well-being.” However, it should be noted that postscripts can be ineffective or even counterproductive when used with messages employing LCL (Bessarabova et al., 2013) or if they are too short (Quick et al., 2015).

Providing Compliance Options

When offered only one way to comply with a directive, participants were more likely to comply with messages promising rewards rather than punishment; however, this difference diminished when they could pick from four options instead (Heilman & Garner, 1975). This finding demonstrates that offering multiple ways to comply with a persuasive message can minimize the reactance aroused by the message.

Campaigns aiming to persuade people could benefit from this approach. For instance, persuasive messages targeting cancer-preventive behaviors have aroused less reactance when offering two options (wearing sunscreen or protective clothing) instead of one (Shen, 2015). A childhood vaccination campaign could also reduce reactance by offering parents the choice to vaccinate their children at school clinics, local health fairs, or home visits by health care professionals. This multiple-option approach could minimize reactance by giving parents control over their compliance with the vaccination guidelines.

Source Characteristics

The source of a persuasive message can affect how one perceives the threat level of the message. Sources are more likely seen as freedom-threatening if seen as having power over the individual or being expert or authoritative (Brehm, 1966; Brehm & Brehm, 1981). This increased threat can lead to increased source derogation, thus increasing reactance to the message (Miller et al., 2007). However, sources seen as highly similar, such as peers, can minimize reactance and the detrimental effects of the threatening message (Song et al., 2018).

Although this research on source characteristics has been shown to work with persuasive messages such as those targeting wildlife disease policies (Song et al., 2018), childhood vaccination messages could also benefit from having more similar sources. Instead of doctors, who can sometimes be evaluated more negatively than peers (Crano et al., 2007), parents not identified as having expert or authoritative roles could advocate for childhood vaccination. The source hav-

ing characteristics similar to the recipients could thus lessen the threatening impact of the requests made by the ad to vaccinate their child.

Mistargeting

Communication perceived as unintentionally overheard can be more effective in changing people's opinions than if the message targets them directly, but only if they believe the people they are overhearing are unaware of being overheard (Walster & Festinger, 1962). This has been demonstrated by smokers agreeing more with a message downplaying the link between smoking and lung cancer when they believed the speaker was unaware of their presence. With these findings in mind, Crano and colleagues (2007) developed the mistargeting strategy using persuasive messages indirectly—that is, directing the message to a person or group other than the true target. Mistargeting has notably been used to increase help-seeking intentions among people experiencing depression (e.g., "Do you know someone who fights depression?"; Lienemann & Siegel, 2016).

Persuasive messages about vaccination would likely benefit from using the mistargeting strategy. For example, instead of directly addressing parents regarding their children, ads could instead mistarget and state, "Thank you to all the parents who have vaccinated their children. You clearly understand the many benefits of doing so." In this instance, if a parent with unvaccinated children hears this message, the message will not be targeting them directly, thus potentially minimizing reactance arousal.

Reactance as a Persuasive Strategy

An alternative to reducing reactance is effectively inducing reactance to enhance persuasion (Turner, 2007). A "Truth" antitobacco campaign in Florida depicted cigarettes as manipulative, turning nonsmoking into a desirable outcome (Zucker et al., 2000). Positive campaign evaluations support this strategy's utility (Farrelly et al., 2002; Sly et al., 2001), with anger toward secondhand smoke associated with trait reactance and greater support for clean air policies (Quick

et al., 2009). Similarly, a message targeting childhood vaccination could depict the consequences of people who refuse to vaccinate their children, highlighting the adverse effects it would have on their children (i.e., their child is more likely to get sick if other children are not vaccinated). This ad could trigger reactance by making people believe that their freedom to protect their child is threatened, thus leading them to favor childhood vaccination.

Interactions

Although incorporating any of the 11 proposed strategies would likely enhance persuasive effectiveness by reducing reactance, utilizing multiple strategies could maximize their effectiveness (e.g., Miller et al., 2007). An advertisement simultaneously using principles of LCL (Staunton et al., 2022), multiple compliance options (Shen, 2015), source characteristics (Song et al., 2018), and restoration postscripts (Miller et al., 2007) could be more effective in reducing reactance than only one strategy. With these strategies, a persuasive message targeting childhood vaccination could say, "Please consider vaccinating your child" instead of, "You must vaccinate your child," provide multiple avenues by which the child could be vaccinated, utilize other parents as similar peers, and remind parents of their autonomy at the end of the message by saying, "The choice is yours."

We are confident that using more than one strategy in one message could be effective; however, further research is needed to determine which strategies interact successfully, as combined strategies may not always produce anticipated effects (e.g., Bessarobova et al., 2013). However, persuasive messages aiming to minimize reactance arousal could benefit more from using multiple strategies simultaneously rather than using just one.

CONCLUSION

From Brehm's (1966) initial proposal, PRT remains a vital framework for understanding and addressing human responses to perceived threats to freedom. In this chapter, we have shown how, through five over-

lapping waves (Rosenberg & Siegel, 2018), PRT has evolved and expanded its relevance across various fields, particularly in clinical psychology and communication research. Practical strategies such as using empathy (Shen, 2010, 2011), inoculation (Richards et al., 2017), and low-controlling language (Staunton et al., 2022) have been identified as effective in reducing reactance, and they show promise in working better when together rather than separate (Miller et al., 2007). Additionally, concepts like the reactive spiral (Siegel & Rosenberg, 2025) further illuminate the complex interplay between sequential threats and reactance. Overall, PRT's integration with broader motivational frameworks (e.g., Schumpe & Leander, 2025) highlights its enduring relevance and provides a foundation for developing interventions to mitigate reactance and promote positive behavioral change.

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