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Psychological Disorder Diagnosis are no cure for trait inferences

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Abstract

According to DSM-5, maladaptive behavior stemming from a psychological disorder should not be attributed to personality. Misattribution of behavioral symptoms to personality may undermine treatment seeking and therapy outcomes and cause the stigmatization of the mentally ill. Although people can 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 given 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.

Keywords: Causal attribution, Trait inferences, Psychological Disorder Diagnosis, Mental illness stigma

Introduction

People diagnosed with a psychological disorder are often treated as though (and sometimes believe, themselves) the disorder is part of their personality. This can lead to stigma and discrimination (Corrigan, 2005; Feldman & Crandall, 2007; Hinshaw, 2006; Patrick & Corrigan, 2002; Pescosolido, Monahan, Link, Stueve, & Kikuzawa, 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 alternate cause and a physical disability alternate cause.

Standards for clinical psychology diagnosis and practice, such as the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; DSM-5; American Psychiatric Association [APA], 2013), recommend that certain behaviors should be categorized as symptoms of a specific disorder, a contextual explanation for those behaviors. When psychological disorder diagnoses are not treated as contextual explanations for a person's symptomatic behavior, the misattribution of behavioral symptoms to an individual's personality is likely. For instance, while lack of energy or motivation are symptoms of depression (DSM-5; APA, 2013), a depressed patient who describes spending the day lying on the couch may be erroneously perceived as lazy.

Investigating these potential misattributions –mental illness symptoms being attributed to an individual's personality – is critical for understanding how stigma impacts treatment seeking (Corrigan, Druss, & Perlick, 2014). Moreover, if therapists are prone to these kinds of misattributions, 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, Lombart, Kendjelic, Turner, & Lucas, 2005).

Stigmatized personality judgments are likely common, considering the spontaneous nature of inferring traits from behaviors (Uleman, Newman, & Moskowitz, 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, Pelham, & Krull; 1988; Gilbert, 1998, 2002; Gilbert & Malone, 1995; 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 should lead to the same adjustment that, for instance, a physical impairment leads to. Thus, an individual who spends the day on the couch should 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, 2006) 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 misattributions 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 circumstantial 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, 2004; 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 of particular interest 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, Lewis, Braga, & Scott, 2018; Persons, Beckner, & Tompkins, 2013), whether psychological disorder symptoms are seen as trait indicative behaviors, despite a diagnosis, has not been explored in this population.

Main paradigm and studies overview

To test our hypothesis that psychological disorder leads to lower trait inference adjustment than 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, as advocated by standards for clinical practice, it should lead to a level of trait inference 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 explore the role of a psychological disorder diagnosis as a contextual alternative attribution for the behavior. Studies 1 and 2 test whether the psychological disorder diagnosis leads to similar trait inference as a physical impairment, both for lay participants (Study 1) and for experts in clinical psychology (Study 2). Studies 3 and 4 explore 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 there is a conflation between 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 would increase trait inference adjustment.

Methods

Pretest of materials

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 (APA, 2013), and a physical impairment. To develop the vignettes, we adapted the behavioral symptoms of psychological disorders as generally described by the DSM-5 (APA, 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 it is 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.

Study 1

Participants

One hundred and three participants[1] (M_{age} = 24 years, SD = 3.16 years), with no knowledge and experience is clinical psychology, completed this experiment in exchange for a 5€ supermarket gift certificate. Participants were Portuguese speaking; experiments were conducted in their native language.

Procedure

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. They were told they would be presented with several descriptions of different individuals and asked to make judgments about each[2].

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 information (control condition). The control condition (e.g. *Ana eats cereals 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.

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?)

Results and Discussion

Trait inferences. 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, $F(2,102) = 61.38$, $p < .001$, $\eta_{partial}^2 = .38$. 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]. Psychological disorder diagnosis condition ($M = 6.64$, $SD = 2.09$) also led to lower trait inferences than 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 [-1.74, -0.67]. Means for conditions in all studies are included in Table 1.

Thus, we observed that lay people were more likely to make dispositional attributions about psychological disorder diagnoses than they were for physical impairments. Despite not being equivalent to the physical diagnoses, there was some adjustment for the psychological diagnoses attribution in comparison with the irrelevant information condition.

Study 2

Considering Study 1 participants were lay people, therapists, 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.

Participants

Forty-three therapists[3], Portuguese speaking, (M_{age} = 31 years, SD = 8.08 years) volunteered, without incentive, to participate in this online experiment. 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 in order to work with any type of case.

Procedure

The methods for Study 2 were the same as described in Study 1[4].

Results and Discussion

Trait inferences. The repeated measures ANOVA with trait inferences resulted in a main effect of attribution, $F(2, 42)$ = 22.70, $p < .001$, $\eta_{partial}^2$ = .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 [-2.80, -0.92]. Psychological disorder

diagnosis did not lead to significantly lower trait inferences than 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, make 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.

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 better adjustment in the psychological disorder diagnosis condition.

Participants

106 participants, Portuguese speaking, without clinical expertise[5] ($M_{age} = 24$ years, $SD = 5.5$ years) completed this experiment in exchange for a 5€ supermarket gift certificate.

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. With this design we intended to increase the salience of the potential cause of the behavior.

Results and Discussion

Trait inferences. 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, $F(2, 105) = 44.24$, $p < .001$, $\eta_{partial}^2 = .30$. 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 ($M = 7.08$, $SD = 1.75$), $t(105) = 9.83$, $p < .001$, 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 [-2.23, -1.26]. 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)[6]. Accordingly, a repeated measures ANOVA, with 3 conditions (irrelevant/physical impairment/diagnosis), revealed a main effect of attribution $F(2, 105) = 39.76$, $p < .001$, $\eta_{partial}^2 = .28$. Planned comparisons showed there was more adjustment in the physical impairment condition ($M = 2.80$, $SD = 1.93$) than in irrelevant information condition ($M = .51$, $SD = 1.48$), $t(105) = 10.25$, $p < .001$, 95% CI [-2.73, -1.85]. Results also show 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 [-1.29, -0.18].

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.

Study 4

In previous studies we observed that, given a psychological disorder diagnosis, participants generally adjust the trait inference less than as they do for physical impairments. What may be happening is that (at least in the case of psychological disorders) adjustments are not made once the trait has been inferred. If that is the case, this bias should not occur if the behavior is initially attributed to the context (e.g., psychological disorder diagnosis or physical impairment), before the trait inference is made.

Participants

Seventy-five Portuguese speaking participants with no clinical expertise, (M_{age} = 21 years, SD = 3.17 years) completed this study in exchange for a 5€ supermarket gift certificate.

Procedure

To test Study 4's hypothesis, we reversed the order in which the materials were presented. We first presented the attribution information – the behavior cause – followed by the trait/diagnosis indicative vignette. 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.

Results and Discussion

Trait inferences. The same repeated measures ANOVA resulted in a main effect of attribution, $F(2, 74) = 25.69$, $p < .001$, $\eta_{partial}^2 = .26$. 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 [-1.46, -0.35]. In the psychological disorder condition, participants made marginally significantly lower trait inferences than in the irrelevant information condition $t(74)$ = 3.74, p =.065, 95%, CI [0.51, 1.68].

Presenting the potential causal reason for the behavior 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 the physical impairment being used to explain the behavior more that 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, Goedert & Markman, 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.

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 will increase the attribution to personality, thus increasing the trait inference.

Participants

One hundred and three students, Portuguese speaking, (M_{age} = 21 years, SD = 5.05 years) completed this study in exchange for course credit.

Procedure

Study 5 replicated Study 1, with the addition, at the end, of a second trait inference judgment 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 to revise their initial impression presuming no contextual causal explanation. For instance, "How lazy would Ana be if she had not a had an accident (physical impairment account)/had depression (diagnosis account)/ate cereals (neutral information), assuming she behaved in the same way?".

Results and Discussion

First trait inference judgment. The repeated measures ANOVA conducted on the initial trait inference judgment resulted in a main effect of attribution, $F(2, 102) = 36.26$, $p < .001$, $\eta_{partial}^2 = .26$. 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 [-1.92, -0.84]. Additionally, psychological disorder did not lead to lower trait inferences than irrelevant information condition $t(102) = 2.65$, $p = .009$, 95%, CI [0.15, 1.05].

Second trait inference judgment. The repeated measures ANOVA conducted on the second trait inference judgment resulted in no main effect of attribution, $F(2, 102) = 1.50$, $p = .225$, $\eta_{partial}^2 = .02$, nor differences on the planned comparison paired t-tests, all ts < 1.7, ps $\geq .1$ (irrelevant information condition: $M = 7.60$, $SD = 1.75$; physical impairment attribution: $M = 7.16$, $SD = 2.11$; psychological disorder diagnosis condition: $M = 7.29$, $SD = 2.28$).

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, $F(2, 102) = 11.84$, $p < .001$, $\eta_{partial}^2 = .10$. 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 ($M = .27$, $SD = 1.19$), $t(102) = 4.71$, $p < .000$, 95% CI [0.89, 2.18]. The adjustment for the physical impairment condition was significantly larger than in the psychological disorder condition ($M = -.02$, $SD = 3.12$), $t(102) = 3.35$, $p = .001$, 95% CI [-1.98, -0.51]. The adjustment in the psychological disorder condition did not differ from the adjustment in the irrelevant condition $t < 1$.

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.

Study 6

In 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, 2006). In fact, both variables communicate whether there is an underlying belief that the stigma condition may cease. If that is the case, participants believe that the psychological disorder is likely to cease in the future should lead to low 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.

Participants

One hundred and 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.

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 implied that the person was seeking help (high controllability) and would be cured (low stability). The goal of doing this was to directly reduce the stigma associated to the psychological disorder.

Results and Discussion

Trait inferences. The repeated measures ANOVA on trait inferences resulted in a main effect of attribution, $F(2, 100) = 50.02$, $p < .001$, $\eta_{partial}^2 = .33$. 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, $t(100) = 7.07$, $< .001$, 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.

General Discussion

According to clinical practice guidelines, some behaviors should be categorized as symptoms of a diagnosed psychological disorder (DSM–5, APA, 2013) and not attributed to personality (e.g., Gilbert, 2002). This 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 leads to adjustments of the trait inferences to the extent that a physical impairment does.

Across five studies, we found evidence for this 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 with 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 adjustments

based on a psychological disorder not significantly different than those made based on a physical impairment (Study 6).

Potential mechanisms and explanations

The observed conflation between personality traits and psychological disorders as causal explanations of the behavior suggest that psychological disorder diagnoses carry with them the attribution of enduring negative personality traits, or vice versa. This might be explained by the nature of the perceived causal relation between psychological disorders and personality (e.g. Kwaadsteniet & Hagmayer, 2017). 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 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.

Research on stigma has shown that mental illness is characterized by high perceived controllability (see Corrigan, 2006). 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, Plaks, & Dweck, 1999). Thus, holding the theory that personality does not change may help to disregard psychological disorder diagnosis as states, and see them as manifestations of the

individual's personality. It could also be that people hold different theories about the stability of the psychological disorder (chronic vs. 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).

Future research should disentangle the causal link leading to the conflation of personality traits and psychological disorder diagnosis. Moreover, understanding the conflation between personality and psychological disorder may contribute to explaining some forms of mental illness stigma, such as making personality impressions from symptoms of the person with the stigmatizing condition. 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.

Implications

Most important may be the urgency that derives directly from the implications of these results, notably the clinical practice implications. If individuals assume their friend is lazy when he/she has depression, it would likely impair recognition of the psychological disorder in both the sufferer and his/her community, reducing the likelihood of treatment seeking (Corrigan, 2004). The fact that this bias occurs within the psychotherapy context has further 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 1 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. However, based on the results of Study 2, 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.

Footnotes

[1] We conducted power analyses to determine sample size. Based on a small effect size ($\eta_{partial2}$=0.01), the minimum required sample size is N = 161; and based on a medium effect size ($\eta^{partial2}$=0.06), the minimum required is N = 27 (Cohen, 1988; Miles & Shevlin, 2001). Thus, sample size in Study 1 was determined based on these calculations, previous research and the available budget to compensate participants.

[2] 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).

[3] We conducted power analyses to determine sample size of Study 2. Based on the effect size of Study 1 ($\eta_{partial2}$= .38), the minimum required sample size is N = 6.

[4] 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] We conducted power analyses to determine sample size of Studies 3 to 5. Based on the effect size of Study 2 ($\eta_{partial2}$= .35), the minimum required sample size is N = 7.

[6] 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: $M = 7.79$, $SD = 1.40$).

Authors Contribution

S. Jacinto developed the study concept and main paradigm. S. Jacinto, J. Braga and M. Silva-Ferreira contributed to the study design. Testing and data collection were performed by S. Jacinto and M. Silva-Ferreira. S. Jacinto performed the data analysis and interpretation; with the assistance of M. Silva-Ferreira and J. Braga; under the supervision of E. Collins, A. Krendl, C. C. Lewis. S. Jacinto drafted the manuscript, and all the other authors provided critical revisions. All authors approved the final version of the manuscript for submission.

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Appendix A

		Irrelevant Information	Psychological disorder diagnosis	Physical Impairment
		M (SD)	M (SD)	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		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 1. Means and standard deviations of all conditions, from all studies.