

## MESSAGE FRAMING INFLUENCES PERCEPTIONS OF FEEDBACK (IN)DIRECTNESS

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Communication varies in indirectness, influencing the effectiveness of the message as well as interpersonal dynamics. However, this issue was not studied empirically in the feedback literature. Integrating communication indirectness and message framing theories, we propose that whether success and failure feedback are framed as a negation (non-losses, non-gains) or affirmation (gains, losses) affects perceived indirectness. Three studies ( $N = 589$ ) consistently showed that both feedback receivers (Studies 1 and 3) and feedback providers (Study 2) viewed feedback in negation (vs. affirmative) frames as more indirect and communicating the feedback signal (positive, negative) less strongly. Feedback providers utilized more negation frames when attempting to be indirect and delivering failure feedback (Study 2). Further, through influencing perceived positivity in feedback, indirectness has downstream effects on feedback providers' use of frames (Study 2) and feedback receivers' reactions (Study 3). This work contributes to our understanding of communication indirectness and its potential implications for feedback effectiveness.

*Keywords:* indirectness, feedback, message framing, negation frame, communication

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Imagine that you have a new assistant to whom you are giving performance feedback. You have not been very impressed, but there is more than one way to convey this feedback. You could tell him or her directly, “you made several mistakes this month,” or you could deliver the news more subtly, “this is not an easy job for anyone to do.” In everyday life, we frequently give and receive feedback—information about how close we are to attaining our goals (Carver & Scheier, 1982). Feedback communication happens across diverse social roles, both informal (e.g., friends, romantic partners) and formal (e.g., teachers, managers). Effective feedback provides information about goal progress (Locke & Latham, 1990b) and has the potential to motivate behavior (to continue on the same course or to make changes; Podsakoff & Farh, 1989). The extent to which feedback meets these aims depends, in part, on how feedback is conveyed (Kluger & DeNisi, 1996).

The feedback literature has examined some dimensions on which feedback can differ, influencing its effectiveness factors such as the timeliness and specificity of feedback (Marlett & Watson, 1968), effort versus ability focus (Dugan, 1989), and task versus process focus (Earley, Northcraft, Lee, & Lituchy, 1990) influence feedback effectiveness. However, as the opening example illustrates, feedback can also vary in how *directly* it is communicated. Linguists have long considered indirectness “a fundamental element in human communication” (Tannen, 1994, p. 79). In fact, management practitioners have noted that leaders express an intention to be indirect when delivering failure feedback, “easing in” to negative messages (e.g., Manzoni, 2002; Meyer, 2014). Yet, the feedback architecture that creates perceptions of indirectness has not been directly studied. Integrating two classic theoretical frameworks—communication indirectness theories (Grice, 1968) and gain/loss message framing (Kahneman & Tversky, 1979)—we propose that framing success and failure feedback as an affirmation (gains, losses) versus negation (non-losses, non-gains) will affect how direct versus indirect the feedback is subjectively perceived.

## PAST RESEARCH ON COMMUNICATION INDIRECTNESS

Grice (1968, 1969) formalized the idea that a message can be conveyed directly versus indirectly in his early philosophical work on meaning and conversational implicature. According to Grice, any utterance has both a sentence meaning (also called “conventional/timeless meaning”) and a speaker meaning (or “utterer’s meaning”). The former refers to the literal meaning of the sentence based on formal definitions of words and rules of sentence structures; the latter refers to the speaker’s intentions. According to this original definition, indirectness in a message indicates an incongruence between speaker meaning and sentence meaning, or more broadly, between “any communicative meaning” in the message and the literal meaning of sentences (Holtgraves, 1997a).

Research in the communication literature has suggested multiple ways that speakers can communicate indirectly by inducing meaning incongruence (Grice, 1975). One typical way, most closely tied to Grice’s original definition, is by creat-

ing a subtle divergence between speaker meaning and sentence meaning (Searle, 1975). For example, if you want someone at the table to pass the salt, you might say, "can you reach the salt?" The literal meaning is whether or not the other person can touch the salt. However, what you intend to communicate is that you want the salt. A second common way in which messages are communicated indirectly is to use hedges or qualifiers to increase the cognitive effort needed to process the literal meaning of a message (Holtgraves, 1994, 1997a). For instance, people often say "Yes, but..." (token agreement) or "I kind of think..." (hedge) before they disagree. These qualifiers, by increasing the complexity of the message, soften the direct intention (Holtgraves, 1997b). Although these indirect communication strategies are diverse, they all render speaker meaning harder to interpret, which can sometimes lead to uncertainty and misunderstanding (Hall, 1976).

Indirectness might obscure speaker meaning, but it can also serve crucial social functions. For instance, research has shown that people often use indirectness to be polite and reduce the likelihood of threatening the other person's face (Brown & Levinson, 1987; Goffman, 1967). At times, a direct request may seem imposing on the listener (e.g., "I want you to pass me the salt"), so the speaker may ask indirectly to convey politeness (e.g., "could you reach the salt?"). Similarly, directly acknowledging a disagreement between the speaker and listener might cause a listener to lose face. Instead of pointedly calling out the disagreement, the speaker may use a token agreement to lessen the negative impact (e.g., "that is true, but..."). While the motive for politeness has been one of the most studied approaches to understanding why people speak indirectly, it is important to note that indirectness does *not* equal politeness (see Blum-Kulka, 1987). Indeed, indirectness can serve other very different social functions (e.g., humor, irony; Haverkate, 1990), including some that are arguably the opposite of politeness (e.g., sarcasm).

Despite its implications across many interpersonal contexts, indirectness has received scant attention in social psychological work on feedback. The current research addresses this gap and posits that indirectness is likely a particularly relevant factor in understanding the delivery of performance-related feedback, perhaps especially for negative or failure feedback. Failure feedback exchange can be difficult, uncertain, and ego-threatening (Kluger & DeNisi, 1996). Given that this sometimes leads to the avoidance of giving feedback altogether (Jeffries & Hornsey, 2012), it may also influence the extent to which feedback providers give feedback directly or indirectly. While feedback could be delivered indirectly in a number of different ways, we propose that the message framing literature provides valuable insights into how indirectness in a feedback context may often unfold. Integrating the communication literature with the message framing literature thus not only highlights a new factor that might influence feedback effectiveness, but also suggests a framework to systematically understand communication indirectness itself.

TABLE 1. Negation and Affirmative Feedback Frames

Outcome Frame	Feedback	
	Positive/Success	Negative/Failure
Gain Frame	Gain (Affirmative)	Non-gain (Negation)
Loss Frame	Non-loss (Negation)	Loss (Affirmative)

## MESSAGE FRAMING AND PERCEPTIONS OF FEEDBACK INDIRECTNESS

Given that no prior work has empirically addressed this phenomenon, we grounded our approach in an eminent and extensive literature examining how subtle differences in language—message framing—can have significant consequences. A rich tradition of message framing research has provided evidence that the same objective outcome can be described in terms of gains/non-gains versus non-losses/losses. One of the most prominent examples is provided by Prospect Theory (Kahneman & Tversky, 1979), which illustrated that subtle differences between a gain and loss frame of the same tangible outcome led to substantial differences in its perceived value.

Since then, understanding people's perceptions toward gain/loss framing is at the center of the message framing literature (Levin, Schneider, & Gaeth, 1998). Past research has illustrated that gain/loss framing affects perceptions such as riskiness (e.g., Kühberger, 1998; Rothman & Salovey, 1997), persuasiveness (e.g., Cesario, Higgins, & Scholer, 2008; Smith & Petty, 1996), fairness (e.g., Li et al., 2011; Liberman, Idson, & Higgins, 2005), and choice attractiveness (e.g., Ganzach & Karahi, 1995; Lee & Aaker, 2004). However, no research yet has directly explored the impact of gain/loss framing on perceptions of *indirectness*. Addressing this gap is essential given that indirectness has many social implications (e.g., Haverkate, 1990; Tannen, 1994), including its potential influence on feedback communication (Green & Carmichael, 2014; Meyer, 2014).

*Affirmative Versus Negation Frames.* Conventionally, the gain/loss framing paradigm varies on two dimensions: message type (i.e., success, failure) and outcome (i.e., gain, loss). As shown in Table 1, success feedback can be framed in terms of gains (presence of positives—"Good work!") or non-losses (absence of negatives—"Not bad!"); failure feedback can be framed in terms of non-gains (absence of positives—"This is not good!") or losses (presence of negatives—"This is bad!"); Cesario, Corker, & Jelinek, 2013).<sup>1</sup> Gain- versus loss-framed feedback messages can be used to describe the same objective outcome (Liberman et al., 2005). For instance, a manager who needs to tell her employee that his performance hurt company profits could either tell him that his work led to losses to the company's

1. Note that there have been inconsistencies in past literature in the use of gain and loss frame labels (see Cesario et al., 2013; Smith & Petty, 1996). Given our discussion of frames intersects with both success and failure, we strictly use the term "gain frames" to refer to either "gain/non-gain" and "loss frames" to refer to either "loss/non-loss."

portfolio (loss frame) or could tell him that his work did not lead to the expected gains (gain frame).

Yet the message and outcome are not the only possible dimensions: Another dimension on which gain/loss framing varies systematically is whether they represent a presence versus an absence of an outcome. We refer to these as “affirmative” versus “negation” frames, respectively (see also Yao, Wang, Peng, & Song, 2017). Affirmative frames are gain-framed successes (gains) and loss-framed failures (losses)—they both represent the *presence* of positive or negative outcomes. Negation frames are loss-framed successes (non-losses) and gain-framed failures (non-gains)—they both represent the *absence* of positive or negative outcomes. Building on communication indirectness theories, we propose that the affirmative-versus-negation dimension in message framing has the potential to influence perceptions of indirectness.

As Grice (1975) suggested, a message becomes indirect as its literal meaning diverges from its speaker meaning. Consider that success feedback carries a positive speaker meaning and failure feedback carries a negative speaking meaning. By modifying the literal meaning of the feedback, negation (vs. affirmative) frames can create separation between the speaker and literal meaning. Success feedback framed as a negation (non-loss) has a negative frame of reference and may create more meaning separation than an affirmative frame (gain). Similarly, failure feedback framed as a negation (non-gain) has a positive frame of reference and may create more meaning separation than an affirmative frame (loss). Because of the increased separation between the speaker and literal meaning, both success and failure feedback in negation frames, relative to affirmative frames, should be perceived as more indirect—a proposal that has not been empirically tested.

*Hypothesis 1* (H1; Studies 1–3): Both feedback receivers and providers will perceive feedback in negation frames (non-losses, non-gains) as more indirect than feedback in affirmative frames (gains, losses).

We will test Hypothesis 1 from the perspective of feedback receivers (Studies 1 and 3) and providers (Study 2). Although we had no a priori reason to expect that the relation between negation frames and indirectness varies as a function of whether individuals are in the role of feedback provider or recipient, it was an empirical question worth exploring. The results of the test of this primary hypothesis have two major theoretical implications. If affirmative and negation frames in feedback affect perceptions of indirectness, the findings will extend the message framing literature by uncovering a novel and critical perception outcome that the existing literature has not previously considered. Moreover, while indirectness has been observed in the context of feedback (e.g., Manzoni, 2002; Meyer, 2014), the current work provides a systematic framework for thinking about its architecture. In the following, we propose and test several implications of perceived indirectness as a function of affirmative and negation frames.

*Implications for Valence Perceptions.* Indirectness may reduce the clarity of a message (Grice, 1975); in a valenced message such as feedback, indirectness may affect

subjective perceptions of feedback valence (i.e., how positive or negative people perceive the feedback to be)—an important contributor to feedback effectiveness. Some research suggests that negation frames are less hedonically intense than affirmative frames. Monetary outcomes (e.g., a discount, salary) led to greater intensity of positive emotions in gain (affirmative) frames than in non-loss (negation) frames, and greater intensity of negative emotions in loss (affirmative) frames than non-gain (negation) frames (Brendl, Higgins, & Lemm, 1995; Idson, Liberman, & Higgins, 2000; Liberman et al., 2005). Based on these observations, framing feedback as a negation versus affirmation may attenuate how intensely people experience the success and failure feedback—their perceptions of feedback valence.

Specifically, success feedback in negation frames (non-losses) relative to affirmative frames (gains) should be perceived as less positive. In contrast, failure feedback in negation frames (non-gains) relative to in affirmative frames (losses), should be perceived as more positive. Moreover, if indeed negation frames attenuate perceptions of valence, it suggests that the difference in perceived valence between success and failure feedback will be weaker in negation (vs. affirmative) frames. This predicted interaction hypothesis involves comparisons of the framing effects on perceived valence both within and between success and failure feedback.

*Hypothesis 2 (H2; Studies 1–3):* Perceived valence will be a function of an interaction between frame (negation vs. affirmative) and feedback (success vs. failure):

- a) Success feedback in negation (vs. affirmative) frames will be perceived as less positive whereas failure feedback in negation (vs. affirmative) frames will be perceived as more positive (H2a); and
- b) The difference in perceived valence between success and failure feedback will be attenuated in negation frames (non-losses vs. non-gains) relative to affirmative frames (gains vs. losses; H2b).

So far, the above hypotheses characterize the vital role of framing feedback in negations versus affirmations in predicting perceptions of feedback indirectness and valence. In the following, we will explore whether indirectness, through influencing perceived valence in feedback, might predict downstream implications for feedback production and reactions.

*Implications of Indirectness for Feedback Production.* Speakers' intentions matter in speech production (Searle, 1975). In the case of feedback, feedback providers' intentions to be indirect and positive may influence their choice of frames. Feedback providers generally recognize that feedback can be threatening to the receiver, especially after a performance failure (Green & Carmichael, 2014; Kluger & DeNisi, 1998). To reduce the threat in failure feedback, feedback providers may aim to play up the level of positivity to soften the blow (Manzoni, 2002); being indirect could be one way to do so. In failure feedback, feedback providers may be more likely to use negation (vs. affirmative) frames to the extent that they perceive such frames as reflecting intentions to be indirect and positive. In contrast, success feedback can be enhancing to an individual's sense of self (e.g., Heine et al., 2001). Because self-

threat is less of a concern, feedback providers may be more likely to use affirmative (vs. negation) frames to the extent that they perceive such frames as reflecting intentions to be direct and positive. In sum, we predict a moderated mediation in which feedback type moderates the relation between intended indirectness and valence, and intended valence, in turn, mediates the relation between intended indirectness and the likelihood of using the frames. We will test this hypothesis in Study 2.

*Hypothesis 3 (H3; Study 2):* For feedback providers, the relation between intended indirectness and valence will depend on the type of feedback. Negation frames reflect a greater intention to be indirect than affirmative frames: in success feedback, this relative difference will result in *affirmative* frames reflecting a greater intention to be positive; in failure feedback, the relative difference will result in *negation* frames reflecting a greater intention to be positive (i.e., moderation). Intentions to be positive, in turn, will prompt a greater likelihood of using the frame (i.e., mediation).

*Implications of Indirectness for Feedback Reactions.* For feedback receivers, *perceptions* of the feedback matter; a parallel hypothesis to Hypothesis 3 can also be made. Namely, the relation between perceptions of feedback indirectness and valence may influence more downstream reactions to the feedback. People make observations of a message and infer intentionality of the communicator (see Waytz, Gray, Epley, & Wegner, 2010). In the case of negative feedback, perceptions of *indirectness* in the use of negation (vs. affirmative) frames, if associated with perceptions of more positive valence, may indicate that the feedback provider is seeking to minimize the threat. As a result, feedback receivers may view the feedback provider as more supportive and report stronger behavioral intentions to commit to future work to the extent that feedback providers use negation versus affirmative frames.

In contrast, in the case of positive feedback, perceptions of *directness* in the use of affirmative (vs. negation) frames, if associated with perceptions of more positive valence, may indicate that the feedback provider is seeking to bolster the feedback receiver. As a result, feedback receivers may view the feedback provider as more supportive and report stronger behavioral intentions to commit to future work to the extent that feedback providers use affirmative versus negation frames. Integrating these predictions, we hypothesize a moderated mediation in which feedback type moderates the relation between perceptions of indirectness and valence, and perceived valence, in turn, mediates the relations between perceived indirectness and feedback reactions. We will test this hypothesis in Study 3.

*Hypothesis 4 (H4; Study 3):* For feedback receivers, the relation between perceived indirectness and valence will depend on the type of feedback. Perceived indirectness in failure feedback will be associated with greater perceived positivity, whereas perceived directness in success feedback will be associated with greater perceived positivity (i.e., moderation). Perceived positivity, in turn, will predict (i) perceived support from the feedback provider and (ii) behavioral intentions to commit to future work (i.e., mediation).

## OVERVIEW OF STUDIES

We conducted three experiments to examine our primary prediction (Hypothesis 1) that people perceive negation frames as more indirect than affirmative frames. These studies took the perspective of feedback receivers (Studies 1 and 3) and feedback providers (Study 2), generalizing the effects to both sides of a feedback communication. In addition, they examined the effect of feedback framing on perceived valence (Hypothesis 2) and explored the implications of indirectness through positivity on feedback production (Hypothesis 3) and feedback reactions (Hypothesis 4). Demographic variables (e.g., age, gender, ethnicity, and past work experience) did not influence our results and therefore are not included in the analyses below. All measures, manipulations, and exclusions in the study are disclosed, as well as the method of determining the final sample size in the method of each study. All data were analyzed after the completion of data collection, and the sample size of each study was predetermined. These studies provide the first and a rigorous empirical test of how message framing systematically influences communication indirectness.

**STUDY 1: FEEDBACK RECEIVERS' PERCEPTION OF FEEDBACK INDIRECTNESS**

This study was pre-registered to examine our primary hypothesis that message framing affects perceived indirectness.<sup>2</sup> Participants imagined a work scenario in which they had succeeded or failed. They then received performance feedback statements that varied in gain and loss frames, and rated their perceptions of each statement (i.e., indirectness and valence). We predicted that people would perceive feedback in negation (vs. affirmative) frames as more indirect (H1), and that negation (vs. affirmative) frames would weaken the detection of the feedback valence (H2).

## METHOD

*Participants, Design, and Power.* Participants completed an online study about communication style and personality in a 2 (Feedback: Success vs. Failure; between subject)  $\times$  2 (Frame: Negation vs. Affirmative; within-subject) mixed design. We aimed to recruit 200 participants at a large Canadian university who completed the study for psychology course credit. This sample size yields 99% power to detect a significant Feedback  $\times$  Frame interaction with a medium effect size (Faul, Erdfelder, Buchner, & Lang, 2009). One hundred ninety-nine undergraduates participated (162 female, 37 male;  $M_{\text{age}} = 19.8$ ,  $SD_{\text{age}} = 2.2$ ). The sample was

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2. The pre-registration information of the study is available at [osf.io/ma2ez](https://osf.io/ma2ez). In real time, we collected the data for this study after all the other studies in this article had been conducted. For coherence and flow of the article, however, we decided to report this study as Study 1.



culturally diverse (38% White, 23% East Asian, 18% South Asian, and 21% others). Most participants had some prior work experience (61%). Participants were first randomly assigned to one of the two feedback conditions. Then they read specific feedback statements that varied in negation and affirmative frames and responded to questions related to each statement. Last, participants completed a battery of other demographic and individual difference questions not related to the current investigation.<sup>3</sup>

*Receiving Feedback.* Participants read a scenario that they had either succeeded or failed in a recent team project at a company (Liden et al., 1999; see Supplemental Materials). In the success feedback condition, participants read that:

“...You did particularly well in your assigned task...the overall quality of the project was greatly enhanced, causing unexpectedly high project returns for your team as well as the company...”

In the failure feedback condition, participants read that:

“...You did particularly poorly on your assigned task...the overall quality of the project was severely affected, causing unexpectedly lower project returns for your team as well as the company...”

*Feedback Frame Manipulation/Sentence Rating.* After reading the scenario, all participants imagined that they received performance feedback from their team leader. The gender of the team leader was matched to the participants' gender. They saw performance feedback statements one at a time and made ratings about perceptions of indirectness and the valence of each statement. Each participant rated 14 statements in random order to avoid any order effects of frames.

In the success condition, participants rated 7 feedback sentences in negation frames (e.g., “Because of your performance, you and your team did not lose the 3 extra paid holidays bonus”) and 7 feedback sentences in affirmative frames (e.g., “Because of your performance, you and your team have gained 3 extra paid holidays bonus”). In the failure feedback condition, participants rated 7 feedback sentences in negation frames (e.g., “You would have gained the \$200 project completion bonus if you did not make the mistake”) and 7 feedback sentences in affirmative frames (e.g., “you lost the \$200 project completion bonus due to your mistake”). All participants rated each sentence in terms of perceived indirectness and valence on a scale from 1 (*Very Direct/Very Negative*) to 7 (*Very Indirect/Very Positive*). For each of these variables, the mean score in each feedback frame (i.e., average of 7 sentences) served as the dependent measure in the analysis (Indirectness:  $\alpha_{\text{mean}} = .70$ ; Perceived valence:  $\alpha_{\text{mean}} = .74$ ; see Appendix A for all feedback statements).

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3. See Supplemental Materials for the full list of all exploratory and individual difference measures included in the studies. All analyses reported in the article were run without any control variables.

**TABLE 2. Descriptives, Tests of Simple Effects, and Comparisons Across Dependent Variables in All Studies**

		Means (SD)		df	F	p	$\eta_p^2$	95% CI $\left  \frac{\bar{x}_1 - \bar{x}_2}{ x_1 - x_2 } \right $
Study 1		Negation	Affirmative					
Indirectness	Success	3.69 (1.06) <sup>a</sup>	2.67 (1.03) <sup>b</sup>	98	85.40	< .001	.47	.77, 1.19
	Failure	2.57 (.98) <sup>c</sup>	2.10 (1.03) <sup>d</sup>	99	55.82	< .001	.36	.35, .60
Valence	Success	4.13 (1.06) <sup>b</sup>	5.80 (.69) <sup>a</sup>	98	330.53	< .001	.77	1.48, 1.85
	Failure	2.80 (.76) <sup>c</sup>	2.19 (1.03) <sup>d</sup>	99	125.35	< .001	.56	.50, .72
Study 2		Negation	Affirmative					
Indirectness	Success	3.87 (1.22) <sup>a</sup>	2.62 (1.33) <sup>b</sup>	102	75.37	< .001	.42	.97, 1.54
	Failure	2.65 (1.17) <sup>b</sup>	2.18 (1.29) <sup>c</sup>	99	37.12	< .001	.27	.32, .62
Valence	Success	3.94 (1.14) <sup>b</sup>	6.17 (.71) <sup>a</sup>	102	360.55	< .001	.78	2.00, 2.46
	Failure	3.29 (1.02) <sup>c</sup>	2.46 (1.29) <sup>d</sup>	99	85.62	< .001	.46	.65, 1.01
Study 3		Negation	Affirmative					
Indirectness	Success	3.13 (1.83) <sup>a</sup>	2.38 (1.73) <sup>b</sup>	92	4.13	.045	.04	.02, 1.47
	Failure	1.90 (1.16) <sup>b</sup>	1.44 (.93) <sup>c</sup>	91	4.28	.041	.05	.02, .90
Valence	Success	3.34 (1.52) <sup>b</sup>	5.81 (1.14) <sup>a</sup>	92	79.42	< .001	.46	1.92, 3.02
	Failure	2.94 (1.49) <sup>b</sup>	2.09 (1.04) <sup>c</sup>	91	9.77	.002	.10	.31, 1.39

Note. Within each perception variable, means that share the same letter superscript are not statistically different from each other ( $p > .05$ ). Studies 1 and 2 have a mixed design of Frame (within-subject)  $\times$  Feedback (between-subject). Study 3 has a  $2 \times 2$  between-subject design. 95% CI  $\left| \frac{\bar{x}_1 - \bar{x}_2}{|x_1 - x_2|} \right|$  represents the 95% confidence interval of the absolute difference in means.

## RESULTS

We analyzed ratings of the standardized statements to test Hypotheses 1 and 2. Descriptives and tests of simple effects are reported in Table 2.

*Perceived Indirectness (H1).* A dependent  $t$ -test was conducted to compare participants' indirectness ratings of negation and affirmative frames. As predicted, participants perceived negation frames as more indirect ( $M = 3.13$ ,  $SD = 1.18$ ) than affirmative frames ( $M = 2.38$ ,  $SD = 1.07$ ),  $t(198) = 10.93$ ,  $p < .001$ ,  $\eta_p^2 = .38$ .<sup>4</sup> Results supported Hypothesis 1.

*Perceived Valence (H2).* We then tested whether perceived valence was a function of an interaction between feedback condition and frame. Ratings of perceived valence of the sentences were analyzed using a 2 (Feedback: Success vs. Failure; between-subject)  $\times$  2 (Frame: Negation vs. Affirmative; within-subject) repeated-measures ANOVA.

4. Some frames embedded standardized numerical values (e.g., number of bonus holidays gained or lost, value of profit gained or lost; 6 out of 14 statements), which could arguably be more objectively equivalent than those that did not (8 out of 14 statements). As supplementary analyses, we tested if this matters and results found no support—analyzing the two types of statements separately yielded the same patterns of perceptions. Therefore, the current finding was unlikely an artifact of varying degrees of information equivalence.

There were significant main effects of Feedback and Frame on perceived valence. Confirming the feedback manipulation, success feedback was perceived as more positive than failure feedback,  $F(1, 197) = 702.27, p < .001, \eta_p^2 = .78$  ( $M_{\text{success}} = 4.93, SD = .65; M_{\text{failure}} = 2.48, SD = .65$ ). Feedback sentences in negation (vs. affirmative) frames were on average perceived as less positive,  $F(1, 197) = 101.99, p < .001, \eta_p^2 = .34$  ( $M_{\text{negation}} = 3.43, SD = .78; M_{\text{affirmative}} = 3.98, SD = 1.04$ ). As predicted, these differences were qualified by a significant Feedback  $\times$  Frame interaction,  $F(1, 197) = 475.03, p < .001, \eta_p^2 = .71$ . Specifically, people perceived success feedback in negation (vs. affirmative) frames as less positive, whereas failure feedback in negation (vs. affirmative) frames as more positive (H2a; see Table 2). Moreover, the difference in perceived valence—between success and failure feedback—was attenuated in negation frames,  $B = 1.25, SE = .11, t(197) = 11.38, p < .001, \eta_p^2 = .040, 95\% \text{ CI}_{|\bar{x}_1 - \bar{x}_2|} [1.04, 1.47]$ , relative to affirmative frames,  $B = 3.64, SE = .10, t(197) = 34.89, p < .001, \eta_p^2 = .86, 95\% \text{ CI}_{|\bar{x}_1 - \bar{x}_2|} [3.43, 3.84]$  (H2b). Results supported Hypothesis 2 that negation (vs. affirmative) frames weaken the detection of the feedback valence.

## DISCUSSION

Study 1 provided initial evidence in support of our hypotheses. Feedback frames affected perceptions of indirectness across both success and failure feedback. Negation frames were perceived as less direct than affirmative frames (H1) and weakened the detection of the perceived valence (H2). Importantly, negation (vs. affirmative) frames indeed appear to be another approach by which one can create distance between speaker meaning and literal meaning, consistent with Grice's (1975) theories. Building on these results, the next study investigates whether feedback providers' intentions mirror receivers' perceptions observed in Study 1, and moreover, examines whether intentions to be indirect affect their use of frames in providing success and failure feedback.

## STUDY 2: FEEDBACK PROVIDERS' PERCEPTION AND USE OF FRAMES

Study 2 takes the feedback providers' perspective and tests three hypotheses: whether feedback in negation (vs. affirmative) frames (i) reflects a greater intention to be indirect (H1), (ii) interacts with feedback type (success vs. failure), to predict intended positivity (H2), and (iii) is used to different extents across success and failure feedback because of the dynamics between intended indirectness and positivity (H3). As the focus is on feedback providers, it is meaningful to recruit a sample that has frequent feedback delivery experience. Therefore, we invited full-time employees who held a supervisory position at work to participate in this study.

Participants played the role of the feedback provider in the scenario from Study 1. In the scenario, they needed to provide feedback to their subordinate who either succeeded or failed. They read standardized negation- and affirmative-framed

feedback statements (also adapted from Study 1). For each statement, they responded to three measures: their likelihood of using each frame to provide the feedback, level of intentions to be indirect if they used that frame, and level of intentions to be positive if they used that frame. These measures were used to test Hypotheses 1 to 3, and more broadly, allowed the test of whether receivers' perceptions (Study 1) generalize to providers' intentions in feedback communication.

From the feedback providers' perspective, one phenomenon that the standardized statement approach does not capture is the extent to which feedback frames vary naturally in feedback provision. Previously, we hypothesized that feedback providers might recognize that negation (vs. affirmative) frames reflect a greater intention to be indirect (H1). Flipping the relation around, it is also possible that individuals who intend to be more indirect in their feedback may use more negation (vs. affirmative) frames, a phenomenon that is likely to be more pronounced when delivering failure (vs. success) feedback which can be threatening to the recipient (Brown & Levinson, 1987; Manzoni, 2002).

Our sample of experienced feedback providers offers an opportunity to explore this phenomenon with the help of a behavioral measure. In addition to standardized statements, we asked participants to write performance feedback—as an open-ended response—to the subordinate in the scenario who either succeeded or failed. Afterward, they reported their level of intention to be direct or indirect in the feedback as an individual difference measure. We expected that individual differences in the intention to be indirect might serve as a moderator, enhancing the likelihood of the use of negation frames in failure feedback. To avoid any influence of standardized statements on participants' open-ended responses, participants completed the open-ended response task before reading the standardized statements in the actual study.

## METHOD

### Participants, Design, and Power

Participants completed an online study about communication style and personality in a 2 (Feedback: Success vs. Failure; between-subject)  $\times$  2 (Frame: Negation vs. Affirmative; within-subject) mixed design. We aimed to recruit at least 200 participants on Amazon's MTurk, who were U.S. full-time employees and held a supervisory role at work. This sample size yields 99% power to detect a significant Feedback  $\times$  Frame interaction with a medium effect size (Faul et al., 2009). Anticipating some missing data, we recruited 220 people. Among them, 215 participants completed the survey (105 female, 110 male;  $M_{\text{age}} = 35.2$ ,  $SD_{\text{age}} = 9.87$ ; 66% White, 7% Black; 6% Asian, and 21% others) and most were sales and retail managers and team supervisors. One participant reported not having any former supervisory experience and thus was not included in the analysis. The median number of years of supervisory experience was 6, and the median number of subordinates was 5. Five participants had significant missing data and were excluded from the analyses. Another 6 participants provided incomprehensible responses to the open-ended

ed question (e.g., “ewrfdwerf...”) and were also excluded. This screening process resulted in a final sample of 203 for analysis.<sup>5</sup>

In this study, participants were randomly assigned to one of two feedback conditions, and then asked to write open-ended feedback to the subordinate. Afterward, they read the feedback sentences that varied in negation and affirmative frames (from Study 1) and responded to questions related to each feedback sentence. Last, they also completed a battery of other demographic and individual differences questions.

### Giving Feedback

Participants read a scenario in which a gender-matched subordinate performed particularly well or poorly (adopted from Study 1; see Supplemental Materials). Because we had a work sample, we were also interested knowing whether these scenarios were ecologically valid, resembling real-world situations. At the end of the survey, two questions asked participants whether “situations like that in the scenario happen in your workplace” from 1 (*Not at All*) to 7 (*Very Often*) and whether “the scenario appears strange to your experience as a manager/leader” from 1 (*Not at All*) to 7 (*Extremely Strange*). Results indicated that these full-time supervisors did experience similar situations at work ( $M = 4.34$ ,  $SD = 1.48$ ), and did not find the scenario to be strange ( $M = 2.45$ ,  $SD = 1.58$ ); there was no difference across conditions,  $ps > .190$ .

*Open-Ended Feedback Writing.* Participants wrote open-ended performance feedback to the subordinate. In the success condition, participants were instructed to “...talk to Jesse about his good work and tell him what you feel and what you want him to do...”; in the failure condition, participants were instructed to “...talk to Jesse about his poor work and tell him what you feel and what you want him to do...” (see Supplemental Materials).

To assess the spontaneous use of frames, three coders independently coded participants’ open-ended feedback in random order. Before coding, coders were trained and had to pass a test of accurately differentiating between standard gain/loss framing. These coders individually counted how many times gain and loss frames were used in each participant’s feedback writing. Affirmative frames comprise gain-framed success feedback and loss-framed failure feedback, which explicitly mentioned the presence of positive or negative outcomes (e.g., “the project was a great success”); negation frames comprise loss-framed success feedback and gain-framed failure feedback, which explicitly mentioned the absence of positive or negative outcomes (e.g., “you could have put a lot more effort into that project”). Because reliabilities of the coding were high ( $\alpha_{\text{negation}} = .89$ , and  $\alpha_{\text{affirmative}} = .82$ ), we averaged coders’ counts to create an overall score for the number of negation and affirmative frames employed in the open-ended feedback for each participant.

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5. The patterns of results were the same with or without excluding participants.

*Intention To Be Indirect.* Immediately after participants completed their written performance feedback, we measured their conscious intention to be direct or indirect by asking them to indicate how much they were trying to be “as direct as possible” in their feedback (*Not at All*) to 7 (*Very Much*). We reverse-coded the rating to reflect participants’ intention to be indirect. As we expected that the use of negation (vs. affirmative) frames in feedback depended on the feedback provider’s intention to be indirect, this measure served as a moderator in the analysis.

*Feedback Frame Manipulation/Sentence Rating.* Participants were then presented feedback sentences one at a time and made ratings about their (i) likelihood to use the frame, (ii) intended level of indirectness, and (iii) intended level of valence of each sentence. Each participant rated 8 sentences in random order: 4 negation frames and 4 affirmative frames (adopted from Study 1; see Supplemental Materials). For each sentence, participants were asked the likelihood they would say it (from 1 = *Very Unlikely* to 7 = *Very Likely*), to what extent they would be trying to be indirect if they said it (from 1 = *Very Direct* to 7 = *Very Indirect*), and to what extent they would be trying to be positive if they said it (from 1 = *Very Negative* to 7 = *Very Positive*). Each of the three variables formed two mean scores, one for negation frames and one for affirmative frames, which served as the dependent measures in the analysis (Indirectness:  $\alpha_{\text{mean}} = .67$ ; Valence:  $\alpha_{\text{mean}} = .69$ ; Likelihood to say:  $\alpha_{\text{mean}} = .63$ ).

## RESULTS

Following the order of the hypotheses, we first reported results of the ratings of the standardized statements, and then moved on to analyzing the open-ended feedback. See Table 2 for descriptives and tests of simple effects.

### Standardized Feedback Frames

*Intended Indirectness (H1).* A dependent *t*-test was conducted to compare participants’ indirectness ratings of negation and affirmative frames. As predicted, participants viewed negation frames as reflecting a greater intention to be indirect ( $M = 3.06$ ,  $SD = 1.13$ ) than affirmative frames ( $M = 3.06$ ,  $SD = 1.13$ ),  $t(202) = 9.99$ ,  $p < .001$ ,  $\eta_p^2 = .33$  (see Figure 1). This finding replicated Study 1, providing evidence that feedback providers also recognize negation (vs. affirmative) frames as more indirect.

*Intended Valence (H2).* Next, we tested whether intended valence was a function of an interaction between feedback condition and frame. Ratings of the intended valence of the sentences were analyzed using a 2 (Feedback: Success vs. Failure; between-subject)  $\times$  2 (Frame: Negation vs. Affirmative; within-subject) repeated-measures ANOVA.

There was a significant main effect of Feedback,  $F(1, 201) = 285.59$ ,  $p < .001$ ,  $\eta_p^2 = .59$  ( $M_{\text{success}} = 5.06$ ,  $SD = .92$ ;  $M_{\text{failure}} = 2.87$ ,  $SD = 1.16$ ), and a significant main effect of Frame,  $F(1, 202) = 88.31$ ,  $p < .001$ ,  $\eta_p^2 = .31$  ( $M_{\text{negation}} = 3.62$ ,  $SD = 1.08$ ;  $M_{\text{affirmative}} =$

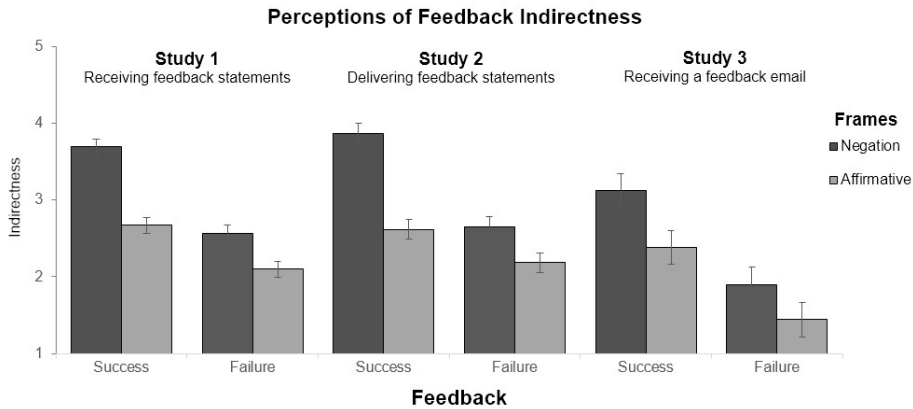


FIGURE 1. A panel of perceived indirectness of feedback in negation and affirmative frames across success and failure feedback conditions in all studies. Error bars are means  $\pm$  1 SE (within-conditions).

4.31,  $SD = 1.04$ ). Importantly, as predicted in H2, the main effects were qualified by a significant Feedback  $\times$  Frame interaction,  $F(1, 201) = 424.96, p < .001, \eta_p^2 = .68$ . Success feedback in negation (vs. affirmative) frames was viewed as reflecting a weaker intention to be positive, whereas failure feedback in negation (vs. affirmative) frames was viewed as reflecting a stronger intention to be positive (H2a; see Table 2). Moreover, the difference in intended levels of valence—between success and failure feedback—was attenuated in negation frames,  $B = .65, SE = .15, t(201) = 4.29, p < .001, \eta_p^2 = .08, CI_{|x1-x2|} [.35, .95]$ , relative to affirmative frames,  $B = 3.71, SE = .15, t(201) = 25.50, p < .001, \eta_p^2 = .76, 95\% CI_{|x1-x2|} [3.43, 4.00]$  (H2b).

*Moderated Mediation (H3).* We then examined whether the likelihood of using a frame was influenced by the intentions to be indirect and positive in a moderated mediation model. We hypothesized that, in success feedback, affirmative frames reflect a greater intention to be direct and positive; in failure feedback, negation frames reflect a greater intention to be indirect and positive (i.e., moderation). Intended positivity of frames, in turn, will prompt a greater likelihood of using the frame (i.e., mediation).

To test the moderated mediation, we followed the percentile bootstrapping approach of moderated mediation with 10,000 bootstrapped samples (Preacher, Rucker, & Hayes, 2007; Model 8). Because of the within-subjects design of Frame, we first created difference scores (negation frame scores minus affirmative frame scores) within each of the variables: indirectness, valence, and likelihood to use the frame. Second, we included the grand mean-centered means (across negation and affirmative frames) of indirectness and valence as controls (see Montoya & Hayes, 2017).<sup>6</sup> This analysis included a regression test for the interaction effect between

6. Without the controls yielded a similar pattern and significance level of the indirect effects.

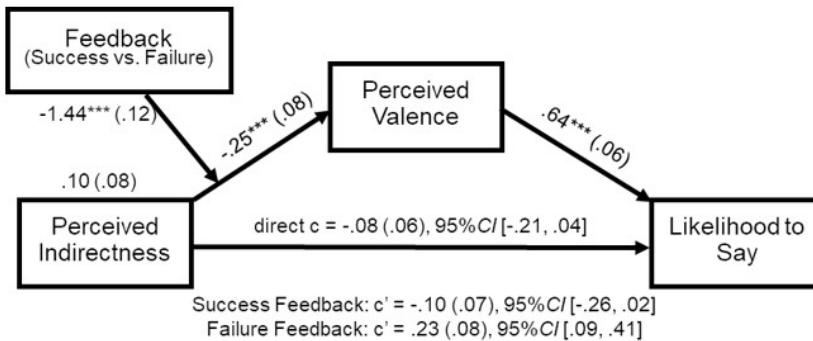


FIGURE 2. The indirect effect of perceived indirectness on the likelihood to use the frame via perceived valence, moderated by feedback condition (Study 2). Estimates are unstandardized coefficients with standard errors reported in parentheses (see all estimates in Table S3). Feedback conditions: Success = 1 and Failure = -1. Perceived indirectness was mean-centered in the analysis.  $***p \leq .001$ .

intended indirectness and feedback condition on intended valence, along with a test for the mediating effect of intended valence on the likelihood to use the frame.

As Figure 2 indicates, the intention to be indirect interacted with feedback condition, predicting feedback providers' intended valence,  $p = .001$ , 95% CI [-.40, -.10]. Intended valence, in turn, predicted the likelihood of using the frame in feedback,  $p < .001$ , 95% CI [.53, .77]. The indirect effects of indirectness on the likelihood to use the frame were asymmetrical: negative for successful feedback, but positive for failure feedback. This means that, to make feedback more positive, feedback providers intended to deliver failure (vs. success) feedback using frames that they considered more (vs. less) indirect. A test of moderated mediation index was significant,  $B = -.33$ ,  $SE = .11$ , 95% CI [-.58, -.14], suggesting that the two indirect effects differed from each other and intended indirectness predicts divergent usage of frame in success and failure feedback. Supplementary analyses switching the order of the variables in the mediation model rendered both indirect effects and moderated mediation indices nonsignificant, providing additional support for the predicted direction of the indirect effects.

### Coding of Open-Ended Feedback (H1)

Last, we turned to examine participants' open-ended feedback (completed prior to rating the sentences above). We conducted a repeated measure ANOVA, using the coders' negation and affirmative frame scores as the within-subject dependent variables. As we expected that the use of frames would depend on the individual difference in feedback providers' intention, we examined participants' intention to be indirect as a moderator, along with the frame and feedback condition.

There was a significant main effect of Frame, such that participants on average used more affirmative than negation frames,  $F(1, 202) = 102.18$ ,  $p < .001$ ,  $\eta_p^2 = .34$



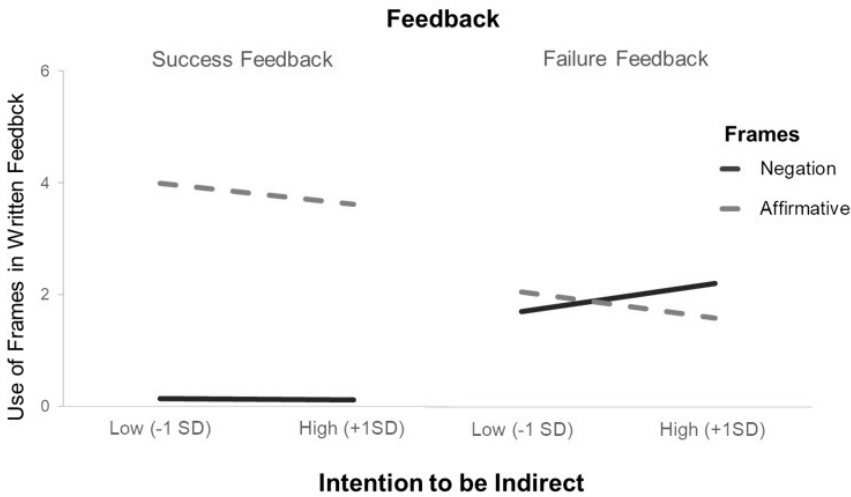


FIGURE 3. Number of negation and affirmative frames used as a function of feedback providers' intention to be indirect and feedback conditions (Study 2).

( $M_{\text{negation}} = 1.02$ ,  $SD = 1.21$ ;  $M_{\text{affirmative}} = 2.80$ ,  $SD = 1.69$ ). There were no main effects of Feedback,  $F(1, 201) = 1.52$ ,  $p = .219$ , and of the intention to be indirect,  $F(1, 201) = .91$ ,  $p = .342$ . Importantly, we expected that individuals who intend to be more indirect in their feedback may use more negation (vs. affirmative) frames (i.e., an alternative form of H1). Supporting this notion, there was a significant Frame  $\times$  Intention to be Indirect interaction,  $F(1, 201) = 12.23$ ,  $p = .001$ ,  $\eta_p^2 = .06$ . Indeed, feedback providers' intention to be indirect was associated with the use of more negation frames,  $t(202) = 2.98$ ,  $p = .003$ ,  $\eta_p^2 = .04$ , and less affirmative frames,  $t(202) = -3.02$ ,  $p = .003$ ,  $\eta_p^2 = .04$ . It is noteworthy that this interaction was qualified by a higher-order three-way interaction between Feedback  $\times$  Frame  $\times$  Intention to be Indirect,  $F(1, 199) = 9.55$ ,  $p = .002$ ,  $\eta_p^2 = .05$ , suggesting that the relation between the intention to be indirect and use of frame depended on the type of feedback (see Figure 3).<sup>7</sup>

For failure feedback, the Frame  $\times$  Intention to be Indirect interaction was significant,  $F(1, 98) = 10.05$ ,  $p = .002$ ,  $\eta_p^2 = .09$ . The stronger the participant's intention to be indirect when writing the failure feedback, the more negation frames they used,  $B = .24$ ,  $SE = .10$ ,  $p = .017$ , 95% CI [.04, .44], and the fewer affirmative frames they used,  $B = -.23$ ,  $SE = .11$ ,  $p = .036$ , 95% CI [-.44, -.02]. For success feedback, there was no significant interaction between Frame and Intention to be Indirect,  $F(1, 101)$

7. The Feedback  $\times$  Intention to be Indirect interaction was nonsignificant,  $F(1, 199) = 1.02$ ,  $p = .314$ .  
 2. The Feedback  $\times$  Frame interaction was significant,  $F(1, 201) = 248.17$ ,  $p < .001$ ,  $\eta_p^2 = .55$ . Participants used more affirmative frames to deliver success (vs. failure) feedback,  $B = 2.08$ ,  $SE = .19$ ,  $t = 11.12$ ,  $p < .001$ ,  $\eta_p^2 = .38$ , 95% CI [1.71, 2.45], and more negation frames to deliver failure (vs. success) feedback,  $B = -1.81$ ,  $SE = .11$ ,  $t = -16.02$ ,  $p < .001$ ,  $\eta_p^2 = .56$ , 95% CI [-2.04, -1.59]. For success feedback, participants wrote more affirmative frames than negated loss frames,  $t(102) = 25.17$ ,  $p < .001$ ,  $\eta_p^2 = .86$ , 95% CI [-3.99, -3.41]. For failure feedback, participants used similar numbers of negated and affirmative frames,  $t(99) = 1.15$ ,  $p = .251$ ,  $\eta_p^2 = .01$ .

= 1.47,  $p = .228$ ,  $\eta_p^2 = .01$ . Taken together, results suggested that individuals who intend to be more indirect in their feedback would use more negation (vs. affirmative) frames (H1), yet this pattern was driven primarily by the delivery of feedback on a performance failure, not a success.

## DISCUSSION

In sum, Study 2 showed that feedback providers' intentions mirrored feedback receivers' perceptions (Study 1). Results of standardized feedback sentences supported Hypotheses 1 to 3. Feedback providers viewed negation (vs. affirmative) frames as reflecting a greater intention to be indirect (H1). Feedback frames interacted with feedback type, success and failure, to predict intended positivity (H2). Feedback providers reported a greater likelihood of using negation (vs. affirmative) frames for failure (vs. success) feedback to the extent that intended indirectness was associated with intended positivity (H3). In a replication study using a comparable design but an undergraduate sample ( $N = 196$ ), we found a very similar pattern of results (see supplementary study details in Supplemental Materials). Thus, these results appear robust and do not depend on age or work experience.

Moreover, Study 2 included a measure of spontaneous feedback provision behavior that has higher external validity compared to standardized sentence ratings. Analyzing participants' spontaneous feedback revealed that the individual difference in the intention to be indirect matters for the use of frame. Feedback providers' intention to be indirect was associated with a greater use of negation (vs. affirmative) frames. This tendency primarily happened in failure feedback, consistent with prior work emphasizing the importance of indirectness in self-threatening and face-sensitive situations (Brown & Levinson, 1987; Holtgraves, 1997b). Together, Study 2 results suggest that feedback providers understand the contribution of negation frames to indirectness, and take advantage of negation frames in feedback provision when they intend to be indirect.

## STUDY 3: FEEDBACK RECEIVERS' PERCEPTIONS REVISITED

Study 2 showed that feedback providers indeed regulated indirectness in feedback communication, influencing how the feedback was framed. The mediation analyses suggest that this stems, at least in part, from an intention to be positive. Study 3 builds on these findings by returning to the perspective of the feedback receiver. Going beyond the results that indirectness (vs. directness) in failure (vs. success) feedback felt more positive, Study 3 investigated downstream consequences.

As discussed in the introduction, it is possible that perceived indirectness, through influencing perceived positivity, affect reactions to the feedback. Particularly, we hypothesized that, in failure feedback perceived *indirectness* will be associated with greater perceived positivity, whereas in success feedback perceived *directness* will be associated with greater perceived positivity (i.e., moderation).

Perceived positivity, in turn, will predict (i) perceived support from the feedback provider and (ii) behavioral intentions to commit to future work (i.e., mediation; H4). As in Study 2, these relations will be examined using a moderated mediation analysis.

Last, we made a methodological change to enhance the impact of this study. Instead of asking participants to rate individual feedback statements, this study manipulated feedback in the form of an e-mail. This provides a more naturalistic context for feedback provision and serves as a conceptual replication of previous findings. That is, we used a different experimental paradigm to test whether people perceive feedback in negation (vs. affirmative) frames as more indirect (H1), and whether negation (vs. affirmative) frames weaken the detection of the feedback valence (H2).

## METHOD

*Participants, Design, and Power.* Participants participated in an online survey about communication style and personality in a 2 (Feedback: Success vs. Failure)  $\times$  2 (Frame: Negation vs. Affirmative) between-subject design. We aimed to recruit approximately 200 participants over an academic term for psychology course credit; this would yield 94% power to detect a Frame  $\times$  Feedback interaction with a medium effect size. One hundred and ninety-eight undergraduates at a large Canadian university participated (151 female, 45 male;  $M_{\text{age}} = 20.8$ ,  $SD_{\text{age}} = 5.6$ ; 56% White, 17% East Asian, 11% South Asian, 5% Southeast Asian; and 11% others; 65% have work experience). Among these participants, 11 had missing data and were excluded from the analysis, resulting in a final sample of 187 people. In this study, participants first completed a battery of demographic and other individual difference questions. They were then randomly assigned to one of the two feedback conditions, asked to imagine the work scenario and read feedback in an e-mail from their supervisor. Afterward, they responded to questions related to the feedback.

*Receiving Feedback.* Similar to Study 1, participants read a gender-matched scenario in which they were told they had performed well (success) or poorly (failure) on a recent team project at a company (Liden et al., 1999; see Supplemental Materials).

*Feedback Framing Manipulation in the E-mail.* Participants then imagined that they received an e-mail (negation- vs. affirmative-framed) from their team project leader about their performance. For consistency, these e-mails were composed of the feedback statements in negation and affirmative frames adapted from Study 2 (see the e-mails in Supplemental Materials). After reading, participants rated the e-mail in terms of perceived indirectness and positivity on a scale from 1 (*Very Direct/Very Negative*) to 7 (*Very Indirect/Very Positive*).

*Perceived Support.* Based on the scenario, we included three items to measure participants' perception of support from the feedback provider (Amabile, Schat-

zel, Moneta, & Kramer, 2004;  $\alpha = .86$ ); for example, "I receive encouragement and support from the team leader" from 1 (*Not at all*) to 7 (*Extremely*).

*Behavioral Intentions.* We measured post-feedback behavioral intentions to work with a 12-item scale adapted from Lockwood, Jordan, and Kunda (2002);  $\alpha = .85$ . A sample item was, "I plan to work harder for the coming project" from 1 (*Not at all*) to 7 (*Extremely*).

## RESULTS AND DISCUSSION

We first tested Hypotheses 1 and 2 with ratings of the feedback e-mail, and then moved on to analyzing feedback reactions. See Table 2 for descriptives and tests of simple effects.

*Perceived Indirectness (H1).* An independent *t*-test was conducted to investigate whether perceptions of indirectness differed across feedback e-mails with negation versus affirmative frames. As predicted, participants perceived the e-mails with negation frames as more indirect ( $M = 2.49$ ,  $SD = 1.63$ ) than the e-mails with affirmative frames ( $M = 1.93$ ,  $SD = 1.47$ ),  $t(185) = 2.46$ ,  $p = .015$ ,  $\eta_p^2 = .03$  (see Figure 1). The result is consistent with Studies 1 and 2 findings and supported Hypothesis 1.

*Perceived Valence (H2).* We then conducted a 2 (Feedback: Positive vs. Negative)  $\times$  2 (Frame: Negation vs. Affirmative) between-subject ANOVA to analyze perceived valence of the e-mails. There were significant main effects of Feedback,  $F(1, 183) = 112.80$ ,  $p < .001$ ,  $\eta_p^2 = .38$  ( $M_{\text{success}} = 4.57$ ,  $SD = 1.32$ ;  $M_{\text{failure}} = 2.52$ ,  $SD = 1.33$ ) and Frame on perceived valence of the e-mail,  $F(1, 183) = 17.50$ ,  $p < .001$ ,  $\eta_p^2 = .09$  ( $M_{\text{negation}} = 3.14$ ,  $SD = 1.30$ ;  $M_{\text{affirmative}} = 3.95$ ,  $SD = 1.35$ ). As predicted, the Feedback  $\times$  Frame interaction was significant,  $F(1, 183) = 17.50$ ,  $p < .001$ ,  $\eta_p^2 = .09$ . The success feedback e-mail in negation (vs. affirmative) frames was perceived as less positive, whereas the failure feedback e-mail in negation (vs. affirmative) frames was intended to be more positive (H2a; see Table 2). For e-mails using affirmative frames, perceived valence between success and failure feedback differed significantly,  $F(1, 88) = 260.04$ ,  $p < .001$ ,  $\eta_p^2 = .75$ . However, for e-mails using negation frames, perceived valence between success and failure feedback did not differ,  $F(1, 95) = 1.71$ ,  $p = .194$ ,  $\eta_p^2 = .02$  (H2b). Results supported Hypothesis 2.

### Behavioral Intentions and Perceived Support as Downstream Consequences (H4)

Next, we examined feedback reactions as the downstream consequences of perceived indirectness. Specifically, we tested whether the asymmetrical effects of indirectness across success and failure feedback would be related to perceived support from the feedback provider and behavioral intentions.

*Perceived Support.* We used the same bootstrapping approach of moderated mediation in Study 2, except we did not employ difference scores because of the between-subject design. As Figure 4 indicates, perceived indirectness interacted with feedback condition in predicting perceived valence of the feedback,  $p = .004$ , 95% CI [-.43, -.08]. The more people perceived the e-mail as positive, the more they perceived the feedback provider as supportive,  $p < .001$ , 95% CI [.48, .71]. As expected, the indirect effects of perceived indirectness were asymmetrical. Through increased positivity of the e-mail, more *direct* success feedback led to more perceived support; in contrast, more *indirect* failure feedback tended to result in more perceived support. The test of moderated mediation index showed that the two conditional indirect effects were independent as they differed significantly from each other,  $B = -.31$ ,  $SE = .11$ , 95% CI [-.56, -.10].

*Behavioral Intentions.* We also tested the conditional indirect effects of indirectness on behavioral intentions. As seen in Figure 4, the more people perceived the e-mail as positive the more they reported stronger work-relevant behavioral intentions,  $p < .001$ , 95% CI [.09, .32].<sup>8</sup> The indirect effects of perceived indirectness on behavioral intentions were again asymmetrical. Through increased positivity of the e-mail, more *direct* success feedback led to stronger behavioral intention to work harder; in contrast, more *indirect* failure feedback led to stronger behavioral intention to work harder. The test of moderated mediation index revealed that the two conditional indirect effects differed significantly from each other,  $B = -.10$ ,  $SE = .05$ , 95% CI [-.21, -.03].<sup>9</sup> Results provided support for Hypothesis 4.

## GENERAL DISCUSSION

Three experiments examined how feedback in negation versus affirmative frames affected perceived indirectness. Both feedback receivers (Studies 1 and 3) and feedback providers (Study 2) perceived success and failure feedback in negation frames (non-losses, non-gains) as more indirect than in affirmative frames (gains, losses; Hypothesis 1). Success feedback in negation (vs. affirmative) frames was perceived as less positive whereas failure feedback in negation (vs. affirmative) frames was perceived as more positive. Hence, the difference in perceived valence between success and failure feedback was attenuated (Hypothesis 2). Results were consistent whether feedback frames were manipulated in individual feedback statements (Studies 1 and 2) or an integrated e-mail (Study 3). Further, feedback providers (e.g., full-time supervisors; Study 2) appeared to recognize these dynamics and were more likely to use negation frames when they intended to be

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8. A Feedback  $\times$  Frame interaction (instead of the Feedback  $\times$  Indirectness interaction) produced the same pattern of results. For the sake of consistency with earlier studies, we reported the model using the Feedback  $\times$  Indirectness interaction.

9. Supplementary analyses switching the order of the variables in the mediation model of perceived support and of behavioral intentions rendered both insignificant indirect effects and moderated mediation indices, providing additional support for these current and specific directions of the indirect effects.

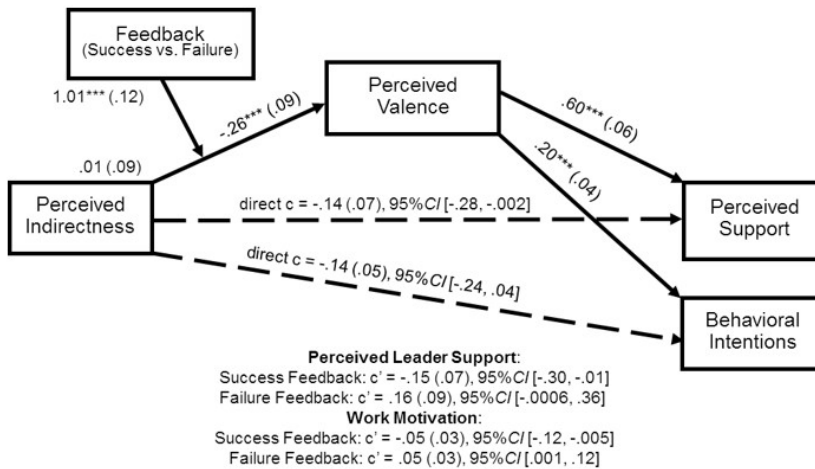


FIGURE 4. The indirect effect of perceived indirectness of the feedback e-mail on perceived support and behavioral intentions via perceived valence, moderated by feedback condition (Study 3). Estimates are unstandardized coefficients with standard errors reported in parentheses (see all estimates in Table S4). Feedback conditions: Success = 1 and Failure = -1. Perceived indirectness was mean-centered in the analysis. \*\*\* $p \leq .001$ .

indirect in giving feedback. Taken together, these studies consistently demonstrate the effect of message framing on the perception of indirectness in feedback communications.

## THE DYNAMICS OF INDIRECTNESS IN PROVIDING EFFECTIVE FEEDBACK

The current work integrates the communication and message framing literatures to provide new insights into the role of indirectness in feedback communication. Although prior work has examined the role of other factors—timeliness, specificity, task/person focus—on feedback, this is the first empirical work to examine factors that contribute to perceived indirectness. As Grice's (1968, 1969) theories suggested, to the extent that a speaker meaning is distant from the literal meaning, communication becomes more indirect. The present studies reveal one form of this distance in the context of feedback provision: framing a success as a non-loss or a failure as a non-gain.

Moreover, the current studies suggest that feedback indirectness may play an interesting role in feedback provision and receipt, affecting the clarity of the feedback valence signal and interpersonal dynamics between feedback provider and receiver. This is important as feedback communication is a core component of many social roles. For instance, a major task of a manager is to give feedback effectively, and ineffective feedback can lead to many severe organizational downfalls (e.g., lower motivation and resentment; Baron, 1988). Ineffective feedback provided by teachers can lower students' learning and academic achievement

(Rattan, Good, & Dweck, 2012). Our findings add to the growing feedback literature by highlighting the dynamic role of indirectness in feedback effectiveness.

In the case of providing success feedback, the story of indirectness creates no great challenges or surprises: being direct is related to more accurate detection of the feedback signal, perceptions of greater support from the feedback provider, and strengthened behavioral intentions for future work. Interestingly, however, people may be more accustomed both to receiving success feedback and to directness when they do, so the same dose of directness in success feedback may not feel as strong as the same dose of directness in negative feedback (see Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001). This might explain why a pattern emerged that people perceived success (vs. failure) feedback as more indirect overall (see Figure 1). In the case of failure feedback, however, the current studies suggest that feedback providers might face a dilemma in how direct to be.

Feedback receivers perceived indirect failure feedback—in negation frames—as more positive than direct failure feedback—in affirmative frames. On the one hand, this appears to have some benefits, as revealed in Study 3. Feedback recipients felt more supported when they received indirect failure feedback, one source of goal (and certainly work) engagement (Amabile et al., 2004) and they reported stronger behavioral intentions for future work. On the other hand, feedback providers may be less able to pick up the valence signal when failure feedback is indirect. Indeed, receivers did not differentiate the valence of success versus failure feedback when it was in negation frames in the form of an e-mail (Study 3), even though objective performance anchors were explicitly provided in the scenario. Thus, the attempt to “soften the blow” by giving failure feedback indirectly may make it harder for receivers to recognize that something has gone wrong and/or needs to be addressed.

A critical function of feedback is to give people information about goal discrepancies (Locke & Latham, 1990a). Realizing that one’s performance is discrepant from the desired state often leads to greater goal engagement in order to reduce the discrepancy (Carver, 2003; Carver & Scheier, 1982). Thus, although directness in failure feedback may make an individual feel worse at the moment, it may also make the discrepancy toward the goal more salient, triggering increased motivation to adjust future behavior. In Study 3, we assessed behavioral intentions to work harder in general, rather than assessing behavioral intentions to fix problematic behaviors/past mistakes. It is possible that indirect negative feedback makes it less likely for individuals to take these corrective steps. Thus, we believe it will be important for future work to consider how indirectness of failure feedback affects more distal motivation and behavior, given likely tensions between directness and indirectness in negative feedback.

## EXPLORATION OF POTENTIAL MECHANISMS AND MODERATORS

Although we began to explore why feedback providers might deliver feedback in affirmative versus negation frames in Study 2, we recognize that there is much

more to understand about the potential mechanisms of this effect. Feedback providers indicated that to the extent they were trying to be indirect in feedback provision, they were more likely to use negation (non-gain) frames for failure feedback. While this is consistent with past work suggesting that indirectness often serves the goal of being polite (Brown & Levinson, 1987; Goffman, 1967), there may be additional motives at play in the context of feedback provision. For example, indirect failure feedback might be perceived not only as being more positive for receivers, but also as creating a more comfortable (and face-saving) interpersonal exchange for the feedback provider. Thus, feedback providers might have both receiver-relevant and self-relevant motives for delivering feedback indirectly.

Similarly, it will also be interesting to explore if the effects of indirect feedback are the same for everyone. For example, people vary in their chronic levels of communication indirectness: they can be more or less indirect in their production and/or interpretation of communication (Holtgraves, 1997a). People who are chronically more indirect in speech production may be more likely to use negation frames when communicating feedback.

There may also be self-regulatory factors that influence what is experienced as motivating, such as described in regulatory focus theory (Higgins, 1997). Regulatory focus differentiates between two critical self-regulatory systems—promotion and prevention—that regulate different survival needs. In a promotion state, individuals are concerned with nurturance and advancement, are particularly sensitive to the difference between gains and non-gains. In contrast, in a prevention state, individuals are concerned with safety and responsibilities, are particularly sensitive to the difference between non-losses and losses. Past work has shown that gain frames are more motivating for promotion-focused individuals whereas loss-frames are more motivating for prevention-focused individuals (e.g., Kung, Kim, Yang, & Cheng, 2016). Together this suggests that regulatory focus might be an important moderating factor that drives both how feedback providers frame feedback and how feedback receivers are motivated (or not) by specific feedback frames.

## LIMITATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

Before we conclude, we draw attention to several limitations of the current work. All studies in the current work employed hypothetical scenarios. Despite many benefits of using such an experimental design, this approach may have limited mundane realism. Results may not fully reflect the psychological experience when people receive real performance feedback or when people's performance outcome has high stakes (e.g., affecting actual profits). Future research should aim to test the hypotheses in real-world performance situations, such as performance appraisal in companies and academic evaluation at schools, to increase the external validity of the research.



Additionally, building on the message framing literature, we began our work with a focus on variations in gain/loss framing as a critical antecedent of perceived indirectness. Yet, other antecedents are also essential and future research should explore alternative means by which indirectness can be created. For example, a separation between speaker and literal meaning may also be created by a discrepancy between verbal utterances and nonverbal behaviors, such as facial expressions, emotional tones, and social distance (LaPlante & Ambady, 2002, 2003). For instance, if your colleague says, "I am thrilled about working on this task" while expressing no positive affect, it is unlikely that this is your colleague's favorite job. Future research will benefit from exploring the variety of means people use to create indirectness in communication and their implications.

Last, our study samples were all recruited in North America, and we do not have direct evidence to show whether the results can generalize across national cultures. Cultural influences are critical in communication. For example, cultures can vary in the degree to which communication tends to be direct versus indirect (Hall, 1976). Hall differentiated between high-context cultures (e.g., Russia, China) that use more situational and nonverbal cues to communicate meaning versus low-context cultures (e.g., Canada, Germany). These cultural norms may influence both the antecedents and consequences of indirect feedback (Meyer, 2014), as well as influence beliefs about what is motivating. Therefore, future research should increase the diversity of national cultures in their sample and continue to explore these intriguing questions.

## CONCLUSION

Indirectness is important, but underexplored, in feedback provision. The present studies showed that subtle variations in gain/loss framing that produce negation versus affirmative frames influence the extent to which success and failure are perceived as more or less direct. Particularly in the case of failure, the implications of negation frames are complex, affecting detection of the valence signal and motivation in divergent ways. We believe that further explorations of the role of message framing and indirectness in feedback communications will ultimately lead to a deeper understanding of when and why social interactions go well or awry.

APPENDIX A. Feedback Statements in Negation and Affirmative Frames

Frame	Feedback	
	Success	Failure
<b>Affirmative</b>	In the part for which you were responsible, we have achieved the ideal gain. <sup>1, 2, 5</sup>	In the part for which you were responsible, we lost money. <sup>1, 2, 5</sup>
	Your performance in the project was strong. <sup>1, 2, 5</sup>	Your performance in the project was poor. <sup>1, 2, 5</sup>
	You did very well in the task. <sup>1, 2, 5</sup>	You did quite badly in the task. <sup>1, 2, 5</sup>
	Our team achieved the ideal amount of profits because of your outstanding work. <sup>1, 2, 5</sup>	We lost money because of your mistakes. <sup>1, 2, 5</sup>
	Because of your performance, you and your team have gained 3 extra paid holidays bonus. <sup>1</sup>	Because of your performance, you and your team lost 2 paid holidays bonus. <sup>1</sup>
	Due to your performance, you have gained \$200 extra toward your project completion bonus. <sup>1</sup>	You lost the \$200 project completion bonus due to your mistake. <sup>1</sup>
	The company made \$12,000 as profit, out of which \$2,000 was extra investment we gained because of your performance. <sup>1</sup>	The company had a chance to gain \$10,000 as profit. However, owing to your performance, we achieved \$8000, losing \$2,000 in profit. <sup>1</sup>
	In the part for which you were responsible, we did not suffer from any losses. <sup>1, 2, 5</sup>	In the part for which you were responsible, we didn't make gains. <sup>1, 2, 5</sup>
	Your performance in the project was not bad. <sup>1, 2, 5</sup>	Your performance in the project was not strong. <sup>1, 2, 5</sup>
	You did not fail in the task. <sup>1, 2, 5</sup>	You could have done better in the task. <sup>1, 2, 5</sup>
<b>Negation</b>	Our team would have lost some money but for your outstanding work. <sup>1, 2, 5</sup>	We could have gotten more profits if it were not for your mistakes. <sup>1, 2, 5</sup>
	Because of your performance, you and your team did not lose the 3 extra paid holidays bonus. <sup>1</sup>	Because of your performance, you and your team did not gain the 2 paid holidays bonus. <sup>1</sup>
	Due to your performance, you did not lose the \$200 extra toward your project completion bonus. <sup>1</sup>	You would have gained the \$200 project completion bonus, if you did not make the mistake. <sup>1</sup>
	The company made \$12,000 as profit, out of which \$2,000 was extra investment we would have lost if not for your performance. <sup>1</sup>	The company had a chance to gain \$10,000 as profit. However, owing to your performance, we achieved \$8000, missing out on gaining \$2000 in profit. <sup>1</sup>

Note. <sup>1</sup>Included in Study 1; <sup>2</sup>Included in Study 2; <sup>5</sup>Included in the Supplementary Study.

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## SUPPLEMENTAL MATERIALS

### CONTENTS

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## A SUPPLEMENTARY STUDY: REPLICATING STUDY 2 WITH A SAMPLE OF UNDERGRADUATES

### METHOD

*Participants, Design, and Power.* Participants completed an online study about communication style and personality in a 2 (Feedback: Success vs. Failure; between-subject)  $\times$  2 (Frame: Negation vs. Affirmative; within-subject) mixed design. We aimed to recruit 200 participants in total over an academic term at a large Canadian university for psychology course credit. This sample size yields 99% power to detect a significant interaction between feedback valence and frame with a medium effect size (Faul et al., 2009). Two hundred and one undergraduates participated (157 female, 44 male;  $M_{age} = 20.1$ ,  $SD_{age} = 3.5$ ; 44% White, 30% East Asian, 12% South Asian, 5% Southeast Asian, and 10% other; 52% have work experience). Four participants did not complete the survey and were not included in the analysis, resulting in 196 participants in the sample. Participants were randomly assigned to one of two feedback conditions. Afterward, they read specific feedback sentences that varied in negation and affirmative frames and responded to questions related to each feedback sentence. Last, participants also completed a battery of other demographic and individual difference questions.

*Giving Feedback.* Participants read a gender-matched scenario in which their subordinate in the team performed particularly well (success) or poorly (failure; adapted from Study 2; see full Feedback Condition Scenarios in Supplemental Materials).

*Feedback Framing Manipulation.* After reading the scenario, all participants were told that they would be giving feedback about Jesse's performance in a performance review meeting. They rated feedback sentences one at a time and made several ratings about each. Each participant rated 8 sentences in random order: 4 negation frames and 4 affirmative frames (same as Study 2). Participants were asked the likelihood they would actually say each sentence to Jesse from 1 (Very Unlikely) to 7 (Very Likely), and to what extent, if they were to say each sentence, they would be trying to be direct on a scale from 1 (Very Direct)

**TABLE S1. Descriptives, Tests of Simple Effects, and Comparisons Across Dependent Variables for the Supplementary Study**

		Means (SD)		<i>df</i>	<i>F</i>	<i>p</i>	$\eta_p^2$	95% CI <sub> x1-x2 </sub>
Supplementary Study								
		Negation	Affirmative					
Indirectness	Success	3.23 (1.15) <sup>a</sup>	2.19 (.98) <sup>c</sup>	89	99.01	<.001	.53	.83, 1.25
	Failure	2.66 (1.19) <sup>b</sup>	1.86 (1.07) <sup>d</sup>	83	83.99	<.001	.50	.63, .97
Valence	Success	4.37 (.93) <sup>b</sup>	6.06 (.64) <sup>a</sup>	89	335.16	<.001	.79	1.50, 1.87
	Failure	2.77 (.88) <sup>c</sup>	2.00 (.88) <sup>d</sup>	83	132.99	<.001	.62	.64, .90
Motivation	Success	4.23 (.88) <sup>b</sup>	5.89 (.76) <sup>a</sup>	89	311.65	<.001	.78	1.47, 1.85
	Failure	3.48 (1.17) <sup>c</sup>	2.75 (1.36) <sup>d</sup>	83	121.03	<.001	.59	.57, .88

Note. Within each perception variable, means that share the same letter superscript are not statistically different from each other ( $p > .05$ ).

to 7 (Very Indirect) and trying to be positive on a scale from 1 (Very Negative) to 7 (Very Positive). For each of these variables, the mean score in each feedback frame served as the dependent measure in the analysis (Indirectness:  $\alpha$  mean = .59; Perceived valence:  $\alpha$  mean = .65; Likelihood to say:  $\alpha$  mean = .65).

## RESULTS AND DISCUSSION

We used the same analytic strategies as in Study 2 and presented the descriptives and tests of simple effects in Table S1.

*Intended Indirectness (H1).* We hypothesized that feedback sentences in negation frames would be perceived as more indirect than affirmative frames. A dependent t-test was conducted to test the hypothesis. As predicted, participants viewed negation frames as reflecting a greater intention to be indirect ( $M = 3.06$ ,  $SD = 1.26$ ) than affirmative frames ( $M = 2.30$ ,  $SD = 1.23$ ),  $t(195) = 9.99$ ,  $p < .001$ ,  $\eta_p^2 = .33$  (see Figure S1). This finding replicated Study 2 that feedback providers recognized negation (vs. affirmative) frames as more indirect.

*Intended Valence (H2).* Next, we tested whether intended valence was a function of an interaction between feedback condition and frame. Ratings of the intended valence of the sentences were analyzed using a 2 (Feedback: Success vs. Failure; between-subject)  $\times$  2 (Frame: Negation vs. Affirmative; within-subject) repeated-measure ANOVA.

There was a significant main effect of Feedback,  $F(1, 194) = 575.20$ ,  $p < .001$ ,  $\eta_p^2 = .75$  ( $M_{\text{success}} = 4.85$ ,  $SD = .77$ ;  $M_{\text{failure}} = 2.58$ ,  $SD = .82$ ), and a significant main effect of Frame,  $F(1, 194) = 101.33$ ,  $p < .001$ ,  $\eta_p^2 = .34$  ( $M_{\text{negation}} = 3.39$ ,  $SD = .85$ ;  $M_{\text{affirmative}} = 4.04$ ,  $SD = .75$ ). Importantly, as predicted in H2, the main effects were qualified by a significant Feedback  $\times$  Frame interaction,  $F(1, 194) = 632.34$ ,  $p < .001$ ,  $\eta_p^2 = .77$ . Success feedback in negation (vs. affirmative) frames was intended to be less positive, whereas failure feedback in negation (vs. affirmative) frames was intended to be more positive (H2a; see Table S1). Moreover, the difference in intended levels of valence—between success and failure feedback—was

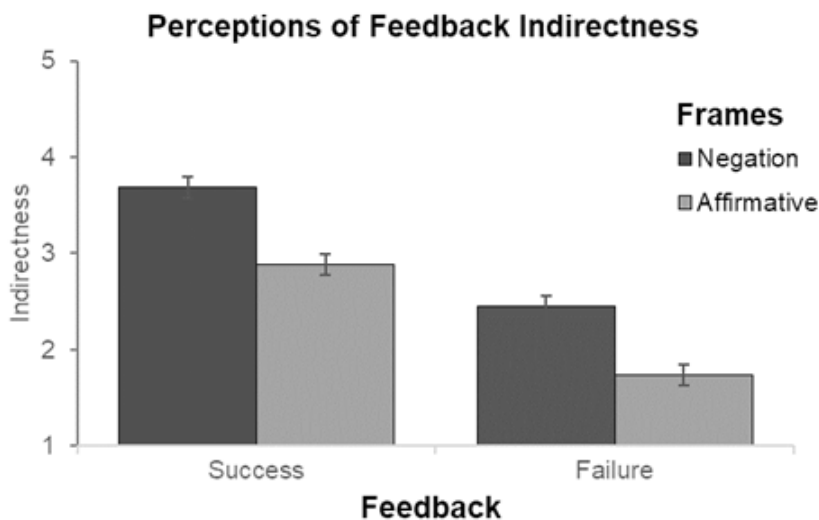


FIGURE S1. Perceived Indirectness of Feedback in Negation and Affirmative Frames across Success and Failure Feedback Conditions in the Supplementary Study. Error bars are means  $\pm$  1 SE.

attenuated in negation frames,  $B = .65$ ,  $SE = .12$ ,  $t(194) = 5.32$ ,  $p < .001$ ,  $\eta_p^2 = .13$ , 95%  $CI_{[-.41, .89]}$ , relative to affirmative frames,  $B = 3.89$ ,  $SE = .11$ ,  $t(194) = 36.48$ ,  $p < .001$ ,  $\eta_p^2 = .87$ , 95%  $CI_{[-3.68, 4.10]}$  (H2b).

*Moderated Mediation (H3).* As in Study 2, we hypothesized that, in success feedback, affirmative frames reflect a greater intention to be direct and positive; in failure feedback, negation frames reflect a greater intention to be indirect and positive (i.e., moderation). Intended positivity of frames, in turn, will prompt a greater likelihood of using the frame (i.e., mediation). The same moderated mediation analyses were conducted with 10,000 percentile bootstrapped samples described by Preacher, Rucker, and Hayes (2007; Model 8). This analysis included a regression test for the interaction effect between intended indirectness and feedback condition on intended valence, along with a test for the mediating effect of intended valence on the likelihood to use the frame, controlling for the grand mean-centered mean scores (across negation and affirmative frames) of indirectness.

As illustrated in Figure S2, the intention to be indirect interacted with feedback condition in predicting feedback providers' perception of the valence of the feedback,  $p = .002$ , 95%  $CI [-.28, -.06]$ . Perceived valence subsequently predicted the likelihood of using the frame in feedback,  $p < .001$ , 95%  $CI [.56, .82]$ . The indirect effect of indirectness on likelihood to use the frame was negative for successful feedback, but positive for failure feedback. In other words, to make feedback more positive, feedback providers intended to deliver failure (vs. success) feedback using frames that were more (vs. less) indirect. A test of moderated mediation revealed that these two effects differed from each other,  $B = -.24$ ,  $SE = .07$ , 95%  $CI [-.39, -.10]$ , providing evidence for the asymmetrical indirect effects of indirectness on the use of frames. Switching the order of the variables in the mediation model rendered both



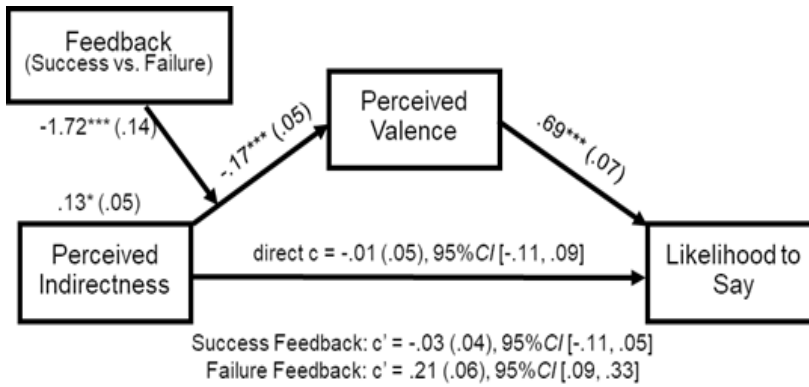


FIGURE S2. The Indirect Effect of Perceived Indirectness on the Likelihood to Use the Frame via Perceived Valence, Moderated by Feedback Condition (Supplementary Study). Estimates are unstandardized coefficients with standard errors reported in parentheses (see all estimates in Table S5). Feedback conditions: Success = 1 and Failure = -1. Perceived indirectness was mean-centered in the analysis.  $***p \leq .001$ ,  $*p \leq .05$ .

indirect effects and moderated mediation indices nonsignificant, providing additional support for predicted direction of the indirect effects.

This supplementary study, with a sample of participants who have less professional feedback delivery experience, replicated the pattern of results found in full-time supervisors in Study 2. Feedback providers perceived negation (vs. affirmative) frames as more indirect. They also reported a greater likelihood of using negation (vs. affirmative) frames for failure (vs. success) feedback to the extent that they perceived these as more positive.

## SUPPLEMENTARY ANALYSES ON PERCEPTIONS OF HOW MOTIVATING THE FEEDBACK WAS

In addition to valence (reported in the main text), in all studies we included one additional exploratory item to measure participants' perception of how motivating the feedback was, on a scale from 1 (Very Demotivating) to 7 (Very Motivating). Its pattern of results is consistent with that of perceived valence. Here, as supplementary analyses, we report in details the results. For Studies 1 and 2, and the Supplementary Study, perceptions of sentences were analyzed using a 2 (Feedback: Success vs. Failure; between-subject)  $\times$  2 (Frame: Negation vs. Affirmative; within-subject) repeated-measure ANOVA. See Table S2 for all descriptives and tests of simple effects.

*Study 1.* There were significant main effects of Feedback and Frame on motivation. People perceived success feedback as more motivating than failure feedback,  $F(1, 197) = 375.01$ ,  $p < .001$ ,  $\eta_p^2 = .66$  ( $M_{\text{success}} = 4.93$ ,  $SD = .78$ ;  $M_{\text{failure}} = 2.77$ ,  $SD = .78$ ). In addition, participants perceived feedback sentences in affirmative frames as more motivating than negation frames,  $F(1, 197) = 104.08$ ,  $p < .001$ ,  $\eta_p^2 = .35$  ( $M_{\text{negation}} = 3.57$ ,  $SD = .90$ ;  $M_{\text{loss-framed}} = 3.57$ ,  $SD = .90$ ). The Feedback  $\times$  Frame interaction was significant,  $F(1, 197) = 423.01$ ,  $p < .001$ ,  $\eta_p^2 = .68$ . For success feedback, participants perceived affirmative frames more motivating than negation frames; for failure feedback, they perceived negation frames to be more motivating than affirmative frames, but the effect was smaller.

**TABLE S2. Descriptives, Tests of Simple Effects, and Comparisons of Perceptions of Motivation for Studies 1 to 3**

		Means (SD)		df	F	p	$\eta_p^2$	95% CI $ \frac{x_1-x_2}{x_1+x_2} $
		Negation	Affirmative					
Study 1	Success	4.23 (.88) <sup>b</sup>	5.89 (.76) <sup>a</sup>	98	332.74	<.001	.77	1.44, 1.79
	Failure	3.48 (1.17) <sup>c</sup>	2.75 (1.36) <sup>d</sup>	99	85.50	<.001	.46	.42, .65
Study 2	Success	3.78 (1.07) <sup>b</sup>	5.81 (.83) <sup>a</sup>	102	305.35	<.001	.75	1.80, 2.26
	Failure	3.56 (1.01) <sup>b</sup>	2.71 (1.17) <sup>c</sup>	99	91.69	<.001	.48	.67, 1.02
Study 3	Success	3.59 (1.44) <sup>b</sup>	5.72 (1.31) <sup>a</sup>	92	56.02	<.001	.38	1.56, 2.69
	Failure	3.68 (1.91) <sup>b</sup>	3.17 (1.64) <sup>b</sup>	91	1.76	.188	.02	-.25, 1.23

Note. Within each perception variable, means that share the same letter superscript are not statistically different from each other ( $p > .05$ ). Studies 1 and 2 have a mixed design of Frame (within-subject)  $\times$  Feedback (between-subject).

Study 3 has a  $2 \times 2$  between-subject design. 95% CI  $|\frac{x_1-x_2}{x_1+x_2}|$  represents the 95% confidence interval of the absolute difference in means.

*Study 2.* There were significant main effects of Feedback,  $F(1, 205) = 173.21, p < .001, \eta_p^2 = .46$  ( $M_{\text{success}} = 4.79, SD = 1.06; M_{\text{failure}} = 3.12, SD = 1.06$ ), and Frame on intention to be motivating,  $F(1, 205) = 68.95, p < .001, \eta_p^2 = .25$  ( $M_{\text{negation}} = 4.70, SD = 1.45; M_{\text{affirmative}} = 3.25, SD = 1.24$ ). The Feedback  $\times$  Frame interaction was significant,  $F(1, 205) = 358.79, p < .001, \eta_p^2 = .64$ . For success feedback, participants found affirmative frames reflecting a greater intention to be motivating than loss frames; for failure feedback, they perceived negation frames to be reflecting a greater intention to be motivating than loss frames, but the effect was smaller.

*Study 3.* This study has a between-subject design; therefore, motivation was analyzed using a 2 (Feedback: Positive vs. Negative)  $\times$  2 (Frame: Negation vs. Affirmative) between-subject ANOVA. See Table S2 for descriptives and tests of simple effects. There were significant main effects of Feedback,  $F(1, 183) = 27.53, p < .001, \eta_p^2 = .13$  ( $M_{\text{success}} = 4.66, SD = 1.74; M_{\text{failure}} = 3.45, SD = 1.80$ ) and Frame on how motivating the e-mail was perceived to be,  $F(1, 183) = 12.21, p = .001, \eta_p^2 = .06$  ( $M_{\text{negation}} = 3.64, SD = 1.60; M_{\text{affirmative}} = 4.46, SD = 1.60$ ). The Feedback  $\times$  Frame interaction was significant,  $F(1, 183) = 31.45, p = .001, \eta_p^2 = .15$ . For success feedback, the e-mail in affirmative frames was perceived as more motivating than negation frames; for failure feedback, the e-mails in negation and affirmative frames did not differ,  $F(1, 91) = 1.76, p = .188, \eta_p^2 = .02$ , but the difference was trending in the predicted direction that the e-mail in negation frames was more perceived as more motivating.

*Supplementary Study.* There were significant main effects of Feedback,  $F(1, 194) = 332.15, p < .001, \eta_p^2 = .63$  ( $M_{\text{success}} = 4.69, SD = .77; M_{\text{failure}} = 2.80, SD = .94$ ), and Frame on intention to be motivating,  $F(1, 194) = 88.84, p < .001, \eta_p^2 = .31$  ( $M_{\text{negation}} = 3.43, SD = .90; M_{\text{affirmative}} = 4.02, SD = 1.86$ ). These main effects were qualified by the Feedback  $\times$  Frame interaction,  $F(1, 194) = 461.39, p < .001, \eta_p^2 = .70$ . For success feedback, participants found affirmative frames reflecting a greater intention to be motivating than negation frames; for failure feedback, they perceived negation frames to be reflecting a greater intention to be motivating than affirmative frames, but the effect was smaller.

**TABLE S3. Moderated Mediation Analysis: The Effect of Perceived Indirectness of Feedback in Negation vs. Affirmative Frames on the Likelihood to Use the Frame via Perceived Valence, Moderated by Feedback Condition (Study 2)**

	Perceived Valence (M)		Likelihood to Say (Y)	
	Coeff.	95% CI	Coeff.	95% CI
Constant	-.69*** (.09)	-.86, -.51	-.64*** (.09)	-.81, -.47
Indirectness (X)	.10 (.08)	-.05, .25	-.08 (.06)	-.21, .04
Perceived Valence (M)			.64*** (.06)	.53, .77
Feedback Condition (W)	-1.44*** (.12)	-1.68, -1.20	-.67*** (.13)	-.93, -.40
Mean Indirectness <sup>a</sup>	-.08 (.07)	-.22, .05	.03 (.06)	-.08, .15
Mean Valence <sup>a</sup>	.11 (.08)	-.05, .28	-.09 (.07)	-.23, .04
X × W	-.25*** (.08)	-.40, -.10	.03 (.07)	-.10, .16
	$R^2 = .70$		$R^2 = .83$	
	$F(5, 197) = 91.87, p < .001$		$F(6, 196) = 159.81, p < .001$	

Note. Coefficients are unstandardized estimates with standard errors reported in parentheses. \*\*\* $p \leq .001$ , \*\* $p \leq .01$ , and \* $p < .05$ . <sup>a</sup>Grand mean centered.

**TABLE S4. Moderated Mediation Analysis: The Effect of Perceived Indirectness of Feedback E-mails in Negation vs. Affirmative Frames on Perceived Support and Behavioral Intentions via Perceived Valence, Moderated by Feedback Condition (Study 3)**

	Perceived Valence (M)		Perceived Support (Y1)		Behavioral Intentions (Y2)	
	Coeff.	95% CI	Coeff.	95% CI	Coeff.	95% CI
Constant	3.70*** (.12)	3.45, 3.94	1.73*** (.24)	1.25, 2.21	4.25*** (.17)	3.91, 4.60
Indirectness (X)	.01 (.09)	-.16, .18	-.14* (.07)	-.28, -.002	-.14** (.06)	-.24, -.04
Perceived Valence (M)			.60*** (.06)	.48, .71	.20*** (.04)	.11, .28
Feedback Condition (W)	1.01*** (.12)	.76, 1.26	-.10 (.12)	-.33, .14	-.64*** (.08)	-.81, -.48
X × W	-.26*** (.09)	-.43, -.08	.16* (.07)	.02, .31	.08 (.05)	.03, .18
	$R^2 = .33$		$R^2 = .65$		$R^2 = .33$	
	$F(3, 182) = 29.24, p < .001$		$F(4, 181) = 31.21, p < .001$		$F(4, 181) = 22.65, p < .001$	

Note. Coefficients are unstandardized estimates with standard errors reported in parentheses. \*\*\* $p \leq .001$ , \*\* $p \leq .01$ , \* $p < .05$ .

**TABLE S5. Moderated Mediation Analysis: The Effect of Perceived Indirectness of Feedback Sentences in Negation vs. Affirmative Frames on Likelihood to Use the Frame via Perceived Valence, Moderated by Feedback Condition (Supplementary Study)**

	Perceived Valence (M)		Likelihood to Say (Y)	
	Coeff.	95% CI	Coeff.	95% CI
Constant	-.74*** (.07)	-.88, -.59	-.52*** (.08)	-.69, -.36
Indirectness (X)	.13* (.05)	.02, .23	-.01 (.05)	-.11, .09
Perceived Valence (M)			.69*** (.07)	.56, .82
Feedback Condition (W)	-1.72*** (.14)	-2.00, -1.45	.49*** (.17)	-.83, -.15
Mean Indirectness <sup>a</sup>	.06 (.07)	-.08, .21	.04 (.07)	-.09, .18
Mean Valence <sup>a</sup>	.16 (.10)	-.03, .35	-.20 (.09)	-.38, -.03
X × W	-.17*** (.05)	-.28, -.06	-.08 (.05)	-.18, .02
	$R^2 = .78$		$R^2 = .86$	
	$F(5, 190) = 17.67, p < .001$		$F(6, 189) = 196.08, p < .001$	

Note. Coefficients are unstandardized estimates with standard errors reported in parentheses. \*\*\* $p \leq .001$ , \*\* $p \leq .01$ , and \* $p < .05$ . <sup>a</sup>Grand mean centered.

## FEEDBACK CONDITION SCENARIOS

### FEEDBACK CONDITIONS FOR FEEDBACK RECEIVER (STUDY 1; GENDER-MATCHED TO PARTICIPANTS)

#### Success Condition

You just graduated from university and got a job working full-time at a mid-size local insurance company where you had worked previously as a co-op student. You work under a team leader, Jesse, who is supervising four junior employees, including yourself, on some investment projects. You and your subordinates work as a team, and earn bonuses based on the performance of your team as a whole. This means that everyone's compensation (including yours) depends on how well each person on the team does. Everyone on the team receives the same bonus.

Your team was assigned to work on a project and each member of your team was responsible for a separate task in order to complete the project.

You did particularly well in your assigned task because you put extra effort in the task. Due to your outstanding work, the overall quality of the project was greatly enhanced, causing unexpectedly high project returns for your team as well as the company (i.e., \$12,000 profit). Other team members are very excited about the upcoming projects.

Furthermore, this incident has drawn the attention of the department director. The director has asked Jesse, the team leader, to talk to you and give you feedback about your performance. In particular, Jesse made adjustments in your project compensations, and here is what you will get:

Vacation bonus: 5 paid holidays

Project completion bonus: \$400

Now, you are in a meeting with him about your work and how your team will move forward from here...

### **Failure Condition**

You just graduated from university and got a job working full-time at a mid-size local insurance company where you had worked previously as a co-op student. You work under a team leader, Jesse, who is supervising four junior employees, including yourself, on some investment projects. You and your subordinates work as a team, and earn bonuses based on the performance of your team as a whole. This means that everyone's compensation (including yours) depends on how well each person on the team does. Everyone on the team receives the same bonus.

Your team was assigned to work on a project and each member of your team was responsible for a separate task in order to complete the project.

However, you did particularly poorly on your assigned task because you did not put much effort in the task. Due to this inferior standard of work, the overall quality of the project was severely affected, causing unexpectedly lower project returns for your team as well as the company (i.e., \$8,000 profit only). Other team members are very worried about the upcoming projects.

Furthermore, this incident has drawn the attention of the department director. The director has asked the team leader to talk to you and give you feedback about your performance. In particular, Jesse made adjustments in your project compensations, and here is what you will get:

Vacation bonus: 0 paid holidays

Project completion bonus: \$0

Now, you are in a meeting with him about your work and how your team will move forward from here...

## **FEEDBACK CONDITIONS FOR CURRENT FULL-TIME SUPERVISORS (STUDY 2; GENDER-MATCHED TO PARTICIPANTS)**

### **Success Condition**

At work, you are a team leader supervising a project team. You and your subordinates work as a team, and earn bonuses based on the performance of your team as a whole. This means

that everyone's compensation (including yours) depends on how well each person on the team does. Everyone on the team receives the same bonus.

Your team was assigned to work on a project and each member of your team was responsible for a separate task in order to complete the project.

One member of your team, Jesse, did particularly well in his assigned task because he put extra effort in the task. Due to his work, the overall quality of the project was greatly enhanced, causing unexpectedly high project returns for your team as well as the company. Other team members are very excited about the upcoming projects.

Furthermore, this incident has drawn the attention of the department director. The director would like you to talk to Jesse to give him feedback about his performance.

### **Failure Condition**

At work, you are a team leader supervising a project team. You and your subordinates work as a team, and earn bonuses based on the performance of your team as a whole. This means that everyone's compensation (including yours) depends on how well each person on the team does. Everyone on the team receives the same bonus.

Your team was assigned to work on a project and each member of your team was responsible for a separate task in order to complete the project.

One member of your team, Jesse, did particularly poorly on her assigned task because she did not put much effort in the task. Due to her work, the overall quality of the project was severely affected, causing unexpectedly lower project returns for your team as well as the company. Other team members are very concerned about the upcoming projects.

Furthermore, this incident has drawn the attention of the department director. The director would like you to talk to Jesse to give her feedback about her performance....

## FEEDBACK CONDITIONS FOR FEEDBACK RECEIVER (STUDY 3; GENDER-MATCHED TO PARTICIPANTS)

### **Success Condition**

You just graduated from university and got a job working full-time at a midsize local insurance company where you had worked previously as a co-op student. You work under a team leader, Jesse, who is supervising four junior employees, including yourself, on some investment projects. You and your subordinates work as a team, and earn bonuses based on the performance of your team as a whole. This means that everyone's compensation (including yours) depends on how well each person on the team does. Everyone on the team receives the same bonus.

Your team was assigned to work on a project and each member of your team was responsible for a separate task in order to complete the project. You did particularly well in your assigned task because you put extra effort in the task. Due to your outstanding work, the overall quality of the project was greatly enhanced, causing unexpectedly high project returns for your team as well as the company. Other team members are very excited about the upcoming projects.

Furthermore, this incident has drawn the attention of the department director. The director has asked the team leader to talk to you and give you feedback about your performance. You are in a meeting with him about your work and how your team will move forward from here...

[Next page; Open-ended feedback writing]

Like most situations, there are a number of ways to think about what happened and how to provide feedback. For instance, Jesse's performance could be seen as helping the company avoid losses or as increasing company gains. You are going to talk to Jesse about his good work and tell him what you feel and what you want him to do...

Imagine that you encounter this situation at work and you need to give performance feedback to Jesse. Please express here what you would say to Jesse about his performance.

### **Failure Condition**

You just graduated from university and got a job working full-time at a midsize local insurance company where you had worked previously as a coop student. You work under a team leader, Jesse, who is supervising four junior employees, including yourself, on some investment projects. You and your subordinates work as a team, and earn bonuses based on the performance of your team as a whole. This means that everyone's compensation (including yours) depends on how well each person on the team does. Everyone on the team receives the same bonus.

Your team was assigned to work on a project and each member of your team was responsible for a separate task in order to complete the project. However, you did particularly poorly on your assigned task because you did not put much effort in the task. Due to this inferior standard of work, the overall quality of the project was severely affected, causing unexpectedly lower project returns for your team as well as the company. Other team members are very worried about the upcoming projects.

Furthermore, this incident has drawn the attention of the department director. The director has asked the team leader to talk to you and give you feedback about your performance. You are in a meeting with him about your work and how your team will move forward from here...

[Next page; Open-ended feedback writing]

Like most situations, there are a number of ways to think about what happened and how to provide feedback. For instance, Jesse's performance could be seen as helping the company avoid losses or as increasing company gains. You are going to talk to Jesse about her good work and tell her what you feel and what you want her to do...

Imagine that you encounter this situation at work and you need to give performance feedback to Jesse. Please express here what you would say to Jesse about her performance.

## FEEDBACK CONDITIONS FOR FEEDBACK PROVIDERS (SUPPLEMENTARY STUDY; GENDER-MATCHED TO PARTICIPANTS)

**Success Condition**

You just graduated from university and got a job working full-time at a midsize local insurance company where you had worked previously as a co-op student. Because of your previous experience, you are appointed as a team leader supervising four junior employees on some investment projects. You and your subordinates work as a team, and earn bonuses based on the performance of your team as a whole. This means that everyone's compensation (including yours) depends on how well each person on the team does. Everyone on the team receives the same bonus.

Your team was assigned to work on a project and each member of your team was responsible for a separate task in order to complete the project.

One member of your team, Jesse, did particularly well in his assigned task because he put extra effort in the task. Due to his outstanding work, the overall quality of the project was greatly enhanced, causing unexpectedly high project returns for your team as well as the company. Other team members are very excited about the upcoming projects.

Furthermore, this incident has drawn the attention of the department director. The director would like you to talk to Jesse to give him feedback about his performance. You are going to talk to Jesse about his good work and tell him what you feel and what you want him to do...

**Failure Condition**

You just graduated from the university and got a job working full-time at a midsize local insurance company where you had worked previously as a co-op student. Because of your previous experience, you are appointed as a team leader supervising four junior employees on some investment projects. You and your subordinates work as a team, and earn bonuses based on the performance of your team as a whole. This means that everyone's compensation (including yours) depends on how well each person on the team does. Everyone on the team receives the same bonus.

Your team was assigned to work on a project and each member of your team was responsible for a separate task in order to complete the project.

One member of your team, Jesse, did particularly poorly on her assigned task because she did not put much effort in the task. Due to her inferior standard of work, the overall quality of the project was severely affected, causing unexpectedly lower project returns for your team as well as the company. Other team members are very worried about the upcoming projects.

Furthermore, this incident has drawn the attention of the department director. The director would like you to talk to Jesse to give her feedback about her performance. You are going to talk to Jesse about her poor work and tell her what you feel and what you want her to do.



## ADDITIONAL EXPLORATORY FEEDBACK STATEMENTS (SUPPLEMENTARY STUDY)

### Goal Pursuit Strategies

Eager	Vigilant
In upcoming projects, eagerly aim to earn as much bonus as possible!	In upcoming projects, you should be careful to avoid losing any bonus!
Your work is important. I hope we can maximize the gains we get from each project.	Your work is important. I hope we can minimize our losses from each project.

### Regulatory Concerns

Growth	Safety
Your role here is to aim high and achieve all possible returns for the company.	Your role is to fulfill your duties to ensure the company's target returns.
Work hard, Jesse! I hope you can fulfill your dreams and aspirations in the company.	Work hard, Jesse! I hope you can fulfill your duties and responsibilities in the company.

*Note.* Different from gain/loss outcome focus framing (see Table 1), the above statements can be applied to both success and failure feedback conditions. For exploratory purposes, in the supplementary study we included two sentences framed in terms of regulatory concerns (growth vs. safety concerns) and two sentences framed in terms of goal pursuit strategies (eager vs. vigilant; see Cesario et al., 2013 for theories underlying a regulatory framework of message framing). Growth and eager frames showed similar yet weaker patterns of results compared to gain frames; similarly, safety and vigilant frames showed similar yet weaker patterns of results compared to loss frames. Including the additional sentences in an overall composite did not change the significance of predicted patterns. However, for the sake of conceptual clarity and consistency with the framework of negation and affirmative frames, the analyses reported did not include these additional sentences. For transparency in research design and analyses, the additional sentences are provided here, and we welcome readers' requests for any details of the additional analyses.

## FEEDBACK E-MAILS IN NEGATION AND AFFIRMATIVE FRAMES (STUDY 3)

### SUCCESS CONDITION

#### Negation Frame

☆ from [jessehb@corporate.org](mailto:jessehb@corporate.org) [hide details](#) 1/13/16 [Reply](#)

to [redacted]

date Wed, Jan 13, 2016 at 11:02 AM

subject **Performance Feedback**

Dear [redacted]

Regarding the project that you and the team just recently completed, you did not fail to meet expectations.

Our team would have lost some money if it was not for your effort. Especially in the part for which you were responsible, we did not suffer from any losses. Specifically, owing to your work, the company made \$12,000 as profit, out of which \$2,000 was extra investment we would have lost if you had performed poorly.

Your work is important and I need you to continue to minimize our losses from each project. For the upcoming projects, you should be careful to avoid losing any bonuses.

Jesse B.  
—  
Team Manager  
Investment Office  
Waterloo, Ontario, Canada

### Affirmative Frame

☆ from jessehb@corporate.org [hide details](#) 1/13/16 ↩ Reply ▾

to [redacted]

date Wed, Jan 13, 2016 at 11:02 AM

subject **Performance Feedback**

Dear [redacted]

Regarding the project that you and the team just recently completed, you successfully met expectations.

Our team achieved the ideal amount of profits because of your effort. Especially in the part for which you were responsible, we achieved the ideal gain. Specifically, owing to your work, the company made \$12,000 as profit, out of which \$2,000 was extra investment we gained because you performed well.

Your work is important and I need you to continue to maximize the gains we get from each project. For the upcoming projects, aim to earn as much bonus as possible!

Jesse B.  
--  
Team Manager  
Investment Office  
Waterloo, Ontario, Canada

### FAILURE CONDITION

### Negation Frame

☆ from jessehb@corporate.org [hide details](#) 1/13/16 ↩ Reply ▾

to [redacted]

date Wed, Jan 13, 2016 at 11:02 AM

subject **Performance Feedback**

Dear [redacted]

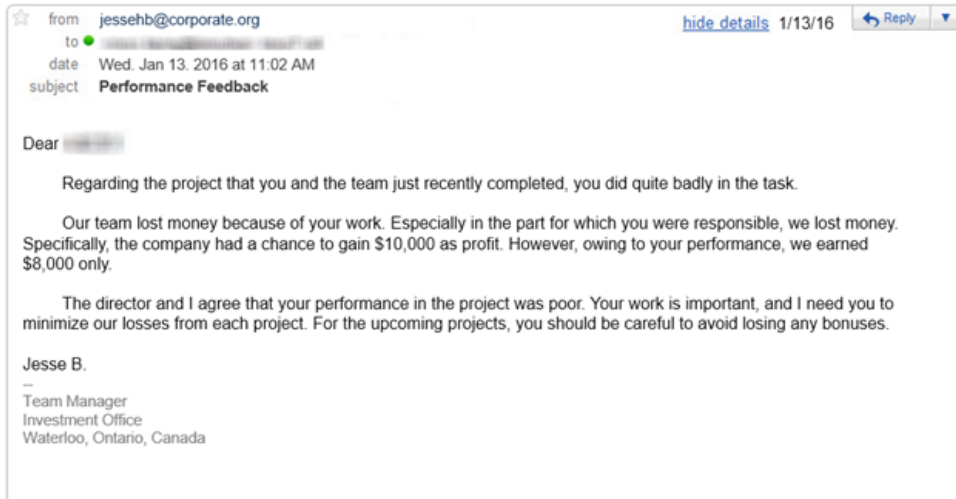
Regarding the project that you and the team just recently completed, you could have done better in the task.

Our team could have earned more profits if it were not for your work. Especially in the part for which you were responsible, we did not make gains. Specifically, the company had a chance to gain \$10,000 as profit. However, owing to your performance, we earned \$8,000 only.

The director and I agree that your performance in the project was not strong. Your work is important and I need you to maximize the gains we get from each project. For the upcoming projects, aim to earn as much bonus as possible!

Jesse B.  
--  
Team Manager  
Investment Office  
Waterloo, Ontario, Canada

## Affirmative Frame



## FULL SCALE ITEMS (STUDY 3)

### Behavioral Intention at Work Scale (Lockwood, Jordan, & Kunda, 2002)

After receiving the e-mail, please think about the situation and rate the degree you would engage in the following behaviors.

From 1 (*Not at All*) to 7 (*Extremely*)

1. I plan to put more time into my work
2. I plan to work harder for the coming project
3. I plan to lay back more (reverse coded)
4. I plan to put extra effort into my projects
5. I plan to procrastinate more (reverse coded)
6. I plan to work overtime more
7. I plan to stop engaging in social activities that interfere with my work
8. I plan to avoid wasting time in the office
9. I plan to be more organized
10. I plan to avoid missing work deadlines
11. I plan to be more casual about work (reverse coded)
12. I plan to focus more on my work

**Perceived Support at Work Scale** (Amabile, Schatzel, Moneta, & Kramer, 2004)

Please think about the situation in the scenario. To what extent does each item describe the work environment of your project?

From 1 (*Not at All*) to 7 (*Extremely*)

1. Encouragement and support from the team leader
2. Positive interactions with the team and the leader
3. Clarity of goals for the project communicated by the leader

## OTHER EXPLORATORY INDIVIDUAL DIFFERENCES MEASURES INCLUDED IN THE STUDIES

	Study 1	Study 2	Study 3	Supplementary Study
Big-Five Personality (Gosling, Rentfrow, Swann, & Swann, Jr., 2003)	X		X	X
Conversational Indirectness (Holtgraves, 1997)	X	X	X	X
English Ability	X	X	X	X
Goal Orientation (VandeWalle & Cummings, 1997)	X		X	X
Lay Person Theories (Chiu, Hong, & Dweck, 1997)	X	X	X	X
Regulatory Focus Questionnaire (Higgins et al., 2001)	X	X	X	
Regulatory Focus Strategy (Ouschan, Boldero, Kashima, Wakimoto, & Kashima, 2007)	X	X	X	X

Note. Scales included in the corresponding study are marked with an X.

## SUPPLEMENTAL REFERENCES

- Chiu, C., Hong, Y., & Dweck, C. S. (1997). Lay dispositionism and implicit theories of personality. *Journal of Personality and Social Psychology, 73*(1), 19–30.
- Gosling, S. D., Rentfrow, P. J., Swann, W. B., & Swann Jr., W. B. (2003). A very brief measure of the Big-Five personality domains. *Journal of Research in Personality, 37*(6), 504–528. [https://doi.org/10.1016/S0092-6566\(03\)00046-1](https://doi.org/10.1016/S0092-6566(03)00046-1)
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- VandeWalle, D., & Cummings, L. L. (1997). A test of the influence of goal orientation on the feedback-seeking process. *Journal of Applied Psychology, 82*(3), 390–400. <https://doi.org/10.1037/0021-9010.82.3.390>