

## Pitch imperfect: How investors respond to entrepreneur disclosure of personal flaws

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### ABSTRACT

When entrepreneurs pitch to investors, is it wise for them to disclose their flaws or should they rather not admit any weaknesses? Combining research in entrepreneurial finance with social comparison theory, we put forth a new conceptual model about when disclosing flaws elicits psychological closeness and results in investment. We distinguish between two types of flaws (*agency-excess* and *agency-deficit*) and consider the similarity between entrepreneurs and potential investors in these flaws. A field study and several experiments generally support our model. Disclosing agency-excess flaws does not generate closeness or elicit investment, even when investors possess the same flaw. Disclosing agency-deficit flaws can generate closeness and result in investment, but only among investors who possess the same flaw. Our research contributes to the entrepreneurial finance literature by showing nuanced effects concerning how flaw disclosures relate to investments; we also show that similarities between entrepreneurs and investors do not always pay off.

*Put your best foot forward. Accentuate the positive. Play to your strengths.* Whereas old adages emphasized that focusing on one's positive qualities brings success, in recent decades, popular dialogues and scholarship increasingly encourage people to bring their "whole selves" to work (Cha et al., 2019), including admitting their own negative qualities like personal weaknesses (Jiang et al., 2022). For example, in their award-winning article in *Harvard Business Review*, management scholars suggested that the most inspirational leaders at work "show us who they are—warts and all. This may mean admitting that they're irritable on Monday mornings, that they are somewhat disorganized, or even rather shy" (Goffee & Jones, 2000, p. 52).

Yet when entrepreneurs seek investment, would it be wise for them to follow such advice and candidly disclose their flaws to potential investors? Research in entrepreneurial finance suggests that investors would rule out investment opportunities with any mere mention of flaws (Maxwell et al., 2011). Indeed, investors across a variety of funding contexts seem focused on positive quality signals that reinforce an entrepreneur's high potential and expertise, such as when an entrepreneur has relevant experience or has received funding in the past (Courtney et al., 2017; Huang et al., 2022; Kleinert et al., 2020; Maxwell et al., 2011; Mollick, 2014; Steigenberger & Wilhelm, 2018). Thus, it seems that for entrepreneurs, any sign of potential weakness would undermine investment. To reconcile the tension between popular advice concerning

flaw disclosures and entrepreneurial scholarship, new theory and research is needed.

The purpose of this article is to develop and test a nuanced conceptual model concerning when flaw disclosure will have benefits or will backfire for entrepreneurs pitching their ideas to win funds in crowdfunding, defined as "a novel method for funding a variety of new ventures, allowing individual founders of for-profit, cultural, or social projects to request funding from many individuals" (Mollick, 2014, p. 1), which is an increasingly important financing method for entrepreneurs (Drover et al., 2017). Drawing on social comparison theory (Buunk & Gibbons, 2007; Festinger, 1954), we build new theory around investor reactions to entrepreneur disclosure of personal flaws in crowdfunding pitches. We suggest that entrepreneurs disclosing different types of personal flaws fosters different interpersonal inferences with distinct consequences on investors. Drawing on social comparison theory, we delineate two types of personal flaws that cultivate different social comparison inferences: personal flaws that relate to an individual having an excess of agency and trigger a sense of a discloser's superiority to others—we call these *agency-excess flaws*—and personal flaws that relate to an individual lacking agency and trigger a sense of a discloser's inferiority to others—we call these *agency-deficit flaws*. We suggest that to determine a disclosure's effect, it is key to consider the nature of a disclosure and the distinct social comparison inferences it cultivates (i.

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e., whether it is an agency-excess or agency-deficit flaw).

Especially in the context of entrepreneurs seeking financing for new ventures, a lay perspective might suggest that emphasizing one's agency via agency-excess flaws could be beneficial. For example, perhaps admitting a personal flaw like being arrogant, a control freak, or cynical could reinforce investor confidence by emphasizing a person's initiative and autonomy. Yet we take it from social comparison theory that instead, only the disclosure of agency-deficit flaws, such as admitting to being insecure, disorganized, or gullible, can generate the psychological closeness with others that leads flaw disclosure to elicit investment. Further integrating insights from social comparison theory, we propose that disclosing agency-deficit flaws most strongly elicits investment from investors who share the same agency-deficit flaw; in contrast, disclosing agency-excess flaws backfires and is incapable of generating the psychological closeness that can inspire investment, even among similar investors. In sum, then, we theorize that only the disclosure of agency-deficit flaws pays off—and still, only to select audiences. Our conceptual model is depicted in Fig. 1.

By integrating insights from social comparison theory, we build new theory in entrepreneurial finance that illuminates when disclosing personal flaws does, or does not, help entrepreneurs to win over investors as popular dialogues would suggest. Our theory contributes to the growing literature regarding how crowdfunding assess the qualities of entrepreneurs who seek funding (Mollick, 2014), which has focused on examining how entrepreneurs' narratives about their ideas as well as a mix of verbal and non-verbal cues generate quality signals that relate to funding success (He et al., 2024). For instance, drawing on signaling theory (Ahlers et al., 2015; Short et al., 2017), this literature has shown that potential investors attend to signals of positive entrepreneur personal qualities, like preparedness (Courtney et al., 2017; Mollick, 2014), psychological capital (Anglin et al., 2018), capability and commitment (Oo et al., 2019), and autonomy, competitive aggressiveness, and risk-taking (Moss et al., 2015). By focusing on how entrepreneur openness about their *negative* personal qualities affects investors, our findings add a new perspective to the crowdfunding literature (He et al., 2024; Pollack et al., 2021; Short et al., 2017). Our theory explains when and why an entrepreneur disclosing different negative personal qualities may have positive or negative effects on investors.

Our research also expands the literature on homophily effects in entrepreneurial finance. Drawing on the long-standing idea of homophily, the crowdfunding literature has demonstrated that entrepreneur similarity to investors encourages investment (Ertug et al., 2022; Greenberg & Mollick, 2017; He et al., 2024; Pollack et al., 2021). We add to this literature by showing that shared similarities that concern objectively negative qualities, rather than benign or positive ones, can sometimes have positive effects. Our findings also challenge research on homophily by showing that similarity is *not always* a positive in entrepreneurship. We illustrate that there are some qualities where similarity

does *not* breed connection (i.e., when investors possess the same agency-excess flaws that entrepreneurs disclose).

Our research also takes particular importance as the entrepreneurial finance literature increasingly incorporates concepts such as founder authenticity (Radoynovska & King, 2019). The broader literature on authenticity, or readily expressing both positive and negative aspects of one's true self rather than putting on a "false face" (Cha et al., 2019), suggests that openly disclosing one's personal flaws at work can cultivate positive interpersonal effects (Jiang et al., 2022; Wilhelmy et al., 2020). Yet, our theory and findings emphasize that in entrepreneurship, it is not simply that candidly sharing one's personal flaws is helpful—when soliciting investment, the type of flaw and the audience shape disclosure effects. We thus illustrate that any (dis)advantages of authenticity in entrepreneurship, like being open about one's flaws, are nuanced and context-bound. It is essential to consider the nature of flaws and the specific inferences their disclosure cultivates, as well as similarity between investors and entrepreneurs.

## 1. Personal flaws at work

We define personal flaws as *relatively stable, negative personal qualities*. Our definition builds on past research on personal flaws, which has defined flaws as individual-level defects (Ingardi et al., 2021) that are related to "persistent, fixed, and stable traits or abilities" (Boiger et al., 2013, p. 550). In our research, we focus on negative personal qualities that are core to a person's sense of who they are. This focus on more enduring individual qualities sets our research apart from studies that have focused on how entrepreneurs and investors regard professional mishaps, such as previous failures (Ingardi et al., 2021; Zunino et al., 2022). Compared to one-off failures, admissions of personal flaws may seem particularly risky; since these qualities are relatively stable, investors may perceive them as likely to have long-lasting and wide-ranging effects on an entrepreneur's work. Thus, personal flaws may be particularly consequential to admit.

Like the old adages cited at the beginning of this paper, the crowdfunding literature suggests focusing on the positive will bring the most success, exploring how signals of positive entrepreneur qualities shape investment (Anglin et al., 2018; Courtney et al., 2017; M. Lin et al., 2013; Mollick, 2014; Moss et al., 2015; Oo et al., 2019; Z. Wang et al., 2016). Indeed, some research shows the downsides of inadvertently exposing negative qualities: one study found that when crowdfunding project descriptions included spelling errors, their chance of success was 13 % lower than descriptions without errors (Mollick, 2014). But at the same time, some research suggests that negative information does not uniformly undermine investor perceptions: when potential crowdfunding investors inferred that entrepreneurs' previous ventures had failed due to bad luck rather than a lack of skill, investors did not penalize them for failure (Zunino et al., 2022), suggesting that negative

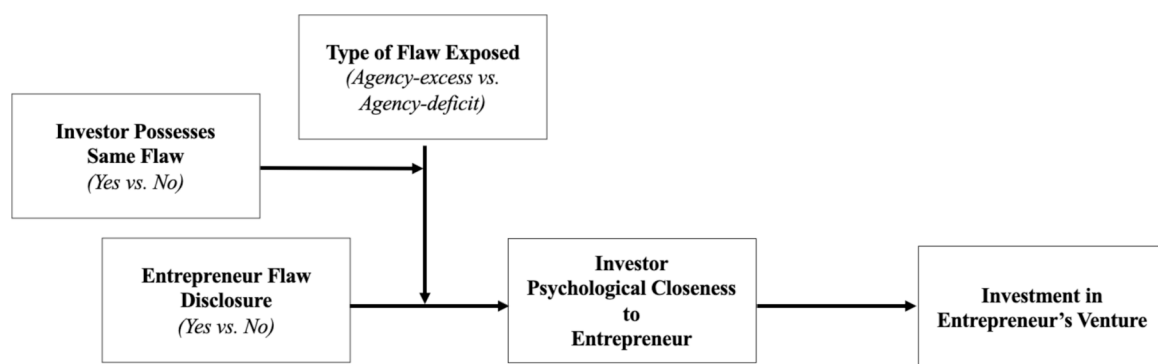


Fig. 1. A conceptual model of flaw disclosures and their influence on potential investors' psychological closeness with entrepreneurs and investment in their ventures.

information is evaluated in light of the underlying qualities it signals about the entrepreneur. Thus, new theory is needed to clarify when and why flaw disclosure has benefits or drawbacks in the entrepreneurship, where resources are on the line.

In building our theory, we propose that not all flaw disclosures are created equal. Rather, based on social comparison theory, we theorize that many common personal flaws can be distinguished into two categories. Social comparison theory has long highlighted that *agentic concerns* (or the motivation to enhance one's own attributes, status, or power, Locke, 2020) are core to social comparisons. In these comparisons, people focus on how other people's agency compares to their own level. Taking this one step further, we suggest that people are sensitive to attributes in others which indicate that they generally have problematically *more* or problematically *less* agency than other people—and see these attributes as personal flaws (i.e., if “flawless” is a reference point, people become flawed when they possess a level of agency that is higher than desirable, or a level of agency that is lower than desirable).

For example, common negative personality traits such as being arrogant, controlling, or being skeptical indicate that a person is excessively agentic, focused on themselves and their status, their opinions, and their own judgment while disregarding those of others. In contrast, other common negative personality traits, such as being insecure, disorganized, or being gullible, indicate that a person lacks agency, making them less autonomous and independent and rather vulnerable to the whims of others. Offering empirical support for this proposition, individuals across the globe rate characteristics such as being insecure, chaotic, and gullible as related to a low level of agency and characteristics such as being conceited, obstinate, and dogmatic as related to a high level of agency (Abele et al., 2008). Thus, we pinpoint agency as a quality whose excess and deficit should be interpreted by people as a flaw when they detect it in others.

We note that this taxonomy is not intended to be fully exhaustive, and that many character flaws may not be related to agency. We suggest only that numerous common flaws may signal relevance to agentic behavior, some in terms of a deficit of agency, and others in terms of a surplus of agency. Thus, we define *agency-excess flaws* as personal flaws that indicate that a person has excessive agency, and *agency-deficit flaws* as personal flaws that indicate that a person lacks agency.

Our research concerns how flaw disclosures affect investors, thus it involves two parties: a *discloser* (an entrepreneur) who expresses a reflection about the self that involves a personal flaw and the *interaction partner* (an investor) that takes note of the discloser's remark concerning their personal flaw. The true intentions that underlie an entrepreneur's motivation to state that they have a personal flaw are irrelevant to our theorizing. For instance, an entrepreneur may reveal a flaw because they are motivated to present themselves honestly to investors and thus want to convey a characteristic they view as truly negative, or an entrepreneur may reveal a flaw because they are trying to impress investors and want to convey a characteristic they do not truly believe is negative (akin to the classic example of sharing a “personal flaw” that could be interpreted as positive, such as saying “I work too hard” or “I care too much”, or as is the case with humblebragging (Sezer et al., 2018), which involves conveying positive information under the guise of a complaint). Our theorizing captures how investors (i.e., interaction partners) respond to an entrepreneur's (i.e., the discloser's) disclosure. Specifically, we focus on how a disclosure triggers inferences from the investors' perspective and on how those inferences may have positive or negative effects on investors' responses.

We propose that entrepreneurs disclosing agency-deficit flaws or agency-excess flaws will cultivate two distinct social comparison inferences in potential investors' eyes. First, we propose that by virtue of imbuing an entrepreneur with less agency, disclosing agency-deficit flaws makes entrepreneurs appear to investors like they view themselves as inferior to others. As we have suggested above, agency-deficit flaws like insecurity, disorganization, and gullibility involve issues with self-governing and dependence on others; this deferral to others over the

self encapsulates the inferiority relative to others embodied in such flaws. Second, and in contrast, we propose that by virtue of imbuing an entrepreneur with greater agency, disclosing agency-excess flaws makes entrepreneurs appear to investors like they view themselves as superior to others. As we have suggested above, agency-excess flaws like arrogance, overbearingness, and cynicism involve a focus on the self and a disregard for others; this disregard for others in favor of the self encapsulates the superiority relative to others embodied in such flaws. Our reasoning is rooted in social comparison theory, which has conceptualized agency as a vertical dimension on which individuals who are more agentic are positioned above others (i.e., as superior), and individuals who are less agentic are positioned below others (i.e., as inferior) (Locke, 2014). Thus, when an entrepreneur discloses a personal flaw indicating unfavorably high level of agency, investors are likely to conclude that the entrepreneur sees themselves as superior to others, whereas when an entrepreneur discloses a personal flaw related with unfavorably low level of agency, investors may infer that the entrepreneur sees themselves as inferior to others.

We thus propose two categories of personal flaws, leading to our first hypothesis:

**Hypothesis 1.** When entrepreneurs disclose a personal flaw suggesting that the entrepreneurs possess excessive agency, then investors infer that the entrepreneurs view themselves as superior to others, whereas when entrepreneurs disclose a personal flaw suggesting that the entrepreneurs possess insufficient agency, then investors infer that the entrepreneurs view themselves as inferior to others.

## 2. The differential effects of agency-excess and agency-deficit flaws

We suggest that entrepreneurs disclosing *agency-excess flaws* and *agency-deficit flaws* will have different effects. At its core, the investor-entrepreneur relationship is a power-asymmetric relationship focused on one party soliciting resources from another party. Thus, entrepreneurs are in the rather more vulnerable position of asking for assistance from others, needing to persuade and influence others to join them.<sup>1</sup> In this context, then, we propose that signals that indicate entrepreneurs view themselves as generally superior to others (i.e., agency-excess flaws) misalign with the position of entrepreneurs seeking resources and needing help from others. Indeed, seeing oneself as generally superior to others may be a red flag when one is building a venture, which requires collaboration with and willingness to learn from others. In contrast, signals that indicate that entrepreneurs view themselves as generally inferior to others (i.e., agency-deficit flaws) align with the position of entrepreneurs seeking resources and needing help from others, thus leading to increased investment.

### 2.1. Agency-excess flaws

First, we begin by addressing how potential investors react to entrepreneurs' disclosures of agency-excess flaws, which indicate that entrepreneurs view themselves as superior to others. At first glance, one might expect that investors would look up to these self-proclaimed superior entrepreneurs, feel confident about them, and offer them

<sup>1</sup> This focus on entrepreneurs, who are in a power-asymmetric relationship with investors, is thus different from research that examined how high-status individuals (e.g., prestigious MBA students, executives) benefit or suffer from self-disclosure of negative information (e.g., Gibson et al., 2018; Jiang et al., 2022).

resources. After all, isn't superiority something that elevates people and draws us toward them?<sup>2</sup> This may be particularly expected when entrepreneurs solicit funding; for example, it has been theorized that highly agentic characteristics (e.g., overconfidence) might attract investor resources because they reassure investors about entrepreneurs' visions/abilities (Hayward et al., 2006).<sup>3</sup>

However, drawing on social comparison theory, we suggest instead that entrepreneurs disclosing agency-excess flaws will undermine potential investment. We propose that disclosing agency-excess flaws leads investors to infer that an entrepreneur views themselves as superior to others, meaning that the entrepreneur is detached from others and does not tend to seek out or rely on (or may even disregard) their input. Specifically, we propose that disclosing agency-excess flaws cultivates the perception that a person *thinks* they are superior to others (e.g., they feel that they are better or more important than others) in ways that undermine this entrepreneur's connections to other people, including investors.

As research on social comparison illustrates, superiority to others risks creating the sense that a person is detached from others; indeed, the literature cautions that "outperforming others can create a sense of separation" (Exline & Zell, 2012, p. 236) between individuals. Being aware of this fact, individuals even strategically minimize their superiority to others to avoid undermining social connections to them (Exline & Lobel, 1999; Zell et al., 2020).<sup>4</sup> Thus, superiority sets one person apart from others, undermining closeness to others.

The claimed and presumed superiority that we propose disclosure of agency-excess flaws generates may, in fact, be particularly aversive when it is expressed by an entrepreneur who is asking for resources from others. It may seem quite ironic and presumptuous for an entrepreneur who is relying on investors to suggest they see other people as beneath them. Indeed, when making a case for why disclosing flaws may be advantageous for leaders, management scholars have argued that "if executives try to communicate that they're perfect at everything, there will be no need for anyone to help them with anything. They won't need followers. They'll signal that they can do it all themselves" (Goffee & Jones, 2000, p. 52). What scholars have not considered is that disclosing certain flaws may signal precisely this same thing. We thus propose that this inferred self-proclaimed superiority to others will undermine the connection an investor feels with an entrepreneur, and that this can undermine investment.

## 2.2. Agency-deficit flaws

Second, how would potential investors react to entrepreneurs who disclose agency-deficit flaws that indicate that entrepreneurs view themselves as inferior to others? A lay perspective might expect that an

<sup>2</sup> We note, however, that increasingly research suggests that excesses can have a downside, including having "too much of a good thing" like being too conscientious, too extraverted, or too learning oriented (Grant, 2013; Grant & Schwartz, 2011), supporting the notion that "superior is not always better," even when it concerns objective goods.

<sup>3</sup> Another perspective could be that traits that signal excessive agency, like narcissism, signal that individuals have power, thus drawing others toward them and increasing support (see e.g., Pfeffer, 2021). However, we expect that this is unlikely in the case of entrepreneurs, given that entrepreneurs are in the rather less powerful position of asking investors for resources, as opposed to offering resources to others. In addition, empirical research finds that entrepreneur narcissism undermines investment (for an example, see Bollaert et al., 2020).

<sup>4</sup> Social comparison theory does outline cases in which comparisons with superior others are uplifting rather than threatening (e.g., when the target serves as an inspiring or hopeful role model) (Collins, 1996; Taylor & Lobel, 1989). However, we focus on personal flaws indicating a person's *perceived* superiority to others and argue that this claimed superiority is unlikely to inspire or attract others and rather is likely to be aversive.

entrepreneur's presumed inferiority would lead investors to look down on this entrepreneur, undermine confidence in them, and undermine investment. However, we draw on social comparison theory to suggest instead that disclosing agency-deficit flaws leads investors to be more likely to offer entrepreneurs resources.

Social comparison theory suggests that in contrast to perceiving others' superiority, perceiving others' inferiority has benign effects on other people, thus cultivating a closer affective connection to seemingly inferior others than those who appear superior (Dunn et al., 2012). When an individual exposes their inferiority, it puts other people in an elevated position from which they can help this inferior individual (Tosun et al., 2020; Zheng et al., 2015). Thus, just as claiming superiority may send an aversive signal that a person can "do it all themselves" and needs no help, claiming inferiority may signal that a person *needs* resources and collaboration—exactly what entrepreneurs are hoping that investors will offer.

The lines of reasoning above lead to our second hypothesis:

**Hypothesis 2.** When entrepreneurs disclose an agency-excess flaw, it reduces investment, whereas when entrepreneurs disclose an agency-deficit flaw, it increases investment.

## 3. The moderating role of an investor's own flaws

Much of the initial research on social comparison focused on agentic, "vertical" comparisons (i.e., an individual comparing themselves to superior or inferior others), as we did in the previous sections. However, social comparison theorists later proposed that a second driver of comparisons with others are *communal concerns* that result in "horizontal" comparisons (Locke, 2020). Communal concerns involve seeking out similar others with whom to compare one's self with the goal of forging a common bond (e.g., to realize that one is not alone or isolated) (Krizan & Gibbons, 2014; Locke & Nekich, 2000). Thus, communal social comparisons involve judgments of another person's similarity or dissimilarity (Locke, 2020).

Indeed, in line with theorizing about communal concerns, crowd-funding research on homophily highlights that investor-entrepreneur similarity elicits investment (Ertug et al., 2022; He et al., 2024; Pollack et al., 2021): that is, findings broadly support the notion that "birds of a feather flock together" and "similarity breeds connection" across more objective factors such as demographic similarity in gender, age, and geographic proximity (Bapna & Ganco, 2020; Greenberg & Mollick, 2017; Groza et al., 2020; Seigner et al., 2024; D. Wang & Prokop, 2024) as well as more subjective factors such as similarity in taste (Petit & Wirtz, 2022) or needs (Oo et al., 2019). Thus, we propose that entrepreneur flaw disclosure should most effectively elicit investment when the disclosure involves a personal flaw that the investor also possesses (i.e., it involves investor-entrepreneur similarity). When the investor is dissimilar to the entrepreneur (i.e., does not possess the same flaw), then flaw disclosure should less effectively elicit investment (e.g., perhaps having a smaller or null effect).

Expanding this reasoning further, we propose that flaw disclosures will elicit more investment when disclosures involve agency-deficit flaws (which we have argued build closeness with others based on agentic concerns, see [Hypothesis 2](#)) and when the investor is similar to the entrepreneur with respect to the flaw (i.e., possesses the same agency-deficit flaw, which we argue should further build closeness based on communal concerns). However, when the investor is dissimilar to the entrepreneur (i.e., does not possess the same agency-deficit flaw), we propose that the closeness otherwise generated by disclosing agency-deficit flaws should be undermined by this dissimilarity, thus ultimately eliciting less investment relative to investors who possess the same flaw.

In contrast, we argue that when disclosures involve agency-excess flaws (which we have argued *undermine* closeness, see [Hypothesis 2](#)), because these flaws are incapable of generating closeness between individuals (i.e., they can only distance one individual and another), even

similar investors who possess the same agency-excess flaw that the entrepreneur discloses will not be inspired to invest. We have suggested above that disclosing agency-excess flaws increases the sense that people view themselves as superior to others, and that superiority increases a sense of being set apart from and distant to others. Likewise, we suggested that disclosing agency-deficit flaws increases the sense that people view themselves as inferior to others, thus drawing investors toward offering resources to these more vulnerable others. Along similar lines, then, we argue that only the disclosure of agency-deficit flaws can cultivate closeness between two individuals, while the disclosure of agency-excess flaws cannot do so, even when another person possesses this same agency-excess flaw.

Thus, we identify the personal attributes of investors (i.e., their own agency-deficit or agency-excess flaws), as a critical factor that shapes how investors respond to the disclosure of entrepreneurs' personal flaws. This reasoning leads to our third and fourth hypotheses:

**Hypothesis 3.** Investors' own flaws do not shape how they respond to entrepreneur disclosures of agency-excess flaws; even similar investors (i.e., who possess the same agency-excess flaws) do not respond more positively to agency-excess flaw disclosure, relative to no disclosure.

**Hypothesis 4.** Investors' own flaws shape how they respond to entrepreneur disclosures of agency-deficit flaws, such that similar investors (i.e., who possess the same agency-deficit flaws) respond more positively to flaw disclosure than dissimilar investors (i.e., who do not possess the same agency-deficit flaws).

#### 4. The mediating role of psychological closeness

Our theorizing above has suggested that disclosures of agency-deficit and agency-excess flaws differentially affect investment because they influence feelings of *psychological closeness*, or "the degree of overlap between one's own self-concept and that of another individual ... [that] is an indication of the sense of closeness between self and others" (Li & Zhang, 2014, p. 1078). As above, we argue that only agency-deficit flaws that indicate inferiority can cultivate closeness with others, while agency-excess flaws that indicate distance superiority cannot.

We suggest that psychological closeness is shaped by both flaw type and investor similarity, and will ultimately spur potential investors to invest in an entrepreneur's cause. Psychological closeness produces feelings of relatedness and self-other overlap that inspire individuals to take on others' goals and behaviors. As Li & Zhang (2014: 1078) write, "The greater the connectedness people perceive toward a social other, ... the more willing they will be to share resources or try to help." Psychological closeness to another person motivates individuals to invest more in that person, even when it is financially costly (Gunia et al., 2009). Thus, when flaw disclosures inspire psychological closeness, they should inspire investment.

**Hypothesis 5.** Increased psychological closeness underlies the differential effects of agency-deficit and agency-excess flaws on investment. Disclosing agency-deficit flaws increases psychological closeness with similar (but not dissimilar) investors, whereas disclosing agency-excess flaws does not.

#### 5. Overview of studies

To test our theory, we conducted a field study and experiments that gave potential investors crowdfunding opportunities. First, we conducted a pilot test of the flaw framework (Pilot Study). Then, to observe effects in a naturalistic setting and explore a possible main effect of flaw disclosure, we examined the personal flaws entrepreneurs disclose on the crowdfunding platform Kickstarter (Study 1). Next, we examined our full model of flaw disclosure in an experiment embedded in an investment game fielded via the Internet forum Reddit (Study 2) and two online experiments (Studies 3 and 4). Informed consent was obtained

and study protocols were approved by the university review board. Data, code, and materials are provided at: <https://osf.io/k4d2q/>.

#### 6. Pilot study

Our pilot study tested whether disclosing agency-excess flaws creates the inference that a discloser sees themselves as superior to others and disclosing agency-deficit flaws creates the inference that a discloser sees themselves as inferior to others (Hypothesis 1). To ensure the flaws are indeed perceived as negative characteristics, participants evaluated their negativity.

##### 6.1. Method

First, we identified four agency-excess and four agency-deficit flaws, drawing on our theorizing and common examples of negative personality traits from research (Abele et al., 2008). We pretested these eight flaws, among a list of others, to ensure people perceived them as related to an agency excess or deficit; 82–96 % of participants categorized the flaws correctly (see Appendix A). Then, we recruited U.S. and English-fluent participants on Prolific, a U.K.-based global online platform commonly used to recruit participants for academic research (Peer et al., 2022). We paid participants £0.45 for the 2–3-minute study. We aimed to recruit 150 participants; this would provide us with > 80 % power with  $\alpha = 0.05$  to detect a medium effect size (Cohen's  $d = 0.5$ ) in a two-tailed between-subjects  $t$ -test. 150 participants completed the study (76 men, 50.7 %; 73 women, 48.7 %; 1 non-binary, 0.6 %).

We randomly assigned participants to imagine meeting a new person who disclosed either one of four agency-deficit flaws (being insecure, disorganized, a pushover, gullible) or one of four agency-excess flaws (being arrogant, a control freak, headstrong, or skeptical). Participants then made inferences about discloser superiority (3 items,  $\alpha = 0.90$ ,  $\omega = 0.91$ , e.g., "How much would you think that this person thinks they are better than others?"; 1 = not at all, 5 = a great deal) and inferiority (3 items,  $\alpha = 0.86$ ,  $\omega = 0.86$ , e.g., "How much would you think that this person thinks they are worse than others?"; 1 = not at all, 5 = a great deal), using items based on past research (Freis & Hansen-Brown, 2021; Wheeler & Miyake, 1992). Participants also rated flaw negativity (3 items,  $\alpha = 0.82$ ,  $\omega = 0.83$ , e.g., "being\_\_ is generally a negative thing"; 1 = not at all, 5 = a great deal). See materials in Appendix B.

##### 6.2. Results

Table 1 shows means, standard deviations, and correlations between all variables. We conducted  $t$ -tests to compare average ratings across the four agency-excess flaws with the average ratings across the four agency-deficit flaws.<sup>5</sup> In line with Hypothesis 1, when the discloser admitted an agency-excess flaw, participants reported greater inferred superiority ( $M = 2.55$ ,  $SD = 1.20$ ) relative to the agency-deficit flaw ( $M = 1.18$ ,  $SD = 0.37$ ), 95 % CI: [1.08, 1.65],  $t(148) = 9.42$ ,  $p < 0.001$ , Cohen's  $d = 1.54$ . Participants also reported greater inferred inferiority when the discloser admitted an agency-deficit flaw ( $M = 2.77$ ,  $SD = 1.10$ ) relative to an agency-excess flaw ( $M = 1.82$ ,  $SD = 0.76$ ), 95 % CI: [0.65, 1.26],  $t(148) = 6.17$ ,  $p < 0.001$ , Cohen's  $d = 1.01$ . Agency-excess flaws and agency-deficit flaws were rated as equally negative ( $M_{\text{Agency-Excess}} = 2.95$ ,  $SD = 1.05$ ;  $M_{\text{Agency-Deficit}} = 3.04$ ,  $SD = 1.02$ ), 95 % CI: [-0.43, 0.24],  $t(148) = -0.56$ ,  $p = 0.580$ , Cohen's  $d = 0.09$ .<sup>6</sup> Participant similarity did not moderate these effects (see Appendix C).

<sup>5</sup> Results held when we re-conducted analyses that controlled for a variable indicating which particular flaw of the four was disclosed.

<sup>6</sup> A within-subjects study in which participants each rated one agency-excess and one agency-deficit flaw revealed similar results (Appendices C and D).

**Table 1**  
Means, standard deviations, and correlations (Pilot Study).

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6
1. Type of flaw	0.49	0.50						
2. Inferred superiority	1.86	1.11	0.61***					
3. Inferred inferiority	2.30	1.06	-0.45***	-0.23**				
4. Negativity of flaw	2.99	1.03	-0.05	0.26**	0.32***			
5. Flaw sharing	3.13	1.67	0.24**	0.10	-0.03	-0.28***		
6. Age	37.34	12.39	-0.06	-0.15 <sup>+</sup>	0.01	-0.08	-0.13	
7. Gender	0.49	0.50	.15 <sup>+</sup>	0.01	-0.12	-0.22**	0.02	0.10

Note. \*\*\* indicates  $p < 0.001$ , \*\* indicates  $p < 0.01$ , \* indicates  $p < 0.05$ , <sup>+</sup> indicates  $p < 0.10$ . *M* and *SD* are used to represent mean and standard deviation, respectively. *Type of flaw* was coded such that 0 = agency-deficit flaw, 1 = agency-excess flaw. *Gender* was coded such that 0 = man, 1 = woman.

### 6.3. Discussion

Results of our pilot study supported [Hypothesis 1](#), which proposed that flaws can be categorized along two dimensions: *agency-excess flaws* and *agency-deficit flaws*. Supporting our theorizing, agency-excess flaws indicated to interaction partners that disclosers think they are superior to others, whereas agency-deficit flaws indicated to interaction partners that disclosers think that they are inferior to others. In line with our definition of personal flaws, each type of flaw was seen as a negative personal characteristic.

## 7. Study 1

To observe flaw disclosure in a naturalistic setting and explore possibilities of a main effect of flaw type ([Hypothesis 2](#)), Study 1 was a field study that examined the personal flaws entrepreneurs disclose “in the wild” in their crowdfunding pitches.

### 7.1. Method

#### 7.1.1. Sample

We collected information about pitches on [Kickstarter.com](#), a global crowdfunding platform focused on creative projects hosted by an American company. We sorted the pitches by “newest” to collect the most recent pitches from the United States on the company website (over 400,000 pitches total at the time of data collection) and collected detailed information about the first 2,000 pitches listed. We chose to sample 2,000 pitches because after a research assistant had coded 500 initial pitches, about 13 % of the pitches were coded as containing some kind of negative personal information. Thus, in an a priori power analysis for a two-tailed independent samples *t*-test, we assessed how many observations would be needed to detect a small effect (Cohen’s  $d = 0.20$ ) with 80 % power and an alpha of 0.05, using an allocation ratio between the two groups of 13 % in one group vs. 87 % in the other group. This yielded 1,930 observations, thus we rounded up to 2,000.

#### 7.1.2. Measures

Means, standard deviations, and correlations between all measures are in [Table 2](#).

**7.1.2.1. Personal flaws.** The research assistant coded whether the pitch contained any type of negative personal information (0 = no, 1 = yes), defined as disclosures involving struggles from one’s background, failures, and negative personality characteristics; the negative personal information was then categorized as to whether it related to personal flaws (i.e., some negative personal information was unrelated to characteristics of the self, e.g., family member mental health, physical illness and injuries, see [Supplemental Tables 3 and 4](#)). Of the 2,000 pitches, 271 (13.6 %) included entrepreneur disclosure of negative personal information, out of which a total of 126 (6.3 %) included personal flaws.

Then, to categorize the personal flaws as related to an agency-excess or an agency-deficit, we conducted a supplementary study following the same procedure as in the Pilot Study (see [Appendix E](#)), in which 100

participants on Prolific read a definition of agency and then rated a list of 19 personal flaws as emerged on [Kickstarter.com](#) as to the extent to which the flaw indicated that a person lacks agency or that a person has excessive agency (1 = *strongly lacks agency*, 6 = *strongly excessive agency*). See examples of participants’ ratings of flaw agency in [Table 3](#). We used participants’ ratings to categorize flaws as agency-deficit or agency-excess.

**7.1.2.2. Investment.** We collected two measures of investment, namely 1) the total number of dollars that were pledged to the pitch, and 2) the number of campaign backers.

**7.1.2.3. Control variables.** We controlled for several variables related to entrepreneur and campaign characteristics that are accounted for in the entrepreneurial finance literature ([Chan & Parhankangas, 2017](#); [Dai & Zhang, 2019](#); [T.-C. Lin & Pursiainen, 2022](#); [Soublière & Gehman, 2020](#)), namely 1) the *total dollars requested* for the campaign, 2) the *duration of the campaign* (i.e., number of days of campaign length) and the *number of days left in the campaign*,<sup>7</sup> 3) the *total duration of any videos* posted in the campaign in seconds, 4) the *number of updates* on a campaign website, 5) whether campaigns were *identified as a “staff pick”*, 6) whether the campaign was the *first one launched* by the entrepreneur, 7) dummy variables indicating *entrepreneur race/ethnicity* and *gender*, and 8) *state fixed effects* to account for location.

We also used the Linguistic Inquiry and Word Count (LIWC) software ([Boyd et al., 2022](#)) to generate text-related variables that could predict outcome variables, namely the *word count of the text* (since longer posts may attract more investment) and the *percent of the text that used the word “I”* (as entrepreneurs who disclose personal flaws may write more about themselves, which could affect levels of investment, [Gafni et al., 2019](#)).

### 7.2. Results

#### 7.2.1. Agency-excess and agency-deficit flaws

A total of 120 (6.0 %) entrepreneurs disclosed agency-deficit flaws in their pitches. For example, six entrepreneurs described their anxiety, with one writing: “At the risk of being too honest, anxiety has played a big part in my life”; 29 entrepreneurs described their mental health struggles, as in this example: “This project, born out of my personal struggle with depression and the need for a creative outlet, aims to empower individuals and spark a positive change in the fashion industry”; and 11 entrepreneurs described their self-doubt: “Self-doubt, that persistent voice we all encounter, had a strong grip on me for a while.” A total of 15 pitches (0.8 %) included agency-excess flaws. For example, four entrepreneurs described issues with anger, writing “I also took inspiration from my own life dealing with anger management”; four wrote about their ADHD: “I attended Heron School of Art and Design and still continue my studio work in just about everything.

<sup>7</sup> If this number was listed as hours instead of days on the website, we divided the number of hours by 24 so that the number consistently indicated the number of days (i.e., 12 h = 0.5 days).

**Table 2**  
Means, standard deviations, and correlations (Study 1).

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Deficit flaws	0.06	0.24														
2. Excess flaws	0.01	0.09	0.20***													
3. \$ pledged	9427.98	55025.19	0.06*	-0.01												
4. \$ goal	24009.99	204153.20	0.00	-0.01	0.01											
5. # backers	88.95	390.99	0.06*	-0.01	0.84***	0.00										
6. Duration	36.21	14.45	0.01	-0.01	-0.03	0.05*	-0.08***									
7. Days to go	26.72	17.77	0.01	-0.01	-0.05*	0.02	-0.10***	0.47***								
8. Video sec.	252.84	1306.21	0.01	-0.01	0.10***	-0.00	-0.06**	-0.06**	-0.04							
9. # updates	6.72	9.50	-0.04 <sup>+</sup>	0.01	0.23***	-0.05*	0.32***	-0.23***	-0.13***	0.19***						
10. Staff pick	0.18	0.38	0.01	-0.01	0.23***	-0.02	0.25***	-0.16***	-0.08***	0.06**	0.32***					
11. 1st campaign	0.61	0.49	0.06*	0.01	-0.06**	0.06**	-0.12***	0.29***	0.16***	-0.07**	-0.32***	-0.16***				
12. Word count	716.41	656.17	0.02	-0.00	.04 <sup>+</sup>	0.01	.04 <sup>+</sup>	-0.03	-0.00	0.01	0.03	0.01	-0.00			
13. % of text "I"	1.88	2.40	-0.01	0.03	-0.01	-0.01	-0.02	0.03	0.03	-0.02	-0.03	-0.01	-0.00	-0.16***		
14. Race	0.39	0.49	-0.01	0.01	-0.01	0.03	-0.04 <sup>+</sup>	0.08***	0.03	0.07**	-0.11***	-0.13***	0.05*	-0.04	0.02	
15. Gender	0.66	0.47	-0.08***	0.00	0.07**	.04 <sup>+</sup>	0.08***	-0.01	-0.01	-0.04 <sup>+</sup>	0.05*	-0.10***	-0.01	0.02	0.01	-0.05*

Note. \*\*\* indicates  $p < 0.001$ , \*\* indicates  $p < 0.01$ , \* indicates  $p < 0.05$ , + indicates  $p < 0.10$ . M and SD are used to represent mean and standard deviation, respectively. sec. = seconds. Deficit flaws was coded such that 0 = no disclosure, 1 = agency-excess flaw disclosure. Excess flaws was coded such that 0 = no disclosure, 1 = agency-excess flaw disclosure. Race was coded such that 0 = white, 1 = other. Gender was coded such that 0 = woman, 1 = man or unclear.

**Table 3**

Participants' mean ratings of agency for different types of personal flaws, drawn from those revealed in pitches on [Kickstarter.com](https://www.kickstarter.com) (Study 1). See Appendix E in the Supplemental Material for details.

Flaw Type	Mean Participant Rating of Agency (SD)
<b>Agency-deficit</b>	
Being anxious	2.95 (1.23)
Being antisocial	2.71 (1.23)
Having self-doubts	2.66 (1.12)
Being depressed	2.53 (1.06)
Having dyslexia	2.71 (0.91)
Being ostracized	2.78 (1.11)
Being homeless	2.36 (1.08)
Abusing drugs	2.71 (1.37)
Abusing alcohol	2.69 (1.20)
Being unemployed	2.44 (1.11)
Being broke	2.51 (1.11)
Getting fired	2.68 (1.14)
Having trauma	2.82 (1.11)
<b>Agency-excess</b>	
Being sensitive	3.13 (1.08)
Having anger management issues	3.38 (1.57)
Having ADHD	3.08 (1.19)
Being a felon	3.23 (1.50)
Working as a stripper	3.24 (1.18)
Working as a drug dealer	3.39 (1.63)

Note. SD = standard deviation. Participants rated each attribute on a scale from 1 = strongly lacks agency, 6 = strongly excessive agency. Attributes with mean scores lower than 3 were categorized as agency-deficit flaws, while attributes with mean scores higher than 3 were categorized as agency-excess flaws.

**Table 4**

Unstandardized regression coefficients in generalized linear models with quasi-maximum likelihood estimation predicting investment on [Kickstarter.com](https://www.kickstarter.com) by (Study 1).

DV	(1) Total \$ pledged		(2) Number of backers	
	Model 1	Model 2	Model 1	Model 2
<i>Predictor</i>				
1. Agency-deficit flaws	18323.21***	14222**	133.09***	99.60**
2. Agency-excess flaws	-12204.79	-15191	-99.20	-117.42
3. Total \$ goal	0.00		0.00	
4. Duration	162.16 <sup>+</sup>		0.91	
5. Days to Go	-115.31		-1.24*	
6. Video seconds	2.50**		0.04***	
7. # updates	1014.73***		10.52***	
8. Staff pick	25551.19***		175.84***	
9. First campaign	2070.47		-1.49	
10. Word count	3.08 <sup>+</sup>		0.02 <sup>+</sup>	
11. % of text "I"	25.01		-0.67	
12. Race - Black	-31608.81***		-112.08*	
13. Race - Indian/ Pakistani	-33741.48		-105.08	
14. Race - Latinx	-27565.03		-89.46	
15. Race - Middle Eastern	-46459.75		-212.83	
16. Race - Other	-27906.41 <sup>+</sup>		-74.98	
17. Race - Unclear	-27019.40***		-68.34	
18. Race - White	-30233.25***		-90.83*	
19. Gender - Man	8659.27***		57.11*	
20. Gender - Unclear	3400.10		47.33	
Intercept	14485.77***	8689.00***	30.31	83.75***
State fixed effects	Yes	No	Yes	No
N	1951	2000	1951	2000

Note. + indicates  $p < 0.10$ , \* indicates  $p < 0.05$ , \*\* indicates  $p < 0.01$ , \*\*\* indicates  $p < 0.001$ . Model 1 includes control variables, and Model 2 does not include control variables. Agency-deficit flaws was coded such that 0 = no disclosure, 1 = agency-excess flaw disclosure. Agency-excess flaws was coded such that 0 = no disclosure, 1 = agency-excess flaw disclosure. The omitted base group for race was Asian. The omitted base group for gender was woman. Numbers of observations vary due to missing data on some control variables. DV = Dependent variable.

(Thanks ADHD.)<sup>8</sup>; and four described working in a stigmatized jobs (e.g., as a drug dealer, hustler). See [Supplemental Table 3](#) for further examples.<sup>10</sup>

### 7.2.2. Investment

Our dependent variables (total dollars pledged and number of backers) were both highly right-skewed, so we analyzed the data using generalized linear models with quasi-maximum likelihood estimation, as recommended by [Wulff et al. \(2023\)](#). We predicted the investment variables with two variables indicating whether the entrepreneur disclosed an agency-excess flaw (0 = no, 1 = yes) or an agency-deficit flaw (0 = no, 1 = yes) and the control variables.

Entrepreneurs who disclosed agency-excess flaws did not get more investment ( $M = 2031.07$ ,  $SD = 4241.32$ ), compared to entrepreneurs who did not disclose these flaws ( $M = 9483.88$ ,  $SD = 55227.88$ ),  $B = -12204.79$ , 95 % CI: [-40315.35, 15905.76],  $SE = 14342.38$ ,  $t(1878) = -0.85$ ,  $p = 0.395$ , Cohen's  $d = -0.14$ . Their projects also did not receive more backers ( $M = 94.18$ ,  $SD = 575.65$ ), compared to projects of entrepreneurs who did not disclose agency-excess flaws ( $M = 88.04$ ,  $SD = 354.01$ ),  $B = -99.20$ , 95 % CI: [-294.07 95.68],  $SE = 99.43$ ,  $t(1878) = -1.00$ ,  $p = 0.319$ , Cohen's  $d = -0.16$ .

In contrast, when entrepreneurs disclosed agency-deficit flaws, their projects were pledged more dollars ( $M = 21771.58$ ,  $SD = 116882.40$ ), compared to entrepreneurs who did not disclose these flaws ( $M = 8640.09$ ,  $SD = 48431.20$ ),  $B = 18323.21$ , 95 % CI: [8306.48, 28339.94],  $SE = 5110.67$ ,  $t(1878) = 3.59$ ,  $p < 0.001$ , Cohen's  $d = 0.24$ . This difference is equivalent to projects receiving over \$18,300 more on average when entrepreneurs disclosed agency-deficit flaws. Projects also received more backers when entrepreneurs disclosed agency-deficit flaws ( $M = 174.65$ ,  $SD = 856.72$ ), compared to projects for which entrepreneurs did not disclose these flaws ( $M = 83.48$ ,  $SD = 340.08$ ),  $B = 133.09$ , 95 % CI: [63.65, 202.52],  $SE = 35.43$ ,  $t(1878) = 3.76$ ,  $p < 0.001$ , Cohen's  $d = 0.23$ , equivalent to about 133 more backers on average. Results held when control variables were omitted. See [Table 4](#).

<sup>8</sup> At first glance, it may seem surprising that ADHD (i.e., attention deficit hyperactivity disorder) would be categorized as an agency-excess flaw by participants in our supplemental study (see Appendix E). This could be explained by key symptoms of ADHD (i.e., hyperactivity and impulsiveness) coming across as an excess of agency, as these symptoms evince themselves in behaviors such as excessive physical movement or excessive talking, acting without thinking, interrupting others, etc. that may seem more reflective of an excess of agency (e.g., dominating others, aggressive and rude behavior) than a deficit of agency (e.g., inactivity and apathy). Thus, we rely on participants' categorization of this flaw as agency-excess in our analyses. Nonetheless, results hold if the four cases of mentioning ADHD are omitted from analyses (or if ADHD is recategorized as an agency-deficit flaw).

<sup>9</sup> Most entrepreneurs who disclosed flaws (88.1% of the 126 who disclosed flaws) disclosed only either an agency-excess or an agency-deficit flaw. A total of nine entrepreneurs disclosed both agency-excess and agency-deficit flaws (e.g., being angry and antisocial). According to our theorizing, disclosures of both flaw types should be rare and might cancel each other out by indicating an inconsistent mix of presumed inferiority and superiority. Results held in terms of patterns and significance levels when these nine entrepreneurs were omitted from analyses.

<sup>10</sup> Our theory does not make predictions regarding effects of the total number of flaws disclosed. However, most entrepreneurs who disclosed agency-deficit flaws (75.8% of the 120 who disclosed agency-deficit flaws) disclosed only one agency-deficit flaw; 29 entrepreneurs disclosed more than one agency-deficit flaw. Likewise, most entrepreneurs who disclosed agency-excess flaws (93.3% of the 15 who disclosed agency-excess flaws) disclosed only one agency-excess flaw; only one entrepreneur disclosed more than one agency-excess flaw. Nonetheless, results held in terms of patterns and significance levels when re-conducting analyses with a numeric variable indicating the total number of flaws disclosed in each category disclosed.

## 7.3. Discussion

Study 1 showed that entrepreneurs who disclosed agency-deficit flaws in their pitches on [Kickstarter.com](#) received more investment. A small number of entrepreneurs disclosed agency-excess flaws in their pitches, and these disclosures showed no effect on investment. Next, Study 2 tests how entrepreneurs' disclosure of flaws shapes investment ([Hypothesis 2](#)) and whether this varies by investors' personal flaws ([Hypotheses 3 and 4](#)).

## 8. Study 2

We recruited investing enthusiasts to play an online investment game in which they had to distribute investments between 18 different start-ups. An experiment was embedded in the game: within-subjects, we varied the type of flaw that entrepreneurs disclosed (no flaw, an agency-excess flaw, or an agency-deficit flaw) to test whether, as we predicted in [Hypothesis 2](#), only the disclosure of agency-deficit flaws elicits investment. Between-subjects, we examined whether investors themselves shared the agency-excess or the agency-deficit flaw of the entrepreneur, and tested whether, relevant to [Hypotheses 3 and 4](#), this would affect results.

### 8.1. Method

#### 8.1.1. Participants

We recruited participants through Reddit's *r/Entrepreneur*, an online board about start-ups and investing, which included over 538,000 members worldwide at time of data collection. We did so because group members are highly engaged with the topic of entrepreneurship and thus should expend effort and attention in making investment decisions. We aimed to recruit enough participants to detect a small effect size. A power analysis for a repeated-measures analysis of variance (ANOVA) indicated that approximately 200 participants would provide > 80 % power with  $\alpha = 0.05$  to detect a relatively small effect size ( $f = 0.127$ ) for our within-between subjects interaction (i.e., within-subjects, flaw type *agency-excess*, *agency-deficit*, or *none*, and between subjects, flaw similarity *yes* or *no*). We posted the study on Reddit until we passed this number, following a first come, first served logic; when we removed the post, 239 participants had taken part. A total of 226 participants passed an attention check (94.6 %) and were included in analyses. Most participants were men (191 men [84.5 %], 33 women [14.6 %], 1 genderfluid, 1 not reported). Participants were recruited from across the globe and included 149 living in North America (65.9 %), 44 in Europe (19.5 %), 14 in Asia (6.2 %), 8 in Australia (3.5 %), 4 in South America (1.8 %), and 7 (3.1 %) who did not report where they lived.

#### 8.1.2. Procedure

Participants first replied to a questionnaire that assessed participants' flaw similarity and demographic information. Then participants took part in an investment game, in which they could invest in 18 different start-ups based on short descriptions of each start-up (see [Appendix F](#)). We varied descriptions to feature either the disclosure of no flaw, an agency-excess flaw (in this study, arrogance), or an agency-deficit flaw (in this study, insecurity), and we assessed whether investment corresponded to flaw type and investor flaw similarity.

**8.1.2.1. Questionnaire.** To assess whether participants possessed the same flaw as the entrepreneur disclosed, they were asked as part of a personality measure to select (among filler items) which of the two

statements describes them better: “I am insecure” or “I am arrogant.”<sup>11</sup>

**8.1.2.2. Investment game.** Participants were invited to play an “investment game” in which they were given \$10 to invest among 18 different start-ups. Descriptions of the start-ups, which were portrayed as quotes from the start-up’s CEO, were 4–5 sentences long and based on actual start-ups that had run crowdfunding campaigns on the website [Wefunder.com](https://www.wefunder.com); names were changed so that participants could not look up the real start-up. Participants earned money based on the success of these real start-ups’ actual crowdfunding campaigns, defined as the percentage of target goal fundraised on the website [Wefunder.com](https://www.wefunder.com), which could multiply participant investments by a factor ranging from 0.04 to 3 (i.e., participants could get a return on their \$10 investment ranging between \$0.40 to \$30). Participants chose to receive their payment as an Amazon gift card or as a cash payment through PayPal or Venmo at study outset, and were sent the money they earned through their investments at the study conclusion.

Participants had 15 min to read the different start-up descriptions and make their investment decisions. Time was restricted to resemble common pitch settings in which investors have to make relatively quick decisions about ventures (Brooks et al., 2014). A timer counted down the 15 min and the page automatically advanced once time was up. Participants were instructed to invest money in \$1 increments only (e.g., they could not invest \$0.50 or \$1.50), and the survey was programmed to disable decimal points in the text fields where participants entered their investment decisions to facilitate this. Participants were required to invest all \$10.

**8.1.2.3. Manipulation of entrepreneur flaws.** All participants read about the same 18 start-ups; we chose 18 such that participants had a number of start-ups they could evaluate without being overburdened and such that participants could not invest in all start-ups. There were three similar start-ups in six different industries: baked goods, fashion, grocery, sports, virtual reality, and workplace software. The description of each of the three similar start-ups varied, such that participants were randomly assigned to read about one start-up where the entrepreneur disclosed no personal flaw, one start-up where the entrepreneur disclosed an agency-excess flaw (i.e., arrogance) and one start-up where the entrepreneur disclosed an agency-deficit flaw (i.e., insecurity). For example, an agency-excess flaw disclosure read: “I’m an extremely confident, even somewhat cocky person by nature” and an agency-deficit flaw disclosure read: “I’m a pretty insecure person by nature.” The start-up that was paired with an agency-excess, agency-deficit, or no flaw was randomized across participants, as well as the order of presentation.

## 8.2. Results

Means, standard deviations, and correlations between measures are in [Supplemental Table 5](#). All but four participants (98.2 %) answered the question about flaw similarity; these four are excluded from analyses. There were approximately equal numbers of arrogant participants (117; 52.7 %) and insecure participants (105; 47.3 %).

### 8.2.1. Effects of flaw type

First, would disclosing agency-excess flaws decrease investment and disclosing agency-deficit flaws increase investment ([Hypothesis 2](#))? To test this question, for each investor, we calculated the proportion of their \$10 they invested in the start-ups where the entrepreneur disclosed an agency-excess flaw, an agency-deficit flaw, and no flaw. We then

<sup>11</sup> Study 2 uses a forced-choice measure to categorize participants as possessing the same flaw as an entrepreneur. Given possible concerns about the reliability and interpretability of forced-choice measures, Studies 3 and 4 use a continuous measure to categorize participants to complement Study 2.

predicted in an ANOVA the proportion with a variable indicating flaw type. This variable included two dummy codes to omit the category “no flaw” and compare it, using the first dummy code, to agency-excess flaw disclosures and, using the second dummy code, to agency-deficit flaw disclosures. Contrary to predictions, flaw type did not predict investment,  $F(2, 663) = 1.32, p = 0.267$ , Cohen’s  $f = 0.06$ . Relative to entrepreneurs who disclosed no flaws ( $M = 0.34, SD = 0.21$ ), investors did not invest more or less in entrepreneurs who disclosed agency-excess flaws ( $M = 0.31, SD = 0.21$ ),  $B = -0.03$ , 95 % CI: [-0.07, 0.02],  $SE = 0.02$ ,  $t(663) = -1.23, p = 0.219$ , Cohen’s  $d = -0.12$ , or agency-deficit flaws ( $M = 0.35, SD = 0.23$ ),  $B = 0.01$ , 95 % CI: [-0.03, 0.05],  $SE = 0.02$ ,  $t(663) = 0.31, p = 0.758$ , Cohen’s  $d = 0.03$ . Thus, [Hypothesis 2](#) was not supported.

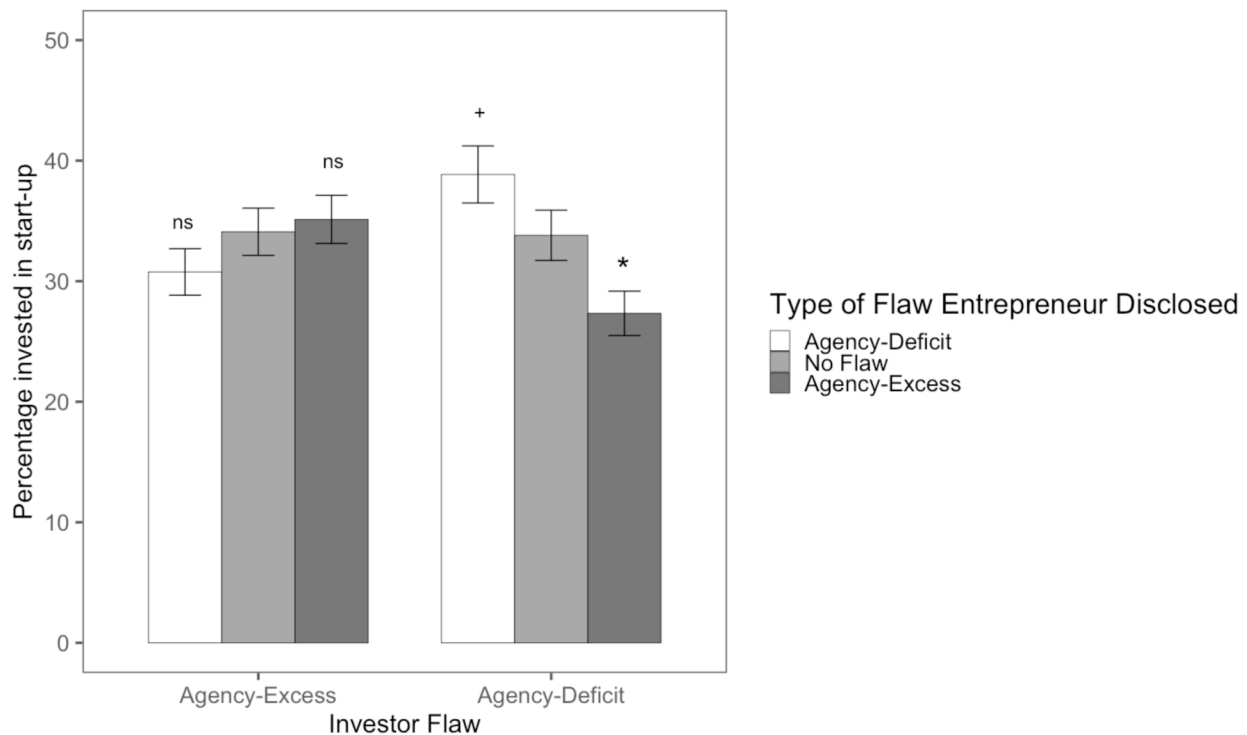
### 8.2.2. Moderation by investor flaw similarity

Did flaw disclosure have different effects depending on whether investors possessed the same flaw as the entrepreneur ([Hypotheses 3 and 4](#))? When we added into the model used above the variable indicating investors’ flaw type, and the interaction of this with the variable indicating entrepreneur flaw type, this interaction was significant,  $F(2, 660) = 7.63, p < 0.001$ , Cohen’s  $f = 0.15$ . First, relevant to [Hypothesis 3](#), did agency-excess flaw disclosures fail to draw in even similar investors? To answer this question, we examined the dummy code comparing investments in entrepreneurs who disclosed agency-excess flaws to entrepreneurs who disclosed no flaws. For this comparison, the interaction between investor flaw similarity and flaw type did not reach conventional significance thresholds,  $B = -0.08$ , 95 % CI: [-0.15, 0.005],  $SE = 0.04$ ,  $t(660) = -1.84, p = 0.066$ . Thus, investors’ own flaws did not shape their responses to agency-excess flaw disclosures, in line with [Hypothesis 3](#).

Second, did agency-deficit flaw disclosures shape investment among similar and dissimilar investors, as suggested in [Hypothesis 4](#)? Examining the dummy code comparing investments in entrepreneurs who disclosed agency-deficit flaws to investments in non-flawed entrepreneurs, the interaction between investor flaw similarity and flaw type was significant,  $B = 0.08$ , 95 % CI: [0.004, 0.16],  $SE = 0.04$ ,  $t(660) = 2.06, p = 0.040$ . This suggests that investors *did* respond differently to disclosures of agency-deficit flaws depending on whether they possessed the same flaw, supporting [Hypothesis 4](#). We thus plotted the interaction in [Fig. 2](#) and examined the simple effects. We found that insecure investors tended to invest slightly (but non-significantly) more of their \$10 in the entrepreneurs who disclosed their insecurity ( $M = 0.39, SD = 0.24$ ) relative to entrepreneurs who disclosed no flaws ( $M = 0.34, SD = 0.21$ ),  $B = 0.05$ , 95 % CI: [-0.01, 0.11],  $SE = 0.03$ ,  $t(660) = 1.71, p = 0.088$ , Cohen’s  $d = 0.23$ . In contrast, arrogant investors did not differ in the amount they invested in entrepreneurs who disclosed their insecurity ( $M = 0.31, SD = 0.21$ ) relative to entrepreneurs who disclosed no flaw ( $M = 0.34, SD = 0.21$ ),  $B = -0.03$ , 95 % CI: [-0.09, 0.02],  $SE = 0.03$ ,  $t(660) = -1.19, p = 0.234$ , Cohen’s  $d = -0.15$ . Insecure entrepreneurs received \$53 more total (\$408) from insecure investors than non-flawed entrepreneurs (\$355), while insecure entrepreneurs received \$39 less total (\$360) from arrogant investors than non-flawed entrepreneurs (\$399).

## 8.3. Discussion

Study 2 suggests that investing enthusiasts respond differently to entrepreneur flaw disclosures depending on both the type of flaw that entrepreneurs disclose and investors’ own flaw similarity. Specifically, the most positive responses surfaced among investors who possessed the same agency-deficit flaw that the entrepreneur disclosed. However, investors’ own flaw similarity did not shape responses to agency-excess flaw disclosures. Next, we report on two further studies which additionally examine the mediating role of psychological closeness.



**Fig. 2.** Proportion invested in entrepreneurs' start-ups by the type of flaw disclosed and potential investor flaw similarity (Study 2). *Note.* Error bars represent the standard error of the mean. Significance levels are for the contrast comparing the control condition to either the agency-deficit flaw or the agency-excess flaw, respectively. <sup>ns</sup>  $p \geq 0.10$ , <sup>+</sup>  $p < 0.10$ , <sup>\*</sup>  $p < 0.05$ .  $N = 222$  participants.

## 9. Study 3

Study 3 was a preregistered study (<https://osf.io/75wt6>) that used a between-subjects design to test Hypotheses 2, 3, and 4, and further, tested our proposition that psychological closeness underlies the effects (Hypothesis 5).

### 9.1. Method

#### 9.1.1. Procedure and participants

Participants evaluated one start-up, based on materials from Study 2 (Appendix G). Participants were informed that study participants were rating different start-ups and that the start-up rated most highly would be given a \$100 investment by the researchers (i.e., their choices were consequential). Between subjects, participants were randomly assigned to read about an entrepreneur who disclosed an agency-excess flaw (being arrogant, e.g., "I'm an arrogant person. It's one of my biggest flaws. I struggle with being egotistical"), disclosed an agency-deficit flaw (being insecure, e.g., "I'm an insecure person. It's one of my biggest flaws. I struggle with being self-doubting"), or a non-flaw disclosure (e.g., "I like to travel. My ideal vacation's at the beach. That's where I go when I can"). We included this neutral non-flaw disclosure to keep conditions length-matched and to ensure that the entrepreneur noted something personal in each of the interviews.

Participants then rated their psychological closeness with the entrepreneur as well as other attributes including authenticity, warmth, and competence, and then rated the extent to which they thought the start-up should receive a \$100 investment from the researchers.

A power analysis indicated that to detect a small effect size ( $f = 0.10$ ) with 95 % power and  $\alpha = 0.05$  for our between-subjects interaction, 1,548 participants would be necessary. We thus aimed to recruit at least 2,000 participants for the study to ensure that we reached this target sample size once excluding participants who failed an attention check. We recruited 2,042 U.S. participants on CloudResearch Connect, a platform commonly used in academic research (Hartman et al., 2023;

Litman et al., 2017), and paid participants \$0.75 for the 5-minute study. 1,596 participants passed an attention check (78.2 %) and were included in the final sample, including 751 (47.1 %) women and 839 (52.6 %) men.

#### 9.1.2. Measures

Means, standard deviations, and correlations between all measures are in Table 5.

**9.1.2.1. Participants' flaw similarity.** Prior to reading about the start-ups, participants reported demographic information and completed a questionnaire about personality which (among filler items) included an item in which participants rated the extent to which they possess the agency-excess flaw (i.e., "I see myself as arrogant and egotistical") and the agency-deficit flaw (i.e., "I see myself as insecure and self-doubting") (1 = strongly disagree, 7 = strongly agree).

**9.1.2.2. Investments.** Participants responded to the question "How much do you think this start-up should receive a \$100 investment?" (1 = not at all, 5 = a great deal).

**9.1.2.3. Psychological closeness with the entrepreneur.** Participants indicated their level of psychological closeness with the entrepreneur from 1 (least) to 7 (most) using a measure from past research (Gächter et al., 2015). Participants saw seven pairs of circles with varying degrees of overlap and were told that one circle represented themselves and one circle represented the entrepreneur. They were asked to select the pair of circles that they felt best describes how close they felt to the entrepreneur. Participants also completed another three-item measure to measure psychological closeness (Xie et al., 2022) ( $\alpha = 0.90$ ,  $\omega = 0.90$ , e.g., "How psychologically close do you feel to the CEO of this start-up?" 1 =

**Table 5**  
Means, standard deviations, and correlations (Study 3).

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10
1. Type of flaw	0.00	0.82										
2. Likelihood of investment	3.04	1.24	-0.07**									
3. Investor insecurity	3.65	1.87	0.04	0.01								
4. Investor arrogance	2.21	1.36	0.04	-0.02	0.12***							
5. Psychological closeness (3-item)	1.97	0.94	-0.30***	0.43***	0.06*	0.14***						
6. Psychological closeness (circles)	2.18	1.32	-0.24***	0.37***	0.01	0.07**	0.76***					
7. Authenticity	3.59	0.81	-0.24***	0.42***	-0.04	-0.12***	0.37***	0.32***				
8. Warmth	2.72	0.97	-0.46***	0.38***	-0.05	0.01	0.59***	0.48***	0.50***			
9. Competence	3.42	0.80	-0.02	0.52***	.04 <sup>+</sup>	-0.10**	0.38***	0.32***	0.56***	0.42***		
10. Age	39.42	13.24	-0.01	0.01	-0.21***	-0.07*	-0.11***	-0.10***	0.08***	0.01	0.04	
11. Gender	0.47	0.50	-0.02	0.06*	0.14***	-0.15***	-0.03	-0.07**	0.07**	0.02	0.10***	0.10***

Note. <sup>+</sup> indicates  $p < 0.10$ , \* indicates  $p < 0.05$ , \*\*\* indicates  $p < 0.001$ . *M* and *SD* are used to represent mean and standard deviation, respectively. *Type of flaw* was coded such that -1 = agency-deficit flaw, 0 = no flaw, 1 = agency-excess flaw. *Gender* was coded such that 0 = man, 1 = woman.

not close at all, 5 = extremely close).<sup>12</sup>

**9.1.2.4. Entrepreneur authenticity, warmth, and competence.** For discriminant validity, we measured perceptions of authenticity based on items from Jiang and colleagues (2022) (3 items,  $\alpha = 0.77$ ,  $\omega = 0.78$ , e.g., “How authentic is the CEO of this start-up?” 1 = not authentic at all, 5 = extremely authentic), warmth (2 items,  $r = 0.78$ , e.g., “How warm is the CEO of this start-up?” 1 = not warm at all, 5 = extremely warm), and competence (2 items,  $r = 0.66$ , e.g., “How competent is the CEO of this start-up?” 1 = not competent at all, 5 = extremely competent).

## 9.2. Results

### 9.2.1. Effects of flaw type

First, we tested whether flaw type was related to investment. We predicted investors' ratings that the start-up should receive the \$100 investment with a variable indicating flaw type, including two dummy codes to omit the “no flaw” condition as the reference group and compare it with the first, to the entrepreneurs who disclosed an agency-excess flaw and with the second, to the entrepreneurs who disclosed an agency-deficit flaw. Flaw disclosure predicted investment decisions,  $F(2, 1593) = 10.17$ ,  $p < 0.001$ , Cohen's  $f = 0.11$ . Investors less strongly championed investment in the entrepreneur who disclosed the agency-excess flaw ( $M = 2.86$ ,  $SD = 1.26$ ) relative to the control ( $M = 3.20$ ,  $SD = 1.22$ ),  $B = -0.34$ , 95 % CI: [-0.48, -0.19],  $SE = 0.08$ ,  $t(1593) = -4.48$ ,  $p < 0.001$ , Cohen's  $d = -0.27$ ; however, they did not significantly differ in their evaluations of the entrepreneur who disclosed the agency-deficit flaw ( $M = 3.06$ ,  $SD = 1.21$ ) relative to the control ( $M = 3.20$ ,  $SD = 1.22$ ),  $B = -0.14$ , 95 % CI: [-0.28, 0.01],  $SE = 0.08$ ,  $t(1593) = -1.80$ ,  $p = 0.072$ , Cohen's  $d = -0.11$ , thus partially supporting Hypothesis 2.

### 9.2.2. Moderation by investor flaw similarity

Would investors' own flaws shape their responses to agency-excess and agency-deficit flaw disclosures (relevant to Hypotheses 3 and 4)? First, we predicted investors' ratings championing investment with the variable indicating the type of flaw which the entrepreneur disclosed, investors' own agreement that they possess the agency-excess flaw, and the interaction between these two variables. A significant interaction would indicate that agency-excess flaw disclosure effects were moderated by investors' flaw similarity. The interaction was not significant,  $F(2, 1590) = 1.20$ ,  $p = 0.300$ , Cohen's  $f = 0.04$ , in line with Hypothesis 3.

Second, we predicted investors' ratings championing investment

with the variable indicating the type of flaw which the entrepreneur disclosed, investors' own agreement that they possess the agency-deficit flaw, and the interaction between these two variables. The interaction was significant,  $F(2, 1590) = 4.13$ ,  $p = 0.016$ , Cohen's  $f = 0.07$ , indicating that agency-deficit flaw disclosure effects were moderated by investors' flaw similarity and in line with Hypothesis 4. When investors strongly agreed that they possessed the agency-deficit flaw, investors did not differ in evaluations of the agency-deficit (vs. non-flawed) entrepreneur,  $B = 0.23$ , 95 % CI: [-0.07, 0.54],  $SE = 0.16$ ,  $t(1590) = 1.49$ ,  $p = 0.137$ , while when investors strongly disagreed that they possessed the agency-deficit flaw, investors less strongly championed for investment in the agency-deficit entrepreneur relative to the non-flawed entrepreneur,  $B = -0.42$ , 95 % CI: [-0.72, -0.29],  $SE = 0.13$ ,  $t(1590) = -3.24$ ,  $p = 0.001$ . Thus, on the measure of investment, it appeared that possessing the same flaw prevented investors from otherwise penalizing the entrepreneur for the agency-deficit flaw. See Fig. 3, Panel A.

### 9.2.3. Mediation by psychological closeness

Next, we examined psychological closeness using the same procedures. The interaction between flaw type and the variable indicating investors' own agreement that they possess the agency-excess flaw was significant,  $F(2, 1590) = 7.97$ ,  $p < 0.001$ , Cohen's  $f = 0.09$ . When investors strongly agreed that they possessed the agency-excess flaw, investors did not report significantly more psychological closeness to an agency-excess (vs. non-flawed) entrepreneur,  $B_{\text{Simple Effect}} = 0.09$ , 95 % CI: [-0.29, 0.48],  $SE = 0.20$ ,  $t(1590) = 0.49$ ,  $p = 0.627$ . Thus, entrepreneurs disclosing agency-excess flaws did not cultivate greater psychological closeness, even among similar investors. When investors strongly disagreed that they possessed the agency-excess flaw, investors felt less psychologically close to an agency-excess (vs. non-flawed) entrepreneur,  $B_{\text{Simple Effect}} = -0.70$ , 95 % CI: [-0.59, -0.27],  $SE = 0.07$ ,  $t(1596) = -9.58$ ,  $p < 0.001$ .

The interaction was also significant for agency-deficit flaws,  $F(2, 1590) = 39.53$ ,  $p < 0.001$ , Cohen's  $f = 0.21$ . When investors strongly agreed that they possessed an agency-deficit flaw, investors felt psychologically closer to the agency-deficit (vs. non-flawed) entrepreneur,  $B_{\text{Simple Effect}} = 1.02$ , 95 % CI: [0.80, 1.24],  $SE = 0.11$ ,  $t(1590) = 9.25$ ,  $p < 0.001$ , showing that disclosing agency-deficit flaws cultivated psychological closeness with similar investors who possessed that same flaw. When investors strongly disagreed that they possessed an agency-deficit flaw, investors felt less close to the agency-deficit (vs. non-flawed) entrepreneurs,  $B = -0.49$ , 95 % CI: [-0.67, -0.31],  $SE = 0.09$ ,  $t(1590) = -5.41$ ,  $p < 0.001$ . See Fig. 3, Panel B.

Then, in moderated mediation analyses, we examined psychological closeness as a mechanism. Supporting Hypothesis 5, the 95 % CI for the index of moderated mediation did not include zero: [0.048, 0.078]. See Fig. 4. Examining conditional indirect effects using a bootstrapping approach with 5,000 resamples revealed that when investors at least

<sup>12</sup> These two measures were highly correlated,  $r(1594) = 0.76$ ,  $p < 0.001$ , thus we present the results from the three-item measure in the main manuscript and the results from the circles-overlap item (which generally revealed similar results) in Appendix H.

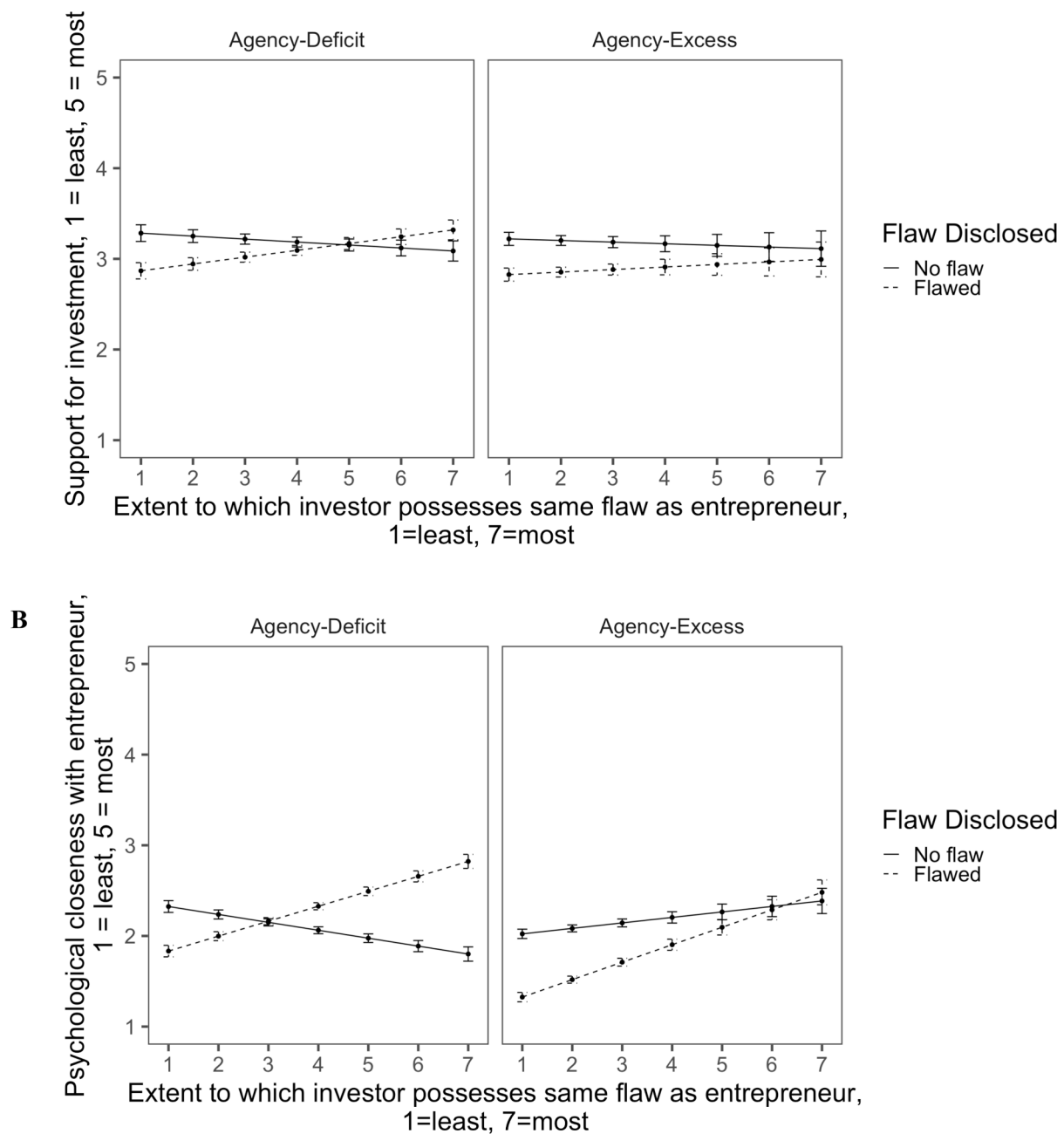


Fig. 3. Potential investors’ championing for investment in (Panel A) and psychological closeness to (Panel B) an entrepreneur, dependent on flaw disclosure and investor flaw similarity (Study 3). Note. Error bars represent the standard error of the mean. N = 1,596 participants.

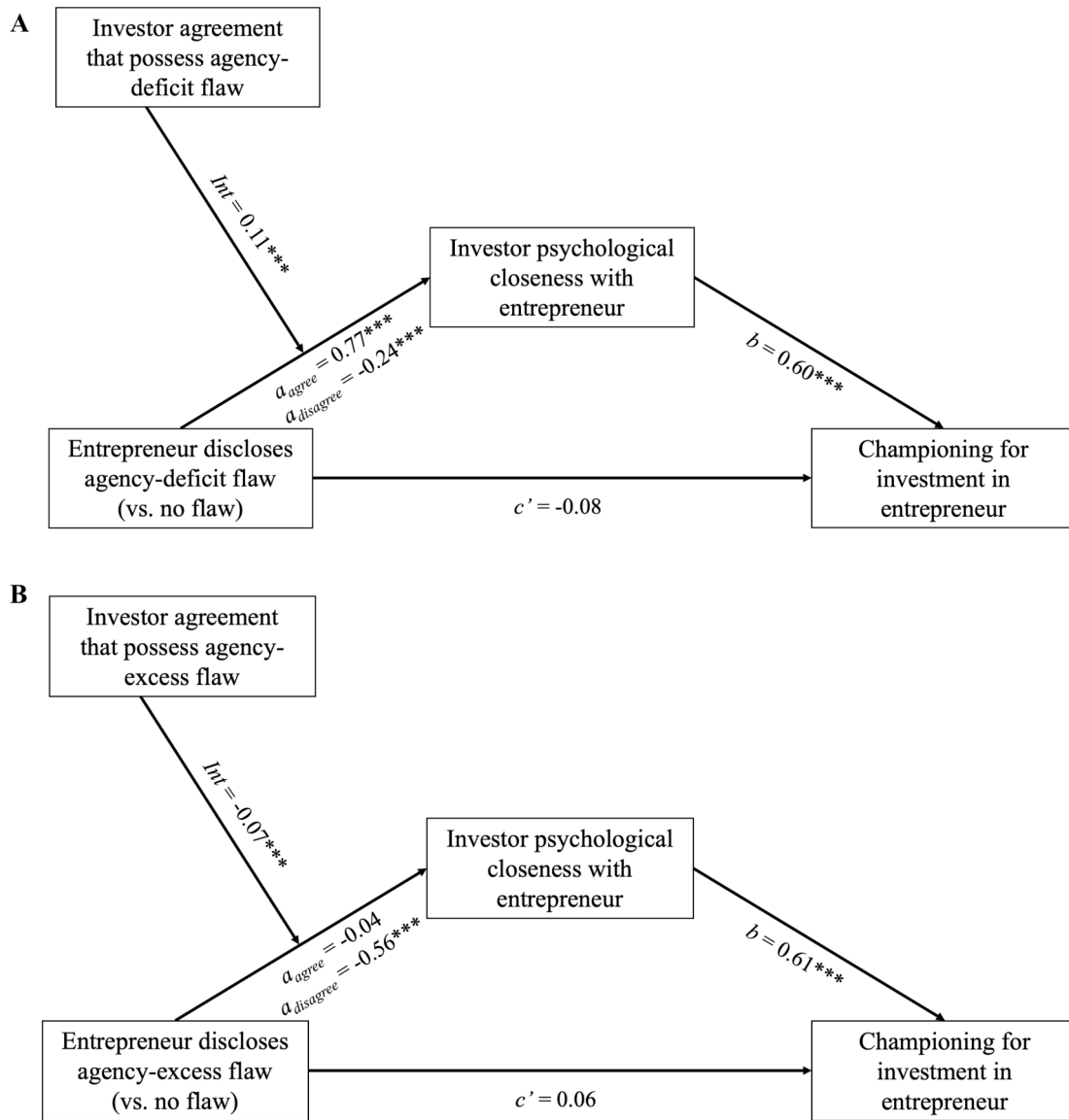
slightly agreed that they possessed the same agency-deficit flaw that the entrepreneur disclosed, they felt greater psychological closeness with this entrepreneur, which led them to champion investment for this entrepreneur more strongly. In contrast, when investors *slightly* disagreed that they possessed the same agency-deficit flaw as the entrepreneur, there was not a significant indirect effect (i.e., investors appeared indifferent to flaw disclosure) and when investors *strongly* disagreed that they possessed the same agency-deficit flaw as the entrepreneur, they felt less psychological closeness with the entrepreneur, which led them to less strongly champion for investment. See Table 6. Robustness checks further supported these results (Appendix I).

Notably, the pattern was different for the agency-excess flaw. The 95 % CI for the index of moderated mediation did not include zero and was in the *opposite* direction as the effect observed for agency-deficit flaws: [-0.059, -0.030]. Examining conditional indirect effects using a

bootstrapping approach with 5,000 resamples revealed that when investors at least slightly agreed that they possessed the same agency-excess flaw that the entrepreneur disclosed, they did not feel greater psychological closeness with this entrepreneur and did not champion investment more strongly. However, when investors even *slightly* disagreed that they possessed the same agency-excess flaw as the entrepreneur, they felt less psychological closeness with the entrepreneur, which led them to decrease championing for investment. See Fig. 4 and Table 6.

9.2.4. Alternate mechanisms

We examined three alternate mechanisms that could explain the effects of agency-deficit flaw disclosure (authenticity, competence, warmth). For authenticity, there was not a significant interaction between agency-deficit flaw disclosure (vs. no flaw disclosure) and



**Fig. 4.** Moderated mediation analysis for Study 3: Effects for disclosure of agency-deficit flaws (Panel A) and disclosure of agency-excess flaws (Panel B). *Note.*  $a_{agree}$  represents the effect of the flaw disclosure on the mediator (psychological closeness) when investors agreed that they possessed the same flaw (i.e., selected a “6” or “agree” on the scale) and  $a_{disagree}$  represents the effect of the flaw disclosure on the mediator (psychological closeness) when investors disagreed that they possessed the same flaw (i.e., selected a “2” or “disagree” on the scale).

**Table 6**  
Moderated mediation analysis: Conditional indirect effect of flaw disclosure on championing investment in an entrepreneur via psychological closeness at different values of investor flaw similarity (Study 3).

Moderator value: Flaw similarity	Effect	LLCI	ULCI
<b>Disclose agency-deficit flaw (vs. no flaw)</b>			
7 (strongly agree possesses flaw)	<b>0.61</b>	<b>0.46</b>	<b>0.76</b>
5 (slightly agree possesses flaw)	<b>0.31</b>	<b>0.23</b>	<b>0.40</b>
3 (slightly disagree possesses flaw)	0.01	-0.06	0.08
1 (strongly disagree possesses flaw)	-0.29	-0.42	-0.18
<b>Disclose agency-excess flaw (vs. no flaw)</b>			
7 (strongly agree possesses flaw)	0.06	-0.21	0.34
5 (slightly agree possesses flaw)	-0.10	-0.28	0.07
3 (slightly disagree possesses flaw)	-0.26	-0.35	-0.18
1 (strongly disagree possesses flaw)	-0.42	-0.52	-0.33

*Note.* Bold numbers indicate those effects whose 95 % confidence intervals did not include zero. LLCI = lower limit of 95 % confidence interval; ULCI = upper limit of 95 % confidence interval. 95 % confidence intervals were calculated using bootstrapping with 5,000 resamples.

investors’ agreement that they possess the agency-deficit flaw,  $F(2, 1590) = 1.16, p = 0.315$ , Cohen’s  $f = 0.04$ . For competence, the interaction also did not reach conventional significance thresholds,  $F(2, 1590) = 2.83, p = 0.059$ , Cohen’s  $f = 0.06$ . For warmth, there was a significant interaction,  $F(2, 1590) = 4.43, p = 0.012$ , Cohen’s  $f = 0.06$ , such that when investors strongly agreed that they possessed an agency-deficit flaw, investors felt that the agency-deficit (vs. non-flawed) entrepreneur was warmer,  $B = 0.23$ , 95 % CI: [0.03, 0.44],  $SE = 0.11$ ,  $t(1590) = 2.20, p = 0.028$ , while when investors strongly disagreed that they possessed an agency-deficit flaw, they felt that the entrepreneur who disclosed the agency-deficit flaw was somewhat but non-significantly less warm than the entrepreneur who exposed no flaw,  $B = -0.15$ , 95 % CI: [-0.32, 0.02],  $SE = 0.09$ ,  $t(1590) = -1.76, p = 0.079$ . This pattern of effects is sensible, given that psychological closeness relates to a more connected relationship that could facilitate greater perceptions of general warmth; indeed, these measures were moderately correlated ( $r = 0.59$ ) and to a stronger degree than psychological closeness and authenticity or competence (see Table 5). Importantly, however, effects on psychological closeness held when controlling for

warmth (i.e., the interaction predicting psychological closeness with the flaw type variable and investors' agreement that they possessed this same flaw remained significant when controlling for warmth,  $F(2, 1589) = 41.93, p < 0.001$ , Cohen's  $f = 0.18$ ).

### 9.3. Discussion

Study 3 revealed significant indirect effects such that an entrepreneur disclosing an agency-deficit flaw elicited investment from similar, but not dissimilar, potential investors, by fostering a greater sense of psychological closeness with this entrepreneur. As in the previous study, we found that disclosing agency-excess flaw did not elicit investment even from similar investors, and rather tended to repel dissimilar investors.

## 10. Study 4

Study 4 was a preregistered study (<https://osf.io/vapxj/>) which replicated the findings of Study 3 using different examples of agency-deficit and agency-excess flaws.

### 10.1. Method

#### 10.1.1. Procedure and participants

Procedures were the same as in Study 3, except that participants evaluated a different agency-excess flaw (being a control freak, e.g., "I'm a control freak. It's one of my biggest flaws. I can be overbearing sometimes"), a different agency-deficit flaw (being disorganized, e.g., "I'm a disorganized person. It's one of my biggest flaws. I can be chaotic sometimes"), or the same non-flaw disclosure as in Study 3. See Appendix J for materials. We recruited 2,015 U.S. participants on CloudResearch Connect. 1,567 participants passed an attention check (77.8%), leading to a final sample including 739 (47.2%) women and 821 (52.4%) men.

#### 10.1.2. Measures

Means, standard deviations, and correlations between all measures are in Table 7.

**10.1.2.1. Participants' flaw self-categorization.** Following the same procedures as Study 3, participants rated the extent to which they possess the relevant agency-excess flaw (i.e., "I see myself as controlling and overbearing") and the relevant agency-deficit flaw (i.e., "I see myself as disorganized and chaotic") (1 = strongly disagree, 7 = strongly agree).

**10.1.2.2. Investments.** Participants responded to the same question as in Study 3.

**10.1.2.3. Psychological closeness with the entrepreneur.** Participants again completed the circles-overlap measure and the three-item measure ( $\alpha = 0.87, \omega = 0.87$ ).<sup>13</sup>

**10.1.2.4. Entrepreneur authenticity, warmth, and competence.** As in Study 3, we measured perceptions of authenticity ( $\alpha = 0.76, \omega = 0.78$ ), warmth ( $r = 0.70$ ), and competence ( $r = 0.62$ ).

## 10.2. Results

### 10.2.1. Effects of flaw type

First, we tested whether flaw type was related to investment. We

<sup>13</sup> We again present the three-item measure in the main manuscript and the circles-overlap item, which revealed a similar though weaker pattern of results, in Appendix K.

predicted investors' ratings that the start-up should receive the \$100 investment with a variable indicating flaw type, including two dummy codes to omit the "no flaw" condition as the reference group and compare it with the first, to the entrepreneurs who disclosed an agency-excess flaw and with the second, to the entrepreneurs who disclosed an agency-deficit flaw. Flaw disclosure predicted investment decisions,  $F(2, 1564) = 12.90, p < 0.001$ , Cohen's  $f = 0.13$ . Investors less strongly championed for investment in the entrepreneur who disclosed the agency-excess flaw ( $M = 2.94, SD = 1.19$ ) relative to the control ( $M = 3.16, SD = 1.19$ ),  $B = -0.21, 95\% \text{ CI: } [-0.36, -0.07], SE = 0.07, t(1564) = -2.90, p = 0.004$ , Cohen's  $d = -0.18$ ; they were also less likely to champion for investment in the entrepreneur who disclosed the agency-deficit flaw ( $M = 2.78, SD = 1.19$ ) relative to the control ( $M = 3.16, SD = 1.19$ ),  $B = -0.37, 95\% \text{ CI: } [-0.51, -0.23], SE = 0.07, t(1564) = -5.06, p < 0.001$ , Cohen's  $d = -0.31$ , thus partially supporting Hypothesis 2 but showing the opposite effect as predicted for agency-deficit flaws.

### 10.2.2. Moderation by investor flaw similarity

Would investors' own flaws shape their responses to agency-excess and agency-deficit flaw disclosures (Hypotheses 3 and 4)? First, we predicted investors' ratings championing investment with the variable indicating the type of flaw which the entrepreneur disclosed, investors' own agreement that they possess the agency-excess flaw, and the interaction between these two variables. A significant interaction would indicate that agency-excess flaw disclosure effects were moderated by investors' flaw similarity. As in Study 3, the interaction was not significant,  $F(2, 1561) = 0.16, p = 0.853$ , Cohen's  $f = 0.01$ , in line with Hypothesis 3.

Second, we predicted investors' ratings championing investment with the variable indicating the type of flaw which the entrepreneur disclosed, investors' own agreement that they possess the agency-deficit flaw, and the interaction between these two variables. As in Study 3, the interaction was significant,  $F(2, 1561) = 6.10, p = 0.002$ , Cohen's  $f = 0.09$ , indicating that agency-deficit flaw disclosure effects were moderated by investors' flaw similarity and in line with Hypothesis 4. When investors strongly agreed that they possessed the agency-deficit flaw, investors did not differ in their evaluations of the agency-deficit (vs. non-flawed) entrepreneur,  $B = 0.09, 95\% \text{ CI: } [-0.28, 0.45], SE = 0.19, t(1561) = 0.46, p = 0.648$ , while when investors strongly disagreed that they possessed the agency-deficit flaw, investors less strongly championed investment in the agency-deficit entrepreneur relative to the non-flawed entrepreneur,  $B = -0.60, 95\% \text{ CI: } [-0.82, -0.38], SE = 0.11, t(1561) = -5.33, p < 0.001$ . Thus, it again appeared that possessing the same flaw prevented investors from otherwise penalizing the entrepreneur for the agency-deficit flaw. See Fig. 5, Panel A.

### 10.2.3. Mediation by psychological closeness

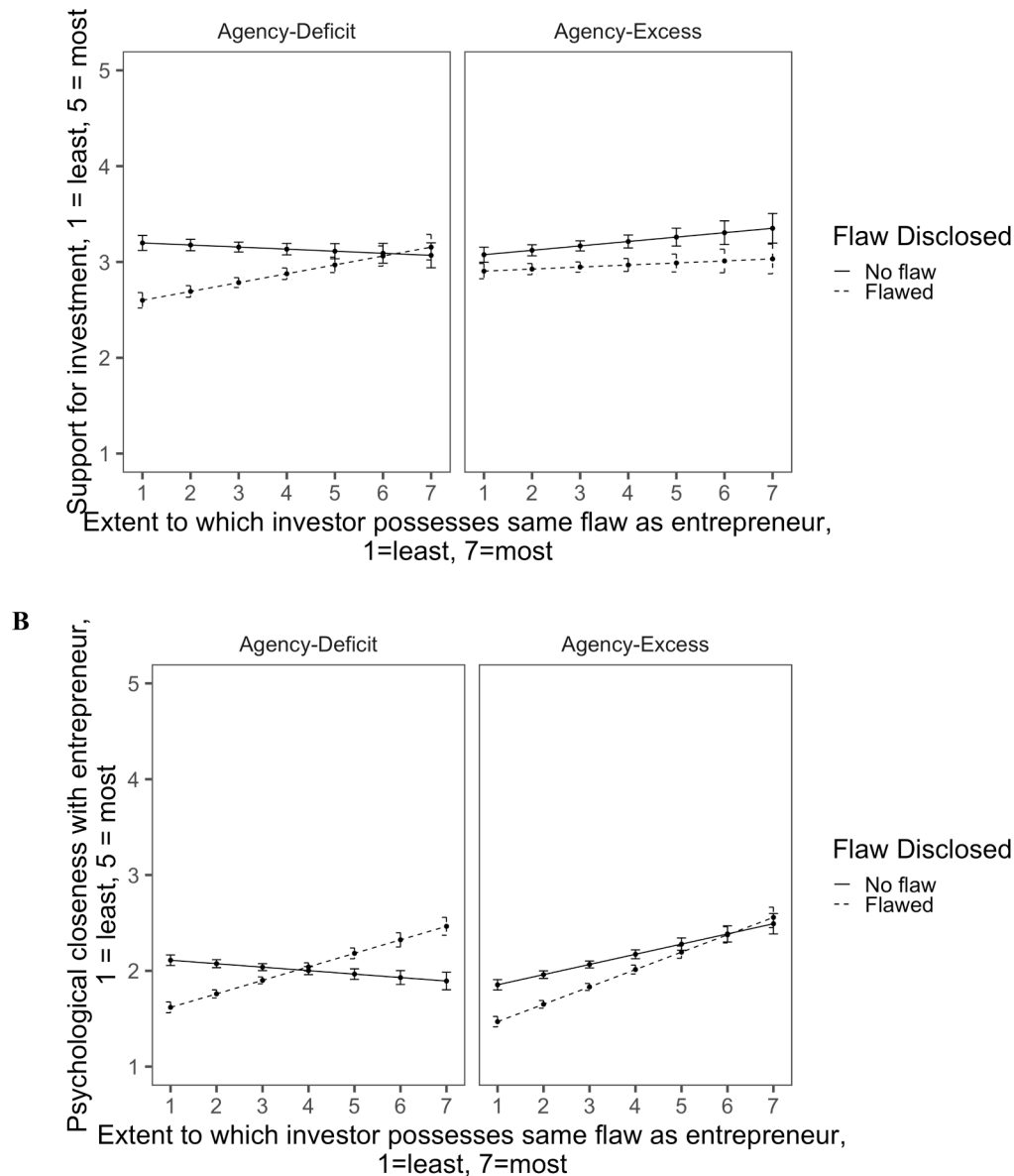
Next, we examined psychological closeness using the same procedures. The interaction between flaw type and the variable indicating investors' own agreement that they possess the agency-excess flaw was significant,  $F(2, 1561) = 3.23, p = 0.040$ , Cohen's  $f = 0.06$ . When investors strongly agreed that they possessed the agency-excess flaw, investors did not report significantly more psychological closeness to an agency-excess (vs. non-flawed) entrepreneur,  $B_{\text{Simple Effect}} = 0.07, 95\% \text{ CI: } [-0.23, 0.36], SE = 0.15, t(1561) = 0.44, p = 0.660$ . Thus, entrepreneurs disclosing agency-excess flaws again did not cultivate greater psychological closeness, even among similar investors. When investors strongly disagreed that they possessed the agency-excess flaw, investors felt less psychologically close to an agency-excess (vs. non-flawed) entrepreneur,  $B_{\text{Simple Effect}} = -0.38, 95\% \text{ CI: } [-0.54, -0.23], SE = 0.08, t(1561) = -5.00, p < 0.001$ .

The interaction was also significant for agency-deficit flaws,  $F(2, 1561) = 18.34, p < 0.001$ , Cohen's  $f = 0.15$ . When investors strongly agreed that they possessed an agency-deficit flaw, investors felt psychologically closer to the agency-deficit (vs. non-flawed) entrepreneur,  $B_{\text{Simple Effect}} = 0.57, 95\% \text{ CI: } [0.32, 0.83], SE = 0.13, t(1561) = 4.38, p <$

**Table 7**  
Means, standard deviations, and correlations (Study 4).

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10
1. Type of flaw	-0.01	0.81										
2. Likelihood of investment	2.96	1.20	0.05*									
3. Investor disorganization	2.99	1.71	-0.00	0.01								
4. Investor controlling	2.78	1.54	-0.03	.04 <sup>+</sup>	0.14***							
5. Psychological closeness (3-item)	1.91	0.85	-0.05*	0.44***	0.08*	0.24***						
6. Psychological closeness (circles)	2.11	1.23	-0.03	0.35***	0.06*	0.21***	0.73***					
7. Authenticity	3.57	0.75	-0.10***	0.37***	-0.12***	-0.03	0.35***	0.31***				
8. Warmth	2.84	0.85	-0.32***	0.30***	-.04 <sup>+</sup>	0.05*	0.48***	0.39***	0.49***			
9. Competence	3.33	0.76	0.12***	0.46***	-0.06*	-0.07**	0.35***	0.31***	0.52***	0.37***		
10. Age	37.76	11.57	0.02	0.03	-0.14***	-0.11***	-0.03	-0.01	0.12***	.05 <sup>+</sup>	0.08**	
11. Gender	0.48	0.50	0.03	0.06*	-0.04	-0.09***	-0.02	-0.08**	0.06*	-0.01	0.12***	0.08***

Note. <sup>+</sup> indicates  $p < 0.10$ , \* indicates  $p < 0.05$ , \*\*\* indicates  $p < 0.001$ . *M* and *SD* are used to represent mean and standard deviation, respectively. *Type of flaw* was coded such that -1 = agency-deficit flaw, 0 = no flaw, 1 = agency-excess flaw. *Gender* was coded such that 0 = man, 1 = woman.



**Fig. 5.** Potential investors' championing for investment in (Panel A) and psychological closeness to (Panel B) an entrepreneur, dependent on flaw disclosure and investor flaw similarity (Study 4). Note. Error bars represent the standard error of the mean.  $N = 1,567$  participants.

0.001; disclosing agency-deficit flaws again cultivated psychological closeness with similar investors. When investors strongly disagreed that they possessed an agency-deficit flaw, investors felt *less* close to the agency-deficit (vs. non-flawed) entrepreneurs,  $B = -0.49$ , 95 % CI:  $[-0.65, -0.34]$ ,  $SE = 0.08$ ,  $t(1561) = -6.26$ ,  $p < 0.001$ . See Fig. 5, Panel B.

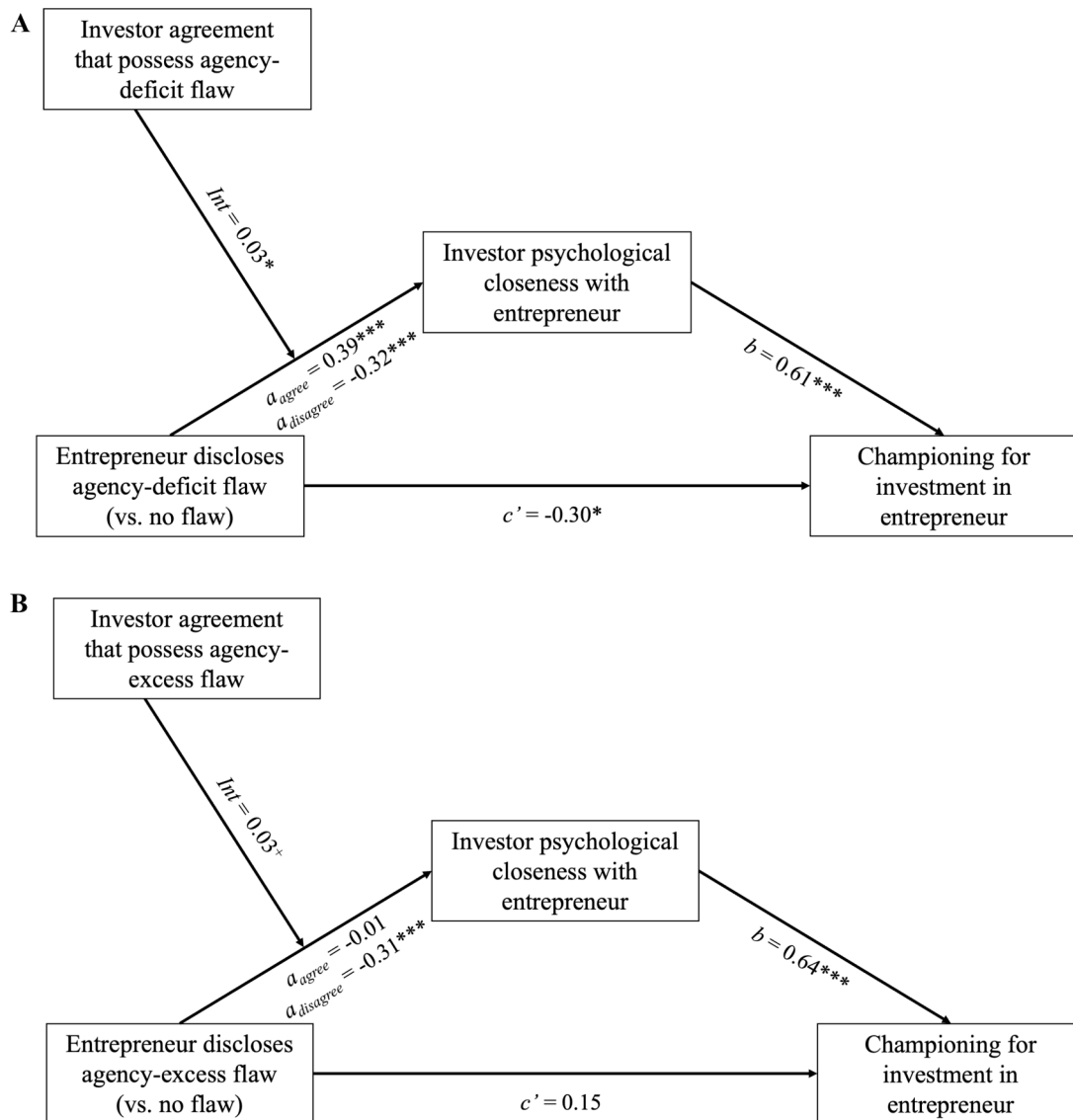
Then, in moderated mediation analyses, we examined psychological closeness as a mechanism. Supporting Hypothesis 5, the 95 % CI for the index of moderated mediation did not include zero:  $[0.005, 0.037]$ . See Fig. 6. Examining conditional indirect effects using a bootstrapping approach with 5,000 resamples revealed that when investors agreed that they possessed the same agency-deficit flaw that the entrepreneur disclosed, they felt greater psychological closeness with this entrepreneur, which led them to champion investment more strongly. In contrast, as soon as investors *slightly* disagreed that they possessed the same agency-deficit flaw as the entrepreneur, they felt less psychological closeness with the entrepreneur, which led them to decrease championing for investment. See Table 8. Robustness checks further supported these results (Appendix L).

**Table 8**

Moderated mediation analysis: Conditional indirect effect of flaw disclosure on championing investment in an entrepreneur via psychological closeness at different values of investor flaw similarity (Study 4).

Moderator value: Flaw similarity	Effect	LLCI	ULCI
<b>Disclose agency-deficit flaw (vs. no flaw)</b>			
7 (strongly agree possesses flaw)	<b>0.35</b>	<b>0.18</b>	<b>0.52</b>
5 (slightly agree possesses flaw)	<b>0.13</b>	<b>0.03</b>	<b>0.24</b>
3 (slightly disagree possesses flaw)	<b>-0.08</b>	<b>-0.15</b>	<b>-0.02</b>
1 (strongly disagree possesses flaw)	<b>-0.30</b>	<b>-0.41</b>	<b>-0.20</b>
<b>Disclose agency-excess flaw (vs. no flaw)</b>			
7 (strongly agree possesses flaw)	0.04	-0.19	0.27
5 (slightly agree possesses flaw)	-0.05	-0.19	0.08
3 (slightly disagree possesses flaw)	<b>-0.15</b>	<b>-0.22</b>	<b>-0.08</b>
1 (strongly disagree possesses flaw)	<b>-0.24</b>	<b>-0.35</b>	<b>-0.15</b>

Note. Bold numbers indicate those effects whose 95 % confidence intervals did not include zero. LLCI = lower limit of 95 % confidence interval; ULCI = upper limit of 95 % confidence interval. 95 % confidence intervals were calculated using bootstrapping with 5,000 resamples.



**Fig. 6.** Moderated mediation analysis for Study 4: Effects for disclosure of agency-deficit flaws (Panel A) and disclosure of agency-excess flaws (Panel B). Note.  $a_{agree}$  represents the effect of the flaw disclosure on the mediator (psychological closeness) when investors agreed that they possessed the same flaw (i.e., selected a “6” or “agree” on the scale) and  $a_{disagree}$  represents the effect of the flaw disclosure on the mediator (psychological closeness) when investors disagreed that they possessed the same flaw (i.e., selected a “2” or “disagree” on the scale).

Notably, the pattern was different when examining the agency-excess flaw. The 95 % CI for the index of moderated mediation included zero: [-0.002, 0.034], indicating (in contrast to Study 3) that there was not moderated mediation. See Fig. 6 and Table 8 for conditional indirect effects.

#### 10.2.4. Alternate mechanisms

We examined three alternate mechanisms that could explain the effects of agency-deficit flaw disclosure (authenticity, competence, warmth). For authenticity, there was not a significant interaction between agency-deficit flaw disclosure (vs. no flaw disclosure) and investors' agreement that they possess the agency-deficit flaw,  $F(2, 1561) = 0.41, p = 0.662$ , Cohen's  $f = 0.02$ , nor was there for warmth,  $F(2, 1561) = 2.10, p = 0.123$ , Cohen's  $f = 0.06$ . For competence, the interaction was significant,  $F(2, 1561) = 4.15, p = 0.016$ , Cohen's  $f = 0.07$ , such that when investors strongly agreed that they possessed an agency-deficit flaw, investors felt that the agency-deficit (vs. non-flawed) entrepreneur was no less competent,  $B = 0.02$ , 95 % CI: [-0.21, 0.25],  $SE = 0.12, t(1561) = 0.15, p = 0.881$ , while when investors strongly disagreed that they possessed an agency-deficit flaw, they felt that the entrepreneur who disclosed the agency-deficit flaw was less competent than the entrepreneur who exposed no flaw,  $B = -0.28$ , 95 % CI: [-0.42, -0.14],  $SE = 0.07, t(1561) = -3.91, p < 0.001$ . Thus, unexpectedly, investors possessing the same agency-deficit flaw the entrepreneur disclosed buffered the entrepreneur against otherwise downgraded competence. Importantly, however, effects on psychological closeness held when controlling for competence (i.e., the interaction predicting psychological closeness with the flaw type variable and investors' agreement that they possessed this same flaw remained significant when controlling for competence,  $F(2, 1560) = 16.02, p < 0.001$ , Cohen's  $f = 0.13$ ).

#### 10.3. Discussion

Employing different examples of agency-deficit and agency-excess flaws, Study 4 again revealed significant indirect effects that an entrepreneur disclosing an agency-deficit flaw elicited investment from similar, but not dissimilar, potential investors, by fostering a greater sense of psychological closeness with this entrepreneur. Again, disclosing agency-excess flaw did not cultivate psychological closeness even among similar investors.

### 11. General discussion

To understand when being open about one's "whole self"-imperfections and all-confers benefits or drawbacks in entrepreneurship, we examined how entrepreneurs' flaw disclosures shaped investment in their crowdfunding pitches. Building new theory relevant to the increasingly popular notion that conveying personal flaws wins people over, we suggested that the effects of flaw disclosure depend on the type of flaw that is disclosed and on whether an investor possesses that same flaw. We found support for our theorizing that only the disclosure of agency-deficit flaws can bring benefits, yet only under select circumstances. We saw that entrepreneurs disclosing agency-deficit flaws, which indicate that a discloser views themselves as inferior to others, built more psychological closeness with investors who, too, possessed the same agency-deficit flaw, sometimes resulting in greater investment from these similar investors and at least not undermining it. However, disclosing agency-deficit flaws sometimes backfired among dissimilar investors. In contrast, when entrepreneurs disclosed agency-excess flaws, which indicate that a discloser views themselves as superior to others, it never elicited greater psychological closeness or more investment, even from investors who possessed these same flaws (and who were mostly indifferent to their disclosure), while those who did not possess these same flaws showed an aversion to their disclosure.

#### 11.1. Theoretical implications

By building new theory that delineates whether and when disclosing negative qualities leads to positive reactions from investors, our research expands the entrepreneurial finance literature on crowdfunding. The literature has mainly considered how entrepreneurs signal positive personal qualities to attract investors, such as hope and optimism (Anglin et al., 2018), capability and commitment (Oo et al., 2019), or warmth and competence (Z. Wang et al., 2016). Yet this focus overlooks the fact that entrepreneurs may also advertise their negative qualities when they tell a more personal story about themselves, and that learning about entrepreneurs' negative personal qualities may constitute an important signal about entrepreneurs that affects investors' decision-making. We add a new perspective to the literature by showing that disclosing negative qualities does not always constitute a weakness that drives away investors – not all flaws are "fatal" (Maxwell et al., 2011). We show that distinct social comparison inferences are key in determining whether negative qualities can constitute a positive signal.

Our research also adds new perspectives on homophily in crowdfunding (Greenberg & Mollick, 2017; He et al., 2024). We focused on the consequences of possessing more negative similarities, versus the more benign or positive similarities focused on in past research, finding that shared negative similarities *can* be helpful, dependent flaw type. Further, we theorized and found support for the notion that not all similarities breed connection. Certain similarities (i.e., agency-excess flaws) are incapable of cultivating the psychological closeness that other similarities (i.e., agency-deficit flaws) do, and thus fail to attract even "birds of a feather" to invest, urging scholars of homophily to consider nuances around the nature of shared attributes.

Our research takes particular importance as the crowdfunding literature begins to incorporate the concept of authenticity (e.g., Radoynovska & King, 2019). The construct of authenticity has received growing attention in management scholarship and society, often with a focus on its positive aspects (Cha et al., 2019). Our research cautions, however, that expressing one's negative aspects openly may not always be received positively in entrepreneurship. Effects depend on both the specific nature of a disclosure and the audience's own attributes, illustrating that the effects of authenticity are nuanced and context-bound.<sup>14</sup>

#### 11.2. Limitations and future directions

We found mixed evidence for main effects of flaw type on investment (i.e., Hypothesis 2). For agency-deficit flaw disclosure, we found a small positive effect (Study 1), no overall effect (Studies 2 and 3), or a small negative effect (Study 4). For agency-excess flaw disclosure, we found either no overall effect (Studies 1 and 2) or a small negative effect (Studies 3 and 4). These findings suggest the need for further research that explores how disclosure of different specific flaws may increase, decrease, or have no effect on investment. Notably, the overall positive effect of agency-deficit flaws observed in Study 1 does not contradict Studies 2–4 or rule out Hypothesis 4 (i.e., that disclosing agency-deficit flaws selectively attracts similar investors), as it may be the case that Kickstarter investors tend to also possess agency-deficit flaws (a factor we could not observe in this study), thus leading to the overall positive effect observed on investment. The overall number of entrepreneurs who disclosed flaws in Study 1 was small (6.3 %), and very few entrepreneurs disclosed agency-excess flaws (<1 %), suggesting that most entrepreneurs do not readily advertise their weaknesses in the status quo. Our research thus sheds light on what might happen if entrepreneurs, perhaps encouraged by popular dialogues, begin to open up more about certain flaws, rather than describing a currently common phenomenon.

<sup>14</sup> See Appendix M for further discussion of a comparison to previous research on flaw disclosure and findings on authenticity in the current research.

Future research could explore investment contexts that involve longer partnerships, in contrast to the crowdfunding scenarios in our research. Perhaps when entrepreneurs interact with investors after funding decisions, the additional closeness resulting from disclosing agency-deficit flaws with similar investors pays dividends. Future studies could thus examine investment decisions that involve resources beyond money, such as personal interaction and mentoring.

### 11.3. Practical implications

Our research informs public dialogues that increasingly encourage individuals to share flaws in ways that may destigmatize “being imperfect” and make the world of work more compassionate. Our research adds important caveats to such discussions, cautioning that in the context of entrepreneurship, flaw disclosure cannot be regarded as an objective good, nor as a complete hazard. Rather, the effects of flaw disclosure are more nuanced; the nature of flaw disclosures matter, as well as the attributes of the audience. Indeed, our research does not advise entrepreneurs to disclose their flaws, suggesting that entrepreneurs may not benefit from broadly advertising them. Rather, our research suggests that disclosing flaws may be less harmful than the literature currently assumes and can sometimes confer an advantage, depending on the audience. Thus, entrepreneurs may wish to avoid getting swept up in the tides of the times that often paint being all-too-human as inspirational. Rather, entrepreneurs may benefit more from selective disclosure to investors whose experience of human failings may resonate with their own. Flaw disclosure, it appears, must be done skillfully, when one knows one’s audience.

### 11.4. Conclusion

It may be tempting to believe that lowering our masks to reveal our true self to others is always advantageous, even in costly settings like entrepreneurs seeking funding. After all, isn’t “honesty is the best policy” one of our most fundamental proverbs? Our research provides a more nuanced take. On the one hand, when one knows that one’s audience is a kindred spirit, openly disclosing one’s struggles of inferiority may create an alliance, or at least not be damaging. But on the other hand, being open about struggles of superiority—though these are also recognized as human failings—at best, leaves no impression on an investor, and at worst, may risk driving them away. Thus, if our research has one overriding message, it is that not all flaw disclosures are alike; as Aristotle noted centuries ago, “it is possible to go wrong in many ways” (Aristotle/Browne, 1889, p. 45) and the differences between flaws, as well as how flaws afflict one’s audience, shape what happens when entrepreneurs own up to their negative sides.

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### CRediT authorship contribution statement

**Lauren C. Howe:** Writing – review & editing, Writing – original draft, Visualization, Methodology, Investigation, Formal analysis, Conceptualization. **Jochen I. Menges:** Writing – review & editing, Conceptualization.

### Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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### Appendix A. Supplementary material

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.obhdp.2024.104388>.

### Data availability

Data is available in a public repository

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