

Inoculating Resolve: Can Inoculation Messages Protect Commitments to New Year Resolutions?

Abstract

Inoculation theory has established efficacy with a wide range of issues and across context, including politics, health, and commerce. More recently, scholars have extended inoculation into more intrapersonal influences, including perceptions of task self-efficacy and anxiety. This study takes a similar approach, applying inoculation to protect self-generated goals (New Year resolutions) against a range of threats to keeping resolutions. A two-phase experiment assessed inoculation treatments against controls (no message) in an effort to shore up New Year resolutions. Results failed to support inoculation's efficacy. Inoculation treatment messages generated conventional threat but failed to confer resistance as measured by general attitude, confidence, or intention to uphold the resolution. We discuss possible explanations and pose suggestions for future research.

Inoculating Resolve: Can Inoculation Messages Protect Commitments to New Year Resolutions?

Inoculation theory has an established record as an effective health messaging strategy (Compton, Jackson, & Dimmock, 2016), protecting healthy attitudes toward condom use (Parker, Ivanov, & Compton, 2012), alcohol (Godbold & Pfau, 2000), binge drinking (Richards & Banas, 2015), nutrition (Mason & Miller, 2016), cigarette smoking (Pfau, Van Bockern, & Kang, 1992), and vaccines (Wong & Harrison, 2014), among others. More recently, scholars have called for extensions of communication and persuasion theory into other health areas, including physical activity, exercise and sport (Jackson, Dimmock, & Compton, 2018), including, specifically, the application of inoculation theory into protecting healthy behavioral intentions against influences that would discourage such efforts (Compton & Ivanov, 2018). Compton and Ivanov (2018) propose a number of specific health issues in these domains that might benefit from inoculation messaging, including commitment to new exercise programs, like gym memberships.

In this study, we tested inoculation messaging as a way to shore up New Year resolutions. Instead of looking at a specific health resolution—e.g., to eat healthier foods, or to maintain a gym membership—we looked at self-generated resolutions, like the type many people make at the start of each new year. One recent poll found that nearly 30% of people in the US made resolutions for 2018 (“Saint Leo Poll,” 2017).

Because each New Year resolution is unique to the person making it, at least in degrees or manifestations, the inoculation message we tested was more of a generic inoculation treatment, one that attempted to protect against challenges that would threaten adherence to *any* resolution. Such an inoculation message might be akin to the medical concept of a universal

vaccine, like the ongoing work toward a universal flu vaccine that would protect against multiple strains of influenza (Ben-Yedidia, Babecoff, & Arnon, 2017).

New Year Resolutions

New Year resolutions are a specific form of goals, and goals affect behavior. As Locke and Latham (2006) put it:

So long as a person is committed to the goal, has the requisite ability to attain it, and does not have conflicting goals, there is a positive, linear relationship between goal difficulty and task performance. Because goals refer to future valued outcomes, the setting of goals is first and foremost a discrepancy-creating process. It implies discontent with one's present condition and the desire to attain an object or outcome. (p. 265)

Of course, there are many reasons people fail to reach their goals, including poor structuring of goals, poor motivations or reasons (e.g., self-concordance), and failure to develop a plan and anticipate challenges (e.g., implementation intentions) (Koestner et al., 2002).

Perhaps no time period is more common for setting goals than the new year. Indeed, college students in particular set New Year resolutions related to health, academics, social relationships, personality, and others (Koestner et al., 2002). Koestner and colleagues (2002) found that college students were more likely to stick to New Year resolutions when the goal had high self-concordance (that is, the goal was personal and not externally motivated) *and* had set implementation intentions (that is, they had a plan and contingency plans in light of obstacles). The *and* here is key. Without high self-concordance, implementation intentions did not enhance commitment to resolutions in this study.

Inoculation Messaging and Resistance to Influence

The essence of an inoculation-based resistance to influence is that we can be prepared to resist influence (e.g., persuasive arguments, affect states, social pressure) in much the same way that our bodies can be prepared to resist viral influence—through preexposure to weakened forms of the attack. McGuire (1964) emphasizes in his early articulations of the theory that this “mild dose” cannot be “so strong that this pre-exposure will itself cause the disease” (p. 200). Instead of trying to avoid the virus entirely, or boosting one’s immune system with supplements, an inoculation strategy involves embracing the threat itself—albeit a weak version of the threat (see Compton, 2013, for a narrative review).

The two components thought to be at work in conventional inoculation are threat and refutational preemption, which might be better thought of in relationship than separately. Threat in inoculation is perceived vulnerability (Compton, 2013), which motivates individuals to shore up their positions (Banas & Richards, 2017). Inoculation messages usually try to generate threat in two ways—an explicit forewarning that a position will be attacked in the future (McGuire, 1964) and through exposure to examples of the attacks one might face—refuted to create a “mild dose” (McGuire, 1964, p. 200).

The forewarning often occurs early in an inoculation treatment message, with wording along the lines of: “Although you currently have the right position on this issue, you will encounter attacks on your position, and some of these attacks might be so strong, you might change your position.” Exposure to such a forewarning, alone, can be enough to confer some resistance to future influence (McGuire, 1964).

But this resistance is even stronger when a forewarning is accompanied by some of the attack material. The most common way attack material is weakened to be used in an inoculation

treatment message is through a two-sided message format, presenting a few counterarguments (arguments that run counter to an existing position—the position intended to be protected by the treatment message) and refutations of these counterarguments (McGuire, 1964). This represents refutational preemption—the raising and refuting of some attack messages before encountering stronger attack messages (McGuire, 1964; and see Compton, 2013). This refutational preemption component of an inoculation message also generates threat, in addition to a forewarning when a forewarning is also included, and in lieu of a forewarning when it is not (see Compton & Ivanov, 2012).

More recently, scholars have discovered that inoculation messages do more than change how people think and feel about an issue; these messages also change how people talk about an issue. Compton and Pfau (2009) proposed that inoculation messages motivate word-of-mouth communication (WOMC) in two primary ways: 1) advocacy, through the increased confidence and resources one has from the inoculation treatment, and 2) reassurance, a product of the threat component of inoculation treatments. Later, Ivanov and colleagues (2012) confirmed that those inoculated are more likely to talk to others, and in another study, that this talk is mostly for advocacy purposes (Ivanov et al., 2015).

One of the most notable findings of inoculation research, and one that spans decades (Banas & Rains, 2010), is that inoculation messaging not only protects a position by the attacks raised and refuted in the treatment message (sometimes called inoculation-same), but also, protects against new attacks that weren't even mentioned (sometimes called inoculation-different). This “blanket of protection” (Compton & Pfau, 2005, p. 105) or “umbrella of protection” (Pfau et al., 1997, p. 188) is quite large, then, extending to, theoretically, any attack against a position, and, as some research shows, even attacks on related but unmentioned

positions (Parker, Ivanov, & Compton, 2012). It is this effect of inoculation—protection against more than what is raised and refuted in the inoculation treatment message—that gives reason for optimism to develop a sort of universal vaccine, an idea that we explore next.

Inoculation Messaging as “Universal” Vaccine

Developers of annual flu shots are in a tricky situation, because they need to develop a new type of vaccine each year for which strain or strains of the flu are likely to be most active in the upcoming flu season. Ongoing work looks for a “universal” flu vaccine—one that would protect against the flu regardless of which strain is most active (see Ben-Yedidia, Babecoff, & Arnon, 2017). Work in attitudinal inoculation does not need to be quite so restrictive, as raising and refuting a few counterarguments confers protection to other counterarguments that challenge the same issue (Banas & Rains, 2010), and even related issues (Parker, Ivanov, and Compton, 2012).

In this study, we turn to a type of commitment—a health resolution—and test an inoculation messages designed to protect commitment regardless of the actual resolution. Based on extant research in inoculation, we predict:

H: Participants who read an inoculation message will, after a delay, report (a) more positive attitudes toward their resolution; (b) greater intention to uphold their resolution; and (d) higher confidence about upholding their resolution, when compared to controls (no message).

Method

Participants

A total of 137 undergraduate students enrolled in undergraduate Communication courses participated the study. The sample was 56% female ($n=77$) and 46% male ($n=60$) and .7% were non-binary ($n=1$); of these 97.9% were 18-25 years of age ($n=134$) while 1.4% were 26-35 years of age ($n=2$). Respondents were 84.4% white/Caucasian ($n=119$), 7.1% were Hispanic/Latino ($n=10$), 2.8% were African American ($n=4$), while an additional 4.2% identified as either Asian America/Pacific Islander ($n=2$), native American ($n=2$), or multiethnic ($n=2$).

Experimental Materials

The inoculation treatment was a 17-line, 214-word text-based message with no identifiable source and included no visual elements. The treatment entitled '*Keeping your Resolution*' opened with the statement "Making a resolution is the first step. But *keeping* that resolution is important, too. When we first make a resolution, we are committed to following through, and we are usually pretty confident about our ability to do so. But then..." The following three paragraphs included the refutational preemptions and closed with the statement "We will face challenges like these—and others—when we try to keep a resolution. But by preparing for these challenges, we can overcome them, and we can keep our resolutions."

Procedure

In the spring of 2020 participants were invited to participate in a multi-phase message processing study hosted through the Communication Research Lab at a midwestern university using the Qualtrics data capturing system. Phase 1 commenced between January 26 and February 17. Following completion of Phase 1 participants were sent an email with a log-in code to complete Phase 2 within 7-10 days of Phase 1. Phase 2 occurred during the period of February 4

and March 7, 2020. Contact with participants was attempted three times prior to participants being dropped from the study as non-responsive. A total of 99 subjects completed the study resulting in a completion rate of 72%.¹ Participants were asked at the beginning of the experiment if they had already made a resolution or resolutions, 81% ($n=112$) indicated that they had. If they had not they were encouraged to think about a resolution or resolutions prior to continuing with the study. Cronbach's alpha was used to determine the scale reliabilities and is presented following the descriptions of the variables included below.

Dependent Variables

Threat. We used two scales to assess and measure inoculation-induced threat following the treatment message in response to the idea that their commitment to their resolution would be challenged. One was a conventional inoculation threat scale, used in previous inoculation research (e.g., Ivanov et al., 2012). The scale uses six bipolar adjectives, rated on a scale of 1 to 7: *nonthreatening/threatening, not harmful/harmful, not dangerous/dangerous, not risky/risky, calm/anxious, and not scary/scary*. ($n=6, \alpha=.89$) Participants responded to the question:

The next set of items are designed to help us to understand how you feel about the idea expressed at the beginning of the message you just read that, despite your commitment to your resolution, there is a possibility you may encounter challenges to your commitment that are so influential that they may cause you to rethink your commitment. I find this possibility...

The second scale was developed by Banas and Richards (2017) as an alternative to the conventional inoculation threat measure, designed to tap into more of the motivational role of threat in inoculation. The scale uses four items, rated on a scale of 1 to 7. We used Banas and

¹ The COVID-19 global pandemic likely affected our ability to reach all Phase 1 participants and contributed to the lower than anticipated completion rate.

Rains' (2017) wording, asking participants to "indicate your level of agreement with the following statements" (p. 171), with altered wording to reflect our emphasis on *intentions* in our current study and our interest in more generic challenges than conventional persuasive messages:

I want to defend my current intention from attack.

I feel motivated to think about why I hold the commitment I do to my resolution.

I feel motivated to resist challenges to my intention to uphold my resolution.

I want to counterargue challenges to my intention to uphold my resolution. ($n=4$, $\alpha=.81$)

Attitude. We used a scale common to inoculation research to assess attitude toward upholding one's resolution, employing the seven semantic differential items developed by Burgoon et al. (1978). Participants responded to the statement: "My intention to uphold my resolution is: *negative/positive, bad/good, unfavorable/favorable, unacceptable/acceptable, wrong/right, desirable/undesirable, like/dislike, and foolish/wise*" ($n=7$, $\alpha=.84$).

Confidence. To assess confidence in one's ability to uphold a resolution, we asked participants to respond to a single item statement, "I am confident that I can keep my resolution, or resolutions," measured on a 0-100 likelihood scale.

Intentions. To assess intentions to uphold resolutions, used a single item statement: "I intend to keep my resolution, or resolutions," measured on a 0-100 likelihood scale.

Results

A series of univariate analyses were computed on Phase 1 threat (both apprehensive and motivational). Results indicated significant differences on the factors of apprehensive threat $F(1,88)=5.35$, $p<.05$, partial eta squared = .06, but not for motivational threat $F(1,88)=.01$, $p=.99$.

	App Threat		Mov Threat	
	<i>M</i> =	<i>SD</i> =	<i>M</i> =	<i>SD</i> =
Control	2.66	1.18	2.40	.90
Inoculation	3.31 ^a	1.50	2.39	1.01

Note: Items were measured on a 7 pt. Likert scale, higher numbers indicate increased threat
^a indicates significant differences at $p=.05$.

A series of univariate analyses were computed on Phase 2 dependent variables. Results indicated no significant differences on the factors of apprehensive threat $F(1,87)=.50$, $p=.50$, motivational threat $F(1,87)=.04$, $p=.83$, general attitudes $F(1,87)=.22$, $p=.63$, intentions $F(1,87)=.18$, $p=.66$ nor confidence $F(1,87)=1.34$, $p=.25$.

	General Attitude		Intention		Confidence	
	<i>M</i> =	<i>SD</i> =	<i>M</i> =	<i>SD</i> =	<i>M</i> =	<i>SD</i> =
Control	11.22	2.14	82.48	18.07	77.20	20.04
Inoculation	11.01	2.15	80.87	16.00	81.74	15.32

Note: General attitude was measured on a 15 pt. Likert scale with higher scores indicating more positive attitudes; intention and confidence were measured using a 0-100 scale.

Discussion

Inoculation treatments have proven effective against a range of challenges, across issues and contexts, including health (see Compton, Jackson, & Dimmock, 2016, for a review), politics (see Compton & Ivanov, 2013, for a review), public relations (see Compton, Wigley, & Samoilenko, 2021, for a review), and science communication (see Compton, van der Linden, Cook, & Basol, 2021, for a review). Although most inoculation research pits inoculation against

external threats—like fake news (e.g., van der Linden, Roozenbeek, & Compton, 2020) or political attacks (e.g., An & Pfau, 2004), a growing body of inoculation research finds that inoculation can protect against more intrapersonal influences, too, like perceptions of one’s self-efficacy (Jackson et al., 2015) or confidence under stress (Jackson et al., 2017). Based on these findings, we predicted inoculation would be successful in shoring up New Year resolutions, and more to the point, that those who read an inoculation message would, after a delay, report (a) more positive attitudes toward their resolution; (b) greater intention to uphold their resolution; and (d) higher confidence about upholding their resolution, when compared to controls (no message).

In short, we were wrong. Those inoculated felt threatened by the inoculation message (apprehensive threat but not motivational) but failed to display resistance as measured on any of the variables of interest. Has inoculation met its match against the traditionally fraught task of keeping a New Year’s resolution?

Possibly. But we think there are some other explanations that seem reasonable, too. First, toward the end of our data collection, the COVID-19 global pandemic emerged on the public’s radar—a situation that increased general levels of stress (e.g., Kujawa et al., 2020) and shifted priorities. But also, our study had limitations, and some features of our study design should be adjusted in future iterations. First, our control was a no-message condition. For more equivalence with our treatment condition—in which participants read a message—future studies should consider using a neutral message of comparable length, style, etc. in the control condition. Additionally, such an approach would promote a better parallel of measures. In our study, those in the treatment condition (inoculation messages) completed Phase 1 measures twice—before

and after the treatment (inoculation) message. Those in the control condition completely Phase 1 measures only once, as we used a no-message control condition.

Second, there was a good deal of variation in the delay between inoculation and our final measures. In some ways, this is a strength, allowing for the individuality of resolution challenges and the natural occurrence of “attacks” on commitment to a resolution (much like Pfau, Van Bockern, & Kang, 1992, let “attacks” on smoking attitudes occur naturally). But for more precise comparisons, future studies should have clearer timelines for control/experimental conditions. Future studies should also assess whether more specific inoculation messages would be more effective than the generic one we tested here, and whether an actual attack—such as an editorial about the futility of making New Year resolutions—would be a better test of inoculation’s efficacy than letting commitment be threatened naturally.

Third, there were two categories of resolutions reflected in our study’s sample: those who already had a resolution in mind before starting the study, and those who came up with a resolution when prompted by the study. It is possible if not probable that these types of resolutions function differently. We know from previous research that involvement levels can affect inoculation’s efficacy (e.g., Pfau et al., 1997), and it is likely that a resolution formed in the moment would have lesser involvement levels than one held for a longer period of time, and/or a resolution motivated internally would have higher involvement than one motivated externally. We did not test for involvement levels, and future studies should examine whether involvement is a particularly important construct in inoculating resolve.

Whether or not these explanations are reasonable, the findings are—to put it simply—discouraging. Nevertheless, we hope our study contributes to a conversation about new areas for applied inoculation theory research, continuing in the contemporary trend of conferring

resistance to internal forms of influence and persuasion, such as self-efficacy (Jackson et al., 2015) and anxiety (Jackson et al., 2017). A waning commitment to a New Year resolution—more common than not—would benefit from bolstering. Our attempt did not produce robust results but did inspire ideas for next steps. And so, we resolve to keep looking—aware of the future challenges, but now, also aware of how we might respond to those challenges, which is certainly apt for applied inoculation theory research.

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Conference Statement:

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