ORIGINAL ARTICLE

Psychological disorder diagnosis is no cure for trait inferences bias

Sofia Jacinto[1,2] (iD) | João Niza Braga[3] | Marina Silva Ferreira[1] | Elizabeth C. Collins[1] | Anne C. Krendl[2] | Cara C. Lewis[2,4,5]

[1]ISCTE-Instituto Universitário de Lisboa, CIS-IUL, Lisboa, Portugal

[2]Department of Psychological and Brain Sciences, Indiana University, Bloomington, Indiana, USA

[3]Católica Lisbon School of Business and Economics, Universidade Católica Portuguesa, Lisboa, Portugal

[4]Group Health Research Institute, MacColl Center for Health Care Innovation, Indiana University Bloomington, Seattle University of Washington, Seattle, Washington, USA

[5]Department of Psychiatry and Behavioral Sciences, University of Washingtion, Seattle, Washington, USA

Correspondence
Sofia Jacinto, ISCTE-Instituto Universitário de Lisboa, CIS-IUL, Lisboa, Portugal.
Email: sofia.jacinto@fhnw.ch, ana.sofia.jacinto@iscte-iul.pt

FUNDING
Portuguese Foundation for Science and Technology, Grant/Award Number: FCT: SFRH/BD/101524/2014; Bial Foundation, Grant/Award Number: 85/14. Fundação Bial; Fundação para a Ciência e a Tecnologia.

Abstract

According to the Diagnostic and Statistical Manual of Mental Disorders, 5th edition, maladaptive behavior stemming from a psychological disorder should not be attributed to personality. Attribution of behavioral symptoms to personality may undermine treatment-seeking and therapy outcomes and increase the stigmatization of the mentally ill. Although people adjust dispositional inferences given contextual alternative causes, we propose that beliefs in the stability and controllability of mental illness could lead to confounded representations of personality and psychological disorders. In six studies we tested whether people adjust dispositional inferences given a psychological disorder as they do give a physical impairment. Participants made trait ratings from short behavioral descriptions and corresponding contextual accounts. When the putative cause for the behavior was a psychological disorder, people did not reduce the trait inference to the extent they did when the cause was a physical impairment, except when the psychological disorder was presented as controllable/unstable. This suggests a conflation of psychological disorders with personality.

1 | INTRODUCTION

People diagnosed with a psychological disorder are often treated as though (and sometimes believe) the disorder is part of their personality. This can lead to stigma and discrimination (Corrigan, 2005; Feldman & Crandall, 2007; Hinshaw, 2007; Patrick & Corrigan, 2005; Pescosolido et al., 1999) because of the negative associations with mental illness. The extent of this tendency is generally unstudied, as is the path to reducing the phenomenon. In the current research, we confirm the strength of the effect by comparing correction of the correspondence bias given a psychology disorder possible cause and a physical disability possible cause.

Standards for clinical psychological diagnosis and practice, such as the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.;

DSM-5; American Psychiatric Association, 2013), recommend that certain behaviors be categorized as symptoms of a specific disorder. Accordingly, the American Psychological Association (APA, Recognition of Psychotherapy Effectiveness, 2012) recognizes that psychotherapy has "the purpose of assisting people to modify their behaviors, cognitions, emotions, and/or other personal characteristics in directions that the participants deem desirable" as defined by Norcross (1990, pp. 218–220), suggesting that behavioral symptoms are situational phenomena, occurring in the present moment under specific circumstances. Psychological disorders may thus consist of contextual explanations for those behaviors and feelings, however, these standards leave unclear whether symptoms should be attributed to personality or to the disorder as a contextual condition. When psychological disorder diagnoses are not treated as contextual

explanations for a person's symptomatic behavior, the attribution of behavioral symptoms to an individual's personality is likely. For instance, while lack of energy or motivation are symptoms of depression (DSM-5; American Psychiatric Association, 2013), a depressed patient who describes spending the day lying on the couch may be erroneously perceived as lazy. Even in disorders that are highly associated with personality traits, such as the trait egocentricity in Narcissistic Personality Disorder (e.g., Watson et al., 2008), it is not clear that the tendency to behave and relate with others in a certain way should be attributed to personality rather than context. If such a disorder were to be controlled or overcome, presumably the behaviors associated with the personality trait would be reduced, potentially to such an extent that the person might no longer be considered egocentric by those interacting with them.

Investigating these potential attributions—mental illness symptoms being attributed to an individual's personality—is critical for understanding how stigma impacts treatment-seeking (Corrigan et al., 2014). Moreover, if therapists are prone to these kinds of attributions, it is conceivable that an inaccurate or unhelpful case conceptualization may emerge that would undermine the fit of the treatment plan and therapy outcomes (Eells et al., 2005). Research in psychotherapy has discussed the impact of therapists' initial impressions of clients in the psychotherapy process (Hill, 2005; Strupp, 1996). For instance, a recent study showed how clinicians infer hostility from clients' perfectionism, which leads to less favorable impressions about the client (Hewitt et al., 2020). Nonetheless, research has not tested the question of whether therapists differ from the general public in how they attribute the behavior of their clients (to personality or the disorder).

Stigmatized personality judgments in response to mental illness-associated behaviors are likely common, considering the spontaneous nature of inferring traits from behaviors (Uleman et al., 1996) without intention or awareness (e.g., Todorov & Uleman, 2002). Thus, while spending the day lying on the couch is most appropriately categorized as a behavioral symptom attributable to depression (in a person with depression), the behavior may be spontaneously attributed as a personality trait (e.g., "lazy"; Uleman et al., 1996). Literature has also shown that people often neglect situational factors and automatically attribute behaviors to personality (the correspondence bias; Gilbert, 2002; Gilbert & Jones, 1986; Gilbert & Malone, 1995; Jones & Harris, 1967). In making this attribution, the perceiver neglects alternative contextual explanations (e.g., the individual has a leg injury, just ran a marathon, or suffers from depression).

Prior work has shown that dispositional trait inferences can be adjusted when a contextual alternative cause for the behavior is made salient (Trope & Gaunt, 2000). For example, an individual may be perceived as less lazy for lying on the couch if her leg injury is made salient. However, these adjustments tend to be insufficient (Gilbert, 1998, 2002; Gilbert & Malone, 1995; Gilbert et al., 1988; Quattrone, 1982; Trope & Gaunt, 2000), leaving a weaker personality attribution (for a review, see Gawronski, 2004).

Considering the capacity to adjust trait inferences when a contextual cause is salient, a psychological disorder that is used as a contextual explanation for a behavior might lead to the same adjustment that, for instance, a physical impairment leads to. Thus, an individual who spends the day on the couch might not be assumed to be lazy if she has been diagnosed with depression. But do people generally, and experts in clinical psychology (therapists) in particular, use psychological disorders as contextual causes of behaviors to correct dispositional trait attributions? Mental illness is highly stigmatized (e.g., Hinshaw, 2007) and like other stigmatized groups, we expect dispositional attributions about people with mental illness to be stronger when compared to non-stigmatized groups (e.g., Pettigrew, 1979). Thus, we propose that dispositional attributions to mentally ill individuals should be particularly strong and hard to avoid. Because mental illness is psychological in nature and includes behavioral, emotional, and cognitive outcomes, it should be difficult to represent a psychological disorder diagnosis as a state, separate from the individual's stable personality. Rather, it is likely to be seen as stable and limited in controllability, which are characteristics that lead to higher stigmatization (Corrigan, 2005; Hegarty & Golden, 2008; Krendl & Freeman, 2017). Thus, we anticipate that individuals will be less likely to correct dispositional attributions for individuals with psychological as compared to physical disorders.

Because of its implications for treatment-seeking and treatment quality, it is particularly important to know whether this effect occurs among mental health providers (therapists). Despite efforts to enhance therapists' judgment and decision-making toolbox (e.g., Eells, 2011; Garb, 2005; Jacinto et al., 2018; Persons et al., 2013), the question of whether psychological disorder symptoms are seen as trait indicative behaviors, despite a diagnosis, has not been explored in this population.

1.1 | Paradigm and studies overview

To test our hypothesis that a psychological disorder leads to lower trait inference adjustment than a physical impairment, we developed an experimental paradigm that directly compares the trait inference adjustment produced by two contextual alternative causes, a physical impairment and a psychological disorder diagnosis. Based on previous research (e.g., Gilbert, 2002), we do not expect a complete adjustment of the trait inference in either case. However, if the diagnosed psychological disorder is treated as a contextual alternative attribution of the behavior, the level of trait inference should be similar to that of a physical impairment, or at least lower than when no plausible explanation is salient. The studies rely on the presentation of short vignettes, describing trait indicative behaviors that could equally likely be symptoms of a psychological disorder or physical impairment. The presentation of the vignette should automatically elicit a high trait inference. Then, by presenting a contextual causal attribution for the behavior, we can examine whether, and to what extent, psychological disorder diagnosis and physical impairment led to reductions in trait inferences (trait inference adjustment).

Six studies explored the role of psychological disorder diagnosis as a contextual alternative attribution for behavior. Studies 1 and 2 tested whether the psychological disorder diagnosis led to a similar

trait inference as did a physical impairment, both for lay participants (Study 1) and for experts in clinical psychology (Study 2). Studies 3 and 4 explored conditions that could potentially reduce trait inferences in the case of a psychological disorder diagnosis, including making the alternative causal attribution salient (Study 3) and placing the contextual attribution before the trait inference (Study 4). In Study 5, we explored whether participants conflated the trait inference and the psychological disorder diagnosis as causal explanations of the behavior. Finally, in Study 6 we examined whether reducing the perceived stability and increasing the perceived controllability of the psychological diagnosis increased trait inference adjustment.

2 | METHODS

2.1 | Pretest of trait/diagnosis vignettes

All studies used the same vignettes. We developed nine vignettes consisting of behavioral descriptions that indicate a trait and simultaneously match a behavioral symptom of a psychological disorder diagnosis, based on the criteria for psychological disorder diagnosis as defined by the DSM-5 (American Psychiatric Association, 2013), and a physical impairment. To develop the vignettes, we adapted the behavioral symptoms of psychological disorders as generally described by the DSM-5 (American Psychiatric Association, 2013) into concrete daily life behaviors. We selected behavioral symptoms that would be clearly associated with a specific automatic trait inference. We then validated these inferences in pilot testing (see below). Critically, the inference could be similarly associated with a psychological or physical disorder. For example: "Ana does not take her weekend walks and just lays on the couch most of the time; she keeps watching a show she does not like just to avoid getting up and pick up the remote control." This vignette indicates the trait "lazy", and also fits both a behavioral symptom of depression and a physical inability to move (e.g., due to an accident) (See Supplemental Materials).

The vignettes were pretested in three phases with a total of 70 participants. First, we asked 35 participants to form a personality impression and describe the person depicted in the vignette in one personality trait. We selected the traits (including synonyms) that were elicited by at least 70% of participants. Second, we pretested the vignettes again, asking the same 35 participants to rate how much the person described had the expected trait (1 = Not at all, 10 = Extremely). We selected the vignettes in which the expected trait was on average equal to or greater than 7 points. Finally, to ensure that there were consensual and accurate lay theories about the diagnoses, we pretested, with an additional 35 participants, the extent to which each vignette was a plausible description of the respective psychological disorder diagnosis ("Based on this description, how likely is it that Ana has depression?").

We then selected the six vignettes that best simultaneously indicated the trait and a matching psychological disorder diagnosis. All the vignettes reflected different traits and diagnoses and were presented in the participants' native language (Portuguese). The final vignettes paired: Depression—Lazy; Obsessive Compulsive Disorder—Perfectionist; Generalized Anxiety—Insecure; Paranoid Schizophrenia—Snooper; Narcissistic Personality Disorder—Egocentric; Agoraphobia—Fearful. For all studies, measures and manipulations are reported.

3 | STUDY 1

3.1 | Participants

One hundred and three participants[1] (M_{age} = 24 years, SD = 3.16 years), with no knowledge nor experience in clinical psychology, completed this experiment in exchange for a 5€ supermarket gift certificate. Participants were recruited from a pool of participants that had already gave their consent to be invited to participate in psychology studies[2] We included only participants who were Portuguese speaking and over 18; experiments were conducted in their native language. No participants were excluded.

3.2 | Procedure

At the lab, participants were presented with an informed consent form and told that the goal of the experiment was to better understand how people perceive others in different social situations. Participants were told that they could interrupt their participation at any moment and would still be compensated for their participation in the study. They were asked to complete the study at the computer and were told they would be presented with several descriptions of different individuals and asked to make judgments about each[3].

3.2.1 | Trait/diagnosis vignettes and attributions

For each of six trials, participants read one of the vignettes, followed by one of three types of information, manipulating possible causal inference—physical impairment, psychological disorder, or irrelevant

---

[1]We conducted power analyses to determine sample size. Based on a small effect size ($\eta_{partial}^2$ = 0.01), the minimum required sample size was N = 161; and based on a medium effect size ($\eta_{partial}^2$ = 0.06), the minimum required was N = 27 (Cohen, 1988; Miles & Shevlin, 2001). The sample size in Study 1 was determined based on these calculations, previous research and the available budget to compensate participants. For this and subsequent studies, there were no exclusions. For an ANOVA with repeated measures within factors, sensitivity power analysis at 80%, alpha = .05 and n = 103, estimates a minimum effect size of $\eta_{partial}^2$ = 0.22 for the within subject's factor.

[2]Most participants were college students or alumni who did not study Psychology (e.g., rather Humanities, Sociology, Engineering, Communication Sciences). Participants were sent an email informing them of the research opportunity at a specific time and place and invited to book a participation slot and attend if they wished. Gift certificates of 5€ are commonly used as compensation for participation in psychology studies when participants are asked to attend a special session in a specific location, which requires time and transportation expenses.

[3]For this and subsequent studies, no information regarding previous history of mental illness was requested, since trait inferences are basic and automatic processes that are expected to occur regardless past history of mental health (e.g, Krendl & Cassidy, 2017).

information (control condition). The control condition (e.g., *Ana eats cereal in the morning*) provided irrelevant information regarding the cause of the described behavior. The physical impairment condition (e.g., *Ana broke her leg last week*) described a physical impairment that could explain the behaviors. Finally, the psychological disorder condition (e.g., *Ana has depression*) presented a psychological disorder diagnosis that fit the behavioral symptoms of the vignette as an alternative causal explanation. Simply put, vignettes should cause a trait inference judgment that could be adjusted according to the attribution information provided following the vignette. Each participant observed two vignettes per attribution (cause) (irrelevant information, physical impairment or psychological disorder diagnosis). The six vignettes and respective attributions were presented in pseudorandom order across participants.

3.2.2 | Trait inference

After reading each vignette, participants were asked to rate how much the person could be described by the indicated trait ("*How lazy is* Ana?"; 0 = Not at all, 10 = Very much).

3.3 | RESULTS AND DISCUSSION

Trait inferences were entered into a repeated measures ANOVA with attribution condition (irrelevant information, physical impairment, psychological disorder diagnosis) as the independent variable. There was a main effect of attribution, $F(2,102) = 61.38$, $p < .001$, $\eta_{partial}^2 = 0.38$. As expected, in the physical impairment condition ($M = 5.43$, $SD = 1.99$), trait inferences were lower than in the irrelevant information condition ($M = 8.11$, $SD = 1.52$), $t(102) = 11.82$, $p < .001$, 95%, CI [2.23, 3.13]. In the psychological disorder diagnosis condition ($M = 6.64$, $SD = 2.09$) trait inferences were also lower than in the irrelevant information condition, $t(102) = 6.47$, $p < .001$, 95% CI [1.02, 1.93]. However, when compared to the physical impairment condition, the psychological disorder diagnosis condition led to higher trait inference (i.e., less adjustment), $t(102) = 4.47$, $p < .001$, 95% CI [0.67, 1.74]. Means for conditions in all studies are included in Table A1.

Thus, we observed that lay people made larger dispositional attributions when given a psychological disorder diagnosis as a possible alternative explanation than when given a physical impairment as a possible alternative explanation. However, there was some adjustment for the psychological diagnoses attribution in comparison with the irrelevant information condition.

4 | STUDY 2

Study 1 participants were lay people, which may explain the difference in weight given to physical impairments and psychological disorder diagnoses. Therapists, however, as experts in clinical

psychology, should be able to make more contextual attributions for symptoms, and lower dispositional inferences. Our goal for Study 2 was to test whether expertise in clinical psychology would lead to less disparity in dispositional attributions between psychological and physical conditions.

4.1 | Participants

Forty-three therapists,[4] Portuguese speaking, ($M_{age} = 31$ years, $SD = 8.08$ years) volunteered, without incentive, to participate in this online experiment. Participants were invited via the alumni mailing list and via a convenience method, in which participants were asked to invite their therapist colleagues to participate in the study. All participants reported having clinical practice experience. Participants' years of clinical psychology practice ranged from 0–6 months to 10–20 years, with the highest frequency of participants reporting 1–3 years of practice (49% of participants). We did not collect data regarding the types of cases in the therapists' caseload or their theoretical approach since all the clinics we contacted require that therapists have an eclectic and integrative background and practice, thereby allowing them to work with any type of case.

4.2 | Procedure

The methods for Study 2 were the same as described in Study 1[5]. However, this study was completed online. Participants were asked to complete the study in their clinical practice setting.

4.3 | RESULTS AND DISCUSSION

The repeated measures ANOVA with trait inferences resulted in a main effect of attribution, $F(2, 42) = 22.70$, $p < .001$, $\eta_{partial}^2 = 0.35$. As in Study 1, trait inferences were lower in the physical impairment condition ($M = 3.70$, $SD = 1.54$) than in the irrelevant information condition ($M = 6.20$, $SD = 1.33$), $t(42) = 11.00$, $p < .001$, 95% CI [2.05, 2.97] or the psychological disorder diagnosis condition ($M = 5.56$, $SD = 2.59$), $t(42) = 3.99$, $p < .001$, 95% CI [0.92, 2.80]. Psychological disorder diagnosis did not lead to significantly lower trait inferences than the irrelevant information condition, $t(42) = 1.54$, $p = .132$, 95%, CI [−0.2, 1.51].

These results replicate the main finding of Study 1: individuals, in this case therapists, made more dispositional attributions for individuals with psychological diagnoses than physical diagnoses. Critically, the results of Study 2 suggest that expertise, knowledge, and training in clinical psychology do not alleviate this tendency.

---

[4]We conducted power analyses to determine sample size of Study 2. Based on the effect size of Study 1 ($\eta_{partial}^2 = 0.38$), the minimum required sample size was $N = 6$. For an ANOVA with repeated measures, sensitivity power analysis at 80%, alpha = .05 and $n = 43$, estimates a minimum effect size of $\eta_{partial2} = .35$ for the within subject's factor.

[5]All the following studies used the materials and measures described in Study 1; and in all the following studies, the conditions were counterbalanced as in Study 1.

5 | STUDY 3

Previous research has found that contextual information has a greater impact on reducing dispositional trait inferences when that information is salient (Jones, 1990; Trope & Gaunt, 2000). Study 3 was designed to test whether increasing the salience of the contextual alternative explanation and thus the possibility to revise the judgment would facilitate the use of the contextual attribution, resulting in increased adjustment in the psychological disorder diagnosis condition.

5.1 | Participants

One hundred six participants, Portuguese speaking, without clinical expertise[6] (M_{age} = 24 years, SD = 5.5 years) completed this experiment in exchange for a 5€ supermarket gift certificate. Participants were recruited from the same pool of participants described in Study 1, the same inclusion criterion was applied (Portuguese native speakers) and no participants were excluded. Participants who completed Study 1 were not sent the invitation email to participate in this study.

5.2 | Procedure

In Study 3, rather than presenting the vignettes and attribution information together and asking participants to make one judgment, participants were presented the trait/diagnosis vignette and the attribution separately and were asked to make two trait inference judgments: the first after the vignette, and the second after the attribution information. For instance, participants were presented with the sentence "*Ana does not take her weekend walks and just lays on the couch most of the time; she keeps watching a show she does not like just to avoid getting up and pick up the remote control.*" and subsequently asked "How lazy is Ana?" Following this initial judgment, participants were provided attribution information "*Ana had an accident* (physical impairment account)/ *had depression* (diagnosis account)/ *ate cereal* (neutral information)." This was followed by the same trait inference judgment "How lazy is Ana?" With this design, we intended to increase the salience of the potential cause of the behavior. This design also afforded the opportunity to look directly at the amount of correction (post-pre contextual explanation ratings) participants made.

5.3 | RESULTS AND DISCUSSION

We first conducted the same repeated measure ANOVA (as described in Study 1) on the revised trait inference, the second judgment, which was made after the attribution was presented. We

found a main effect of attribution, $F(2, 105)$ = 44.24, $p < .001$, $\eta_{partial}^2$ = 0.30. Planned comparisons revealed that trait inferences were lower in the physical impairment condition (M = 4.85, SD = 1.73) than in the irrelevant information condition (M = 7.08, SD =1.75), $t(105)$ = 9.83, $p < 0.001$, 95% CI [1.78, 2.68] and the psychological disorder diagnosis condition (M = 6.59, SD = 2.24), $t(105)$ = 7.17, $p < .001$, 95% CI [1.26, 2.23]. Psychological disorder diagnosis condition did not differ significantly from the irrelevant information condition $t(105)$ = 1.75, p = .083, 95%, CI [−0.06, 1.03].

To directly test the trait inference adjustment between participants' first and second attributions, we computed the difference between the baseline trait inference (based on the vignette) and the revised trait inference (after learning the attribution).[7] Accordingly, a repeated measures ANOVA, with 3 conditions (irrelevant/physical impairment/diagnosis), revealed a main effect of attribution $F(2, 105)$ = 39.76, $p < .001$, $\eta_{partial}^2$ = 0.28. Planned comparisons showed there was more adjustment in the physical impairment condition (M = 2.80, SD = 1.93) than in irrelevant information condition (M = 0.51, SD = 1.48), $t(105)$ = 10.25, $p < .001$, 95% CI [1.85, 2.73]. Results also showed greater adjustment in physical impairment condition than in the psychological disorder diagnosis condition (M = 1.25, SD = 2.26), $t(105)$ = 5.57, $p < .001$, 95% CI [1.00, 2.10]. In addition, the psychological diagnosis condition led to more adjustment than the irrelevant information condition $t(105)$ = 2.63, p = .010, 95% CI [0.18, 1.29].

Our results suggest that increasing the salience of a contextual alternative attribution for the behavior may have facilitated trait inference adjustment when the behavior was explained by a psychological disorder diagnosis. However, the psychological disorder diagnosis still did not have an impact equal to that of a physical impairment.

6 | STUDY 4

In previous studies, we observed that, given a psychological disorder diagnosis, participants generally adjusted the trait inference less than they did for physical impairments. Study 4 examined whether trait inferences would be reduced when the behavior was initially attributed to the context—whether psychological disorder diagnosis or physical impairment—before the trait inference was made.

6.1 | Participants

Seventy-five Portuguese-speaking participants with no clinical expertise, (M_{age} =21 years, SD = 3.17 years) completed this study in

---

[6]We conducted power analyses to determine sample size of Studies 3 to 6. Based on the effect size of Study 2 ($\eta_{partial}^2$ = 0.35), the minimum required sample size was N = 7. For an ANOVA with repeated measures, sensitivity power analysis at 80%, alpha = .05 and n = 106, 75, 103, 101 (studies 3, 4, 5, and 6), estimates a minimum effect size of $\eta_{partial}^2$ = 0.22, .26, .22, and .22 (respectively) for the within subject's factor.

[7]In the first judgment, the trait inference ratings were based on the behavioral information of the vignettes, without the attribution. A repeated measures ANOVA, with 3 continuation conditions (irrelevant/physical impairment/diagnosis), revealed no effect of attribution $F < 1$ (information condition: M = 7.62, SD = 1.46; physical impairment condition: M = 7.71, SD = 1.52; and psychological disorder condition: M = 7.79, SD = 1.40).

exchange for a 5€ supermarket gift certificate. Participants were recruited from the same pool of participants described in Study 1, the same inclusion criterion was applied (Portuguese native speakers) and no participants were excluded. Participants who completed Studies 1 or 3 were not sent the invitation email to participate in this study.

6.2 | Procedure

To test Study 4's hypothesis, we reversed the order in which the materials were presented from previous studies. We first presented the attribution information—the behavior cause—followed by the trait/diagnosis indicative vignette. For instance, participants were presented with a sentence such as "*Ana had an accident* (physical impairment account)/*had depression* (diagnosis account)/*ate cereal* (neutral information)"; which was followed by the trait/diagnosis vignette, after which we asked for the trait inference. The goal of doing this was to guide the behavior attribution directly to the contextual cause, thereby only making personality a possible alternative cause. Because Study 3 showed that collecting two separate trait judgments did not affect the trait adjustments, we used the initial procedure described in Study 1, with materials reversed but only one trait judgment made.

6.3 | RESULTS AND DISCUSSION

The same repeated measures ANOVA resulted in a main effect of attribution, $F(2, 74) = 25.69$, $p < .001$, $\eta_{partial}^2 = 0.26$. Planned comparisons revealed trait inferences were lower in the physical impairment condition ($M = 5.24$, $SD = 1.50$) than in the irrelevant information condition ($M = 7.24$, $SD = 1.81$), $t(74) = 7.50$, $p < .001$, 95% CI [1.47, 2.53] and the psychological disorder diagnosis condition ($M = 6.15$, $SD = 2.28$), $t(74) = 3.26$, $p = .002$, 95% CI [0.35, 1.46]. In the psychological disorder condition, participants made significantly lower trait inferences than in the irrelevant information condition $t(74) = 3.74$, $p < .001$, 95%, CI [0.51, 1.68].

Presenting the potential causal reason for the behavior before the behavior itself did not seem to change the extent to which participants made trait inferences, as the pattern of results in Study 4 matched those in Studies 1–3, with overall means being in the same range, not lower. Although, participants use psychological disorder diagnosis as a potential causal explanation for the behavior (when compared to the irrelevant condition), the physical impairment information continued to be used to explain the behavior more than the psychological disorder diagnosis.

Trait inference reduction after a putative contextual cause is given suggests that personality and contextual causes are, to some extent, mutually exclusive (see Ahn & Bailenson, 1996; Fugelsang & Thompson, 2001; Laux et al., 2010). Therefore, we speculate that the results of Studies 1–4 indicate personality and psychological disorder diagnosis are not mutually exclusive accounts, as opposed to personality and physical impairment, which seem to be (more) mutually exclusive.

7 | STUDY 5

In Study 5, we tested the hypothesis that there is a causal conflation between psychological disorder and personality. Specifically, if personality and psychological disorder diagnosis are mutually exclusive alternative causes of the (inferred) trait, removing the contextual cause (psychological disorder) once the judgment is made should increase the attribution to personality, thus increasing the trait inference.

7.1 | Participants

One hundred and three psychology students, Portuguese speaking ($M_{age} = 21$ years, $SD = 5.05$ years) completed this study in exchange for course credit. Students, who were previously accepted to be invited to psychology studies, received an invitation email to participate in the psychology lab studies that were running during the semester.

7.2 | Procedure

Study 5 replicated Study 1, with the addition of a second trait inference judgment at the end, in which participants re-evaluated the trait in the absence of the contextual cue. Specifically, after the first trait inference judgment, we asked participants to make a trait inference revising their initial impression presuming no contextual causal explanation. For instance, "How lazy would Ana be if she had not had an accident (physical impairment account)/had depression (diagnosis account)/eaten cereal (neutral information), assuming she behaved in the same way?" Study 5 was completed in the psychology lab.

7.3 | RESULTS AND DISCUSSION

7.3.1 | First trait inference judgment

The repeated measures ANOVA conducted on the initial trait inference judgment resulted in a main effect of attribution, $F(2, 102) = 36.26$, $p < .001$, $\eta_{partial}^2 = 0.26$. As in previous studies, trait inferences were lower in the physical impairment condition ($M = 5.89$, $SD = 2.34$) than in the irrelevant information condition ($M = 7.87$, $SD = 1.30$), $t(102) = 9.27$, $p < .001$, 95% CI [1.56, 2.40], and the psychological disorder diagnosis condition ($M = 7.27$, $SD = 2.17$), $t(102) = 5.09$, $p < .001$, 95% CI [0.84, 1.92]. Additionally, psychological disorder did lead to lower trait inferences than irrelevant information condition $t(102) = 2.65$, $p = .009$, 95%, CI [0.15, 1.05].

7.3.2 | Second trait inference judgment

The repeated measures ANOVA conducted on the second trait inference judgment resulted in no main effect of attribution, $F(2, 102) = 1.50$, $p = .225$, $\eta_{partial}^2 = 0.02$ (irrelevant information condition: $M = 7.60$, $SD = 1.75$; physical impairment attribution: $M = 7.16$, $SD = 2.11$; psychological disorder diagnosis condition: $M = 7.29$, $SD = 2.28$). Planned comparisons showed that trait inference ratings in the physical impairment condition did not differ from ratings the irrelevant condition, $t(102) = 1.67$, $p = .099$, 95% CI [−0.09, 0.98], and in the psychological disorder condition, $t(102) = 0.52$, $p = .606$, 95% CI [−0.66, 0.38]. Trait inferences ratings in the psychological disorder condition also did not differ from the irrelevant condition, $t(102) = 1.19$, $p = .238$, 95% CI [−0.21, 0.83].

To directly test the trait inference adjustment across participants' first and second ratings, we computed the difference between the initial and the revised inferences. Accordingly, a repeated measures ANOVA, with 3 conditions (irrelevant/physical impairment/diagnosis) revealed a main effect of attribution, $F(2, 102) = 11.84$, $p < .001$, $\eta_{partial}^2 = 0.10$. Planned comparisons revealed that the adjustment for the physical impairment condition ($M = -1.26$, $SD = 2.97$) was, as suggested in the previous analysis, significantly larger than in the irrelevant condition ($M = 0.27$, $SD = 1.19$), $t(102) = 4.71$, $p < .001$, 95% CI [0.89, 2.18], and than in the psychological disorder condition ($M = -0.02$, $SD = 3.12$), $t(102) = 3.35$, $p = .001$, 95% CI [0.51, 1.98]. The adjustment in the psychological disorder condition did not differ from the adjustment in the irrelevant condition $t(102) = 0.96$, $p = .340$, 95% CI [0.89, 0.96].

The results show that only in the physical impairment condition did removing the causal information increase the trait inference. These results suggest that a psychological diagnosis is not a sufficient alternative attribution for behavior and thus support the hypothesis of a conflation between personality traits and psychological disorders as causal explanations of the behavior.

8 | STUDY 6

In the previous studies, we observed that participants generally did not adjust trait inferences based on a psychological disorder diagnosis, suggesting a causal conflation between phycological disorder diagnosis and personality. Literature on mental illness stigma has identified that the perceived stability and controllability of the stigmatizing condition influence stigma (Corrigan, 2005). In fact, both variables communicate whether there is an underlying belief that the stigmatized condition may cease. Following this reasoning, if psychological disorders function in the same way as other stigmas, participants' beliefs that the psychological disorder is likely to cease in the future should lead to lower trait inferences or more adjustment upon learning of the causal explanation of a psychological disorder diagnosis. Therefore, in Study 6 we added information to the psychological disorder condition that suggested that the condition would be likely to cease in the future.

8.1 | Participants

One hundred one Portuguese-speaking participants with no clinical expertise, ($M_{age} = 24.6$ years, $SD = 5.48$ years) completed this study in exchange for a 5€ supermarket gift certificate. Participants were recruited from the same pool of participants described in Study 1, the same inclusion criterion was applied (Portuguese native speakers) and no participants were excluded. Participants who completed Studies 1, 3, or 4 were not sent the invitation email to participate in this study.

8.2 | Procedure

To test Study 6's hypothesis, we used the initial procedure described in Study 1 and added, in the psychological disorder diagnosis condition, additional information stating that the person was currently enrolled in a treatment with a very high success rate that would likely lead to the cessation of the psychological disorder in approximately two months. This additional information implied that the person was seeking help (high controllability) and would be cured (low stability). Study 6 was completed in the psychology lab.

8.3 | RESULTS AND DISCUSSION

The repeated measures ANOVA on trait inferences resulted in a main effect of attribution, $F(2, 100) = 50.02$, $p < .001$, $\eta_{partial}^2 = 0.33$. Planned comparisons revealed trait inferences were lower in the physical impairment condition ($M = 5.38$, $SD = 2.12$) than in the irrelevant information condition ($M = 7.71$, $SD = 1.81$), $t(100) = 9.92$, $p < .001$, 95% CI [1.87, 2.80]. Contrary to previous studies, trait inferences in the physical impairment condition were not lower than in the psychological disorder condition ($M = 5.74$, $SD = 2.33$), $t(100) = -1.21$, $p = .229$, 95% CI [−0.95, 0.23]. Psychological disorder led to lower trait inferences than the irrelevant information condition, $t(100) = 7.07$, < 0.001, 95%, CI [1.42, 2.52].

In this study, the trait inference triggered in the psychological disorder condition was similar to that in the physical impairment condition, suggesting that the underlying belief that the psychological disorder would likely cease in the future—that it was not stable—reduced the tendency to make an attribution to personality, much as a physical impairment does.

9 | GENERAL DISCUSSION

According to clinical practice guidelines, some behaviors should be categorized as symptoms of a diagnosed psychological disorder (DSM-5, American Psychiatric Association, 2013), leaving unclear whether these symptoms should be attributed to personality or to the disorder as a contextual condition. Avoiding incorrect trait inferences may prove particularly difficult if personality and psychological

disorder diagnosis are conflated representations. The current set of studies tested this conflation, exploring whether the presence of a psychological disorder diagnosis led to adjustments of the trait inferences to the extent that a physical impairment did.

Across six studies, we found evidence for this causal conflation between personality and psychological disorder diagnosis. When the putative attribution for the behavior was a psychological disorder diagnosis, people did not reduce the negative trait inference to the extent they did when the cause for the behavior was a physical impairment. The tendency to adjust the trait inference more for a physical impairment than a psychological disorder held true for participants with expertise in clinical psychology (Study 2), when the salience of the alternative cause for the behavior was increased (Study 3), when the potential causal explanation was presented before the behavior (Study 4) and when participants were asked to consider how they would rate the trait if the causal explanation were not present (Study 5). Only in the case when participants were informed that the psychological disorder would likely cease in the next few months were the trait inferences based on a psychological disorder not significantly different than those made based on a physical impairment (Study 6; see Table A2 for a summary of the study design).

9.1 | Potential mechanisms and explanations

The observed conflation between personality traits and psychological disorders as causal explanations of the behavior suggests that psychological disorder diagnoses carry with them the attribution of enduring negative personality traits. This might be explained by the nature of the perceived causal relationship between psychological disorders and personality (e.g., de Kwaadsteniet & Hagmayer, 2018). Psychological disorders should be viewed as causing behavioral symptoms. However, it might be that psychological disorders are actually perceived as causing personality traits, or that personality traits are perceived to increase the proclivity for a psychological disorder, which manifests in behaviors. Such causal relations would then lead to high trait inferences from the behavior, even in the presence of a psychological disorder diagnosis. It is worth noting that the present research is based on the assumption that psychological disorders are contextual conditions. Therefore, attributing the associated symptoms to the individual's personality may represent a manifestation of the correspondence bias, in which the disorder is neglected as a potential contextual cause for the symptoms (Gilbert & Malone, 1995).

However, other perspectives posit that the tendency to make high trait inferences (i.e., the tendency to attribute psychological disorder symptoms to personality) may not necessarily expose bias. In fact, many studies have emphasized the high correlational associations between personality traits and psychopathology (Morey et al., 2012; Naragon-Gainey & Watson, 2011; Watson et al., 2008). There have been recent research efforts organizing clinical and psychopathology research into a new mental health paradigm, the Hierarchical Taxonomy of Psychopathology (HiTOP) model (Kotov et al., 2017).

In this new system, psychopathology occurs within the spectrum of a certain dimension, varying in degree from adaptive to maladaptive (e.g., social anxiety is a dimension that ranges from comfort in social interactions to distress in nearly all social situations) (see Kotov et al., 2017). In this model, maladaptive traits are considered symptoms that vary in their degree of maladaptiveness (along the spectrum) (Kotov et al., 2017), and are core criteria by which to classify the individual's psychopathology. Our results showing that high trait inferences are associated with psychological disorders seem to be in accordance with HiTOP, which may lead to the conclusion that behaviors/symptoms are attributable to personality and not to the context. However, in Study 6, additional information about the likely imminent cessation of the disorder led participants to make similar reductions in trait inferences in the psychological disorder condition as in the physical impairment condition. This result suggests that under certain conditions people will attribute behaviors/symptoms to the disorder as a contextual cause, at least when the cause is time limited. If personality traits were believed to be causing the disorder, trait inferences would not be adjusted (reduced) when the disorder ceased, since they would be part of the individual's personality. Instead, from study 6, it seems that knowing the disorder will end reduced personality attributions, thus reducing the correspondence bias. It is worth noting that, if disorders are causing behaviors/symptoms, removing the putative cause of the behavior (e.g., study 5) could lead to adjustment (reduction of) the trait inferences as in study 6, which was not observed: when, in the psychological diagnosis condition in Study 5, participants were asked to rate the trait level laziness of the target if the casual attribution were not true (i.e., she did not have depression), they did not adjust their trait inferences more than in the control condition.

The results from the six studies suggest there is a strong causal conflation between contextual psychological disorder and personality, that disappears when the disorder is deemed unstable/controllable, as shown by a reduction of the attribution to personality in favor of a contextual attribution of behaviors in that case only among those we tested. Based on this evidence, we argue that to classify disorders based on traits, even considering the spectrum from adaptive to maladaptive, implies an attribution of the disorder to the individual, which may lead to stigmatization.

Moreover, using traits to understand a series of symptoms may neglect the motivation underlying an individual's behavior. For example, the trait perfectionism may be relevant to understand the clinical expression and treatment of Obsessive Compulsive Disorder (OCD, as defined by American Psychiatric Association, 2013) (for a review, see Pinto et al., 2017), or according to HiTOP, the maladaptive trait "rigid perfectionism" can contribute to understanding and classifying the dimension *Internalizing* as part of the individual's pathology. Perfectionism implies the striving for high accuracy and setting of high-performance standards to achieve flawless delivery (Flett & Hewitt, 2002; Stoeber, 2011). Behaviors that lead to the achievement of these goals may include preoccupations with order, the need for constant monitoring and verification. In fact, these behaviors also consist of relevant criteria to diagnose OCD (DSM-5;

American Psychiatric Association, 2013), but the motivation underlying these behaviors in OCD is not to achieve high quality, but rather to alleviate a state of anxiety that is unrelated with high quality and achievement (Stoeber, 2011). Thus, using trait inferences to classify symptoms may lead to incorrect inferences about individuals' intentionality and agency with regard to their behaviors.

The negative impact of using trait inferences to describe symptoms is also evident when mentally ill people are described with traits that have a strong negative valence and lead to stigmatization, such as inferring laziness from a person with Depression (Brohan et al., 2010). The mechanisms underlying this clearly inappropriate trait inference are the same as those underlying the possibly inappropriate trait inference that people with OCD are rigid perfectionists (HiTOP, Kotov et al., 2017). This incongruency leads us to question whether and how trait inferences enhance or compromise case conceptualization and treatment planning by therapists as well as clients' outcomes.

Research on stigma has shown that mental illness is characterized by high perceived controllability (see Corrigan, 2005). This may indicate that the psychological disorder is attributed to the individual's personality. Personality may then be perceived as causing the psychological disorder, thus leading to the high trait inferences from behavioral symptoms in diagnosed individuals observed in the present studies.

Lay theories about the malleability of personality (Molden & Dweck, 2006) may also play a role in the reported findings. Indeed, believing that people's personalities are fixed (entity theories) favors dispositional attributions and reduces sensitivity to contextual explanations for the behavior when compared to believing that people's personalities are malleable (incremental theories) (e.g., Levy et al., 2001). Thus, holding the theory that personality does not change may lead people to disregard psychological disorder diagnoses as states, and instead see them as manifestations of the individual's personality. It could also be that people hold different theories about the stability of psychological disorders (chronic versus. temporal health conditions). If so, believing that psychological disorders are stable, or at least as stable as an individual's personality, could contribute to conflation between psychological disorder and personality (Weiner, 1995).

One future direction for research is to examine lay beliefs about the contextual cause of people's behavior. When trait inferences are associated with the belief that personality is stable—rather than malleable—belief in the potential for change may be compromised (e.g., Dweck, 2008). Further research should test whether the tendency to believe personality is stable leads to higher trait inferences and weaker adjustment to a contextual cause; whereas believing personality is malleable leads to an increased weight given to contextual variables. Studies manipulating personality stability would contribute to a better understanding of the conflation between personality and psychological disorders.

Future research should disentangle the causal link leading to the conflation of personality traits and psychological disorder diagnosis.

It would be valuable to disentangle whether specific traits are believed to increase the proclivity toward a psychological disorder or vice versa, whether the psychological disorder is believed to lead to those personality traits. Potential moderators and mediators of this conflation, such as whether beliefs regarding the malleability of personality or perceived controllability (high versus. low) influence the conflation of personality and psychological disorders.

Moreover, understanding the conflation between personality and psychological disorder may contribute to explaining some forms of mental illness stigma. Furthermore, the results of Study 6 suggest that a focus on the potential for treatment to control a psychological disorder might be successful in leading people to recognize the difference between personality and mental illness, reducing stigma. Future research should focus on increasing our understanding of how the potential conflation between personality traits and psychological disorder impact public stigma, self-stigma, and help-seeking intentions.

9.2 | IMPLICATIONS

Most important may be the urgency that derives directly from the implications of these results, notably the clinical practice implications. If people assume their friends are lazy when they have depression, it would likely impair recognition of the psychological disorder in both sufferers and their communities, reducing the likelihood of treatment-seeking (Corrigan, 2005). The presence of this bias within the psychotherapy context has even greater implications for the potential type and quality of treatment that individuals might receive. In the present research, we observed the effect even in a clinically trained sample, although it is important to note that this group seemed to make trait attributions less strongly overall than did the other participant samples, which may have contributed to the results we found (see Table A1 for means). Future research should focus on understanding how trait inferences influence clinical judgments and practices, as well as examine whether there are specific training mechanisms that can help clinicians overcome this cognitive bias.

To conclude, we found that people, including therapists, consider physical impairment information a better alternative to personality as an explanation for behavior than psychological disorder diagnosis information when judging behaviors that are commonly linked to personality, except in the case where the likelihood that treatment would control and cease the psychological disorder was made salient. These findings have implications for stigma and potentially even therapeutic alliance and treatment. Given that similar effects were found even in clinically trained participants, attention should be paid early in clinical training to the possibility of this bias operating among clinicians. Applied research would do well to examine the impact of this bias both in the clinical setting and in our everyday social interactions with an emphasis on finding ways to mitigate the impact of this bias on individuals with mental illness, especially by focusing on the potential to cease a psychological disorder.

ORCID

Sofia Jacinto (iD) https://orcid.org/0000-0003-4883-2351

REFERENCES

Ahn, W. K., & Bailenson, J. (1996). Causal attribution as a search for underlying mechanisms: An explanation of the conjunction fallacy and the discounting principle. *Cognitive Psychology*, 31, 82–123. https://doi.org/10.1006/cogp.1996.0013

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). https://doi.org/10.1176/appi.books.9780890425596

APA. (2012). *Recognition of psychotherapy effectiveness*. Author. https://www.apa.org/about/policy/resolution-psychotherapy

Brohan, E., Slade, M., Clement, S., & Thornicroft, G. (2010). Experiences of mental illness stigma, prejudice and discrimination: A review of measures. *BMC Health Services Research*, 10, 1–11. https://doi.org/10.1186/1472-6963-10-80

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.

Corrigan, P. W. (2005). *On the stigma of mental illness: Practical strategies for research and social change*. American Psychological Association.

Corrigan, P. W., Druss, B. G., & Perlick, D. A. (2014). The impact of mental illness stigma on seeking and participating in mental health care. *Psychological Science in the Public Interest*, 15, 37–70. https://doi.org/10.1177/1529100614531398

Dweck, C. S. (2008). Can personality be changed? The role of beliefs in personality and change. *Current Directions in Psychological Science*, 17, 391–394. https://doi.org/10.1111/j.1467-8721.2008.00612.x

Eells, T. D. (Ed.). (2011). *Handbook of psychotherapy case formulation*. Guilford Press.

Eells, T. D., Lombart, K. G., Kendjelic, E. M., Turner, L. C., & Lucas, C. P. (2005). The quality of psychotherapy case formulations: A comparison of expert, experienced, and novice cognitive-behavioral and psychodynamic therapists. *Journal of Consulting and Clinical Psychology*, 73, 579–589. https://doi.org/10.1037/0022-006X.73.4.579

Feldman, D. B., & Crandall, C. S. (2007). Dimensions of mental illness stigma: What about mental illness causes social rejection? *Journal of Social and Clinical Psychology*, 26, 137–154. https://doi.org/10.1521/jscp.2007.26.2.137

Flett, G. L., & Hewitt, P. L. (2002). Perfectionism and maladjustment: An overview of theoretical, definitional, and treatment issues. In G. L. Flett, & P. L. Hewitt (Eds.), *Perfectionism: Theory, research, and treatment* (pp. 5–31). American Psychological Association. https://doi.org/10.1037/10458-001

Fugelsang, J. A., & Thompson, V. A. (2001). Belief-based and covariation-based cues affect causal discounting. *Canadian Journal of Experimental Psychology*, 55, 70–76. https://doi.org/10.1037/h0087354

Garb, H. N. (2005). Clinical judgment and decision making. *Annual Review of Clinical Psychology*, 1, 67–89. https://doi.org/10.1146/annurev.clinpsy.1.102803.143810

Gawronski, B. (2004). Theory-based bias correction in dispositional inference: The fundamental attribution error is dead, long live the correspondence bias. *European Review of Social Psychology*, 15, 183–217. https://doi.org/10.1080/10463280440000026

Gilbert, D. T. (1998). Ordinary personology. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (4th ed., pp. 89–150). McGraw Hill.

Gilbert, D. T. (2002). Inferential correction. In T. Gilovich, D. Griffin, & D. Kahneman (Eds.), *Heuristics and biases: The psychology of intuitive judgment* (pp. 167–184). Cambridge University Press. https://doi.org/10.1017/CBO9780511808098.011

Gilbert, D. T., & Jones, E. E. (1986). Perceiver-induced constraint: Interpretations of self-generated reality. *Journal of Personality and Social Psychology*, 50, 269–280. https://doi.org/10.1037/0022-3514.50.2.269

Gilbert, D. T., & Malone, P. S. (1995). The correspondence bias. *Psychological Bulletin*, 117, 21–38. https://doi.org/10.1037/0033-2909.117.1.21

Gilbert, D. T., Pelham, B. W., & Krull, D. S. (1988). On cognitive busyness: When person perceivers meet persons perceived. *Journal of Personality and Social Psychology*, 54, 733–740. https://doi.org/10.1037/0022-3514.54.5.733

Hegarty, P., & Golden, A. M. (2008). Attributional beliefs about the controllability of stigmatized traits: Antecedents or justifications of prejudice? *Journal of Applied Social Psychology*, 38, 1023–1044. https://doi.org/10.1111/j.1559-1816.2008.00337.x

Hewitt, P. L., Smith, M. M., Deng, X., Chen, C., Ko, A., Flett, G. L., & Paterson, R. J. (2020). The perniciousness of perfectionism in group therapy for depression: A test of the perfectionism social disconnection model. *Psychotherapy*, 57, 206–218. https://doi.org/10.1037/pst0000281

Hill, C. E. (2005). Therapist techniques, client involvement, and the therapeutic relationship: Inextricably intertwined in the therapy process. *Psychotherapy: Theory, Research, Practice, Training*, 42, 431–442. https://doi.org/10.1037/0033-3204.42.4.431

Hinshaw, S. P. (2007). *The mark of shame: Stigma of mental illness and an agenda for change*. Oxford University Press.

Jacinto, S. B., Lewis, C. C., Braga, J. N., & Scott, K. (2018). A conceptual model for generating and validating in-session clinical judgments. *Psychotherapy Research*, 28, 91–105. https://doi.org/10.1080/10503307.2016.1169329

Jones, E. E. (1990). *A series of books in psychology. Interpersonal perception*. W H Freeman/Times Books/Henry Holt & Co.

Jones, E. E., & Harris, V. A. (1967). The attribution of attitudes. *Journal of Experimental Social Psychology*, 3, 1–24. https://doi.org/10.1016/0022-1031(67)90034-0

Kotov, R., Krueger, R. F., Watson, D., Achenbach, T. M., Althoff, R. R., Bagby, R. M., … Zimmerman, M. (2017). The Hierarchical Taxonomy of Psychopathology (HiTOP): A dimensional alternative to traditional nosologies. *Journal of Abnormal Psychology*, 126, 454–477. https://doi.org/10.1037/abn0000258

Krendl, A. C., & Cassidy, B. S. (2017). Neural response to evaluating depression predicts perceivers' mental health treatment recommendations. *Cognitive, Affective, & Behavioral Neuroscience*, 17, 1084–1097. https://doi.org/10.3758/s13415-017-0534-8

Krendl, A. C., & Freeman, J. B. (2017). Are mental illnesses stigmatized for the same reasons? Identifying the stigma-related beliefs underlying common mental illnesses. *Journal of Mental Health*, 1–9, https://doi.org/10.1080/09638237.2017.1385734

de Kwaadsteniet, L., & Hagmayer, Y. (2018). Clinicians' personal theories of developmental disorders explain their judgments of effectiveness of interventions. *Clinical Psychological Science*, 6, 228–242. https://doi.org/10.1177/2167702617712270

Laux, J. P., Goedert, K. M., & Markman, A. B. (2010). Causal discounting in the presence of a stronger cue is due to bias. *Psychonomic Bulletin & Review*, 17, 213–218. https://doi.org/10.3758/PBR.17.2.213

Levy, S. R., Plaks, J. E., Hong, Y. Y., Chiu, C. Y., & Dweck, C. S. (2001). Static versus dynamic theories and the perception of groups: Different routes to different destinations. *Personality and Social Psychology Review*, 5, 156–168. https://doi.org/10.1207/S15327957PSPR0502_6

Miles, J., & Shevlin, M. (2001). *Applying regression and correlation: A guide for students and researchers*. Sage.

Molden, D. C., & Dweck, C. S. (2006). Finding "meaning" in psychology: A lay theories approach to self-regulation, social perception, and social development. *American Psychologist*, *61*, 192–203. https://doi.org/10.1037/0003-066X.61.3.192

Morey, L. C., Hopwood, C. J., Markowitz, J. C., Gunderson, J. G., Grilo, C. M., McGlashan, T. H., ... Skodol, A. E. (2012). Comparison of alternative models for personality disorders, II: 6-, 8-and 10-year follow-up. *Psychological Medicine*, *42*, 1705–1713. https://doi.org/10.1017/S0033291711002601

Naragon-Gainey, K., & Watson, D. (2011). Clarifying the dispositional basis of social anxiety: A hierarchical perspective. *Personality and Individual Differences*, *50*, 926–934. https://doi.org/10.1016/j.paid.2010.07.012

Norcross, J. C. (1990). An eclectic definition of psychotherapy. In J. K. Zeig, & W. M. Munion (Eds.), *What is psychotherapy? Contemporary perspectives* (pp. 218–220). Jossey-Bass. https://doi.org/10.1080/00029157.1992.10402857

Persons, J. B., Beckner, V. L., & Tompkins, M. A. (2013). Testing case formulation hypotheses in psychotherapy: Two case examples. *Cognitive and Behavioral Practice*, *20*, 399–409. https://doi.org/10.1016/j.cbpra.2013.03.004

Pescosolido, B. A., Monahan, J., Link, B. G., Stueve, A., & Kikuzawa, S. (1999). The public's view of the competence, dangerousness, and need for legal coercion of persons with mental health problems. *American Journal of Public Health*, *89*, 1339–1345. https://doi.org/10.2105/AJPH.89.9.1339

Pettigrew, T. F. (1979). The ultimate attribution error: Extending Allport's cognitive analysis of prejudice. *Personality and Social Psychology Bulletin*, *5*, 461–476. https://doi.org/10.1177/014616727900500407

Pinto, A., Dargani, N., Wheaton, M. G., Cervoni, C., Rees, C. S., & Egan, S. J. (2017). Perfectionism in obsessive-compulsive disorder and related disorders: What should treating clinicians know? *Journal of Obsessive-Compulsive and Related Disorders*, *12*, 102–108. https://doi.org/10.1016/j.jocrd.2017.01.001

Quattrone, G. A. (1982). Overattribution and unit formation: When behavior engulfs the person. *Journal of Personality and Social Psychology*, *42*, 593–607. https://doi.org/10.1037/0022-3514.42.4.593

Stoeber, J. (2011). The dual nature of perfectionism in sports: Relationships with emotion, motivation, and performance. *International Review of Sport and Exercise Psychology*, *4*, 128–145. https://doi.org/10.1080/1750984X.2011.604789

Strupp, H. H. (1996). Some salient lessons from research and practice. *Psychotherapy: Theory, research, practice Training*, *33*, 135–138. https://doi.org/10.1037/0033-3204.33.1.135

Todorov, A., & Uleman, J. S. (2002). Spontaneous trait inferences are bound to actors' faces: Evidence from a false recognition paradigm. *Journal of Personality and Social Psychology*, *83*, 1051–1065. https://doi.org/10.1037/0022-3514.83.5.1051

Trope, Y., & Gaunt, R. (2000). Processing alternative explanations of behavior: Correction or integration? *Journal of Personality and Social Psychology*, *79*, 344–354. https://doi.org/10.1037/0022-3514.79.3.344

Uleman, J. S., Newman, L. S., & Moskowitz, G. B. (1996). People as flexible interpreters: Evidence and issues from spontaneous trait inference. In M. P. Zanna (Ed.), *Advances in experimental social psychology*, (Vol. *28*, pp. 211–279). Academic Press.

Watson, D., O'Hara, M. W., & Stuart, S. (2008). Hierarchical structures of affect and psychopathology and their implications for the classification of emotional disorders. *Depression and Anxiety*, *25*, 282–288. https://doi.org/10.1002/da.20496

Weiner, B. (1995). *Judgements of responsibility: A foundation for a theory of social conduct*. Guilford Press.

SUPPORTING INFORMATION

Additional Supporting Information may be found online in the Supporting Information section.

APPENDIX A

TABLE A1 Means and standard deviations of all conditions, from all studies

		Irrelevant Information M (SD)	Psychological disorder diagnosis M (SD)	Physical impairment M (SD)
Study 1		8.11 (1.52)	6.64 (2.09)	5.43 (1.99)
Study 2		6.21 (1.33)	5.56 (2.59)	3.70 (1.54)
Study 3 (second rating)		7.08 (1.75)	6.59 (2.24)	4.85 (1.73)
Study 4		7.24 (1.81)	6.15 (2.28)	5.24 (1.49)
Study 5	Cause present	7.87 (1.30)	7.27 (2.17)	5.89 (2.34)
	Cause absent	7.60 (1.75)	7.29 (2.28)	7.16 (2.11)
Study 6		7.71 (1.81)	5.74 (2.33)	5.38 (2.12)

TABLE A2 Summary of the design of Studies 1–6

Study	Design					Sample
#1	Vignette	Attribution	Trait inference			Lay people
#2	Vignette	Attribution	Trait inference			Therapists
#3	Vignette	Trait inference	Attribution	Trait inference		Lay people
#4	Attribution	Vignettes	Trait inference			Lay people
#5	Vignette	Attribution	Trait inference	Absence of cause	Trait inference	Psychology students
#6	Vignette (psych disorder will cease)	Attribution	Trait inference			Lay people