

The Effect of Language Type and Perceived Controllability on Stigma and Compassion

Maddie Leake¹, Christine McGrath¹, Trudy Mickel¹, Claire Shaver¹, Gina A. Paganini², E. Paige Lloyd²

¹Student Contributor, University of Denver

²Advisor, Department of Psychology, University of Denver

Abstract

Previous research suggests that mental health stigma creates significant barriers to treatment seeking and adherence, diminishes treatment outcomes, and motivates social rejection towards people experiencing mental illness; by contrast, compassion seems to offer protective effects, improving treatment outcomes and helping behavior. The current work extends the established literature by experimentally examining the independent and interactive effects of two factors theorized to influence stigma and compassion: controllability and language. Participants read vignettes about hypothetical mental illnesses explained with a genetic attribution (indicating low controllability) or a behavioral attribution (indicating high controllability) and completed measures of perceived controllability, stigma, and compassion. We found that genetic etiology, compared to behavioral etiology, decreased stigma and increased compassion. Although not statistically significant, preliminary evidence suggests that language might interact with etiology to affect stigma. In the behavioral etiology condition, identity-first language (compared to person-first) exacerbated stigma, whereas, in the genetic etiology condition, this effect was descriptively reversed, though statistically nonsignificant. Our findings provide evidence that emphasizing the contribution of uncontrollable factors (e.g., genetics) to psychopathology could help reduce stigma and increase compassion for people experiencing mental illness. Language may also interact with controllability to inform stigma. This work could aid in advising empathetic and supportive language practices dependent on condition characteristics (e.g., perceived controllability), however, replication is needed to demonstrate the reliability of these effects.

Keywords: person-first language, perceived controllability, etiology, stigma, compassion

1 THE EFFECT OF LANGUAGE TYPE AND PERCEIVED CONTROLLABILITY ON STIGMA AND COMPASSION

An estimated 52.9 million adults in the United States live with a mental illness, and an estimated 90% of those adults say that stigma negatively impacts their lives^{1,2}. Stigma encompasses value judgments (stereotypes), emotional responses (prejudice), and behavioral discrimination toward members of a group³; this poses potentially deleterious effects on psychological and physical health, such as decreased self-esteem and self-efficacy^{4,5,6,7,8}. Research suggests that stigma is a major barrier to treatment seeking and is associated with impaired treatment outcomes^{9,10,11}. Whereas stigma is associated with negative outcomes, compassion – care and concern for another person – positively affects people with mental illness¹². For example, compassion im-

proves treatment outcomes, leads to helping behavior, and facilitates comforting caregiving exchange^{13,14,12}. Because stigma and an absence of compassion create obstacles for people with mental illness, researchers have sought to understand their antecedents.

Some work suggests that perceived controllability – the extent to which it is believed that an individual can prevent a disorder from developing – is strongly associated with the stigmatization of mental illness and other conditions^{6,15,16}. Beyond the perceived controllability of a condition, the language used to describe that condition may also inform stigma and compassion. To this point, research suggests empathetic and inclusive language can reduce stigma and increase compassion toward people experiencing mental illness^{17,18,19}. Extending upon past research, current literature investigates the independent and interactive influences of controllability (whether a condition originated from an individ-

ual's behavior or genetics) and language (person-first or identity-first language) on stigma and compassion towards people with mental illness.

2 THE EFFECTS OF LANGUAGE TYPE ON STIGMA AND COMPASSION

There is an ongoing debate in communities, including the disability rights and mental health communities, regarding whether person-first "person with a mental illness" or identity-first "mentally ill person" language is more stigmatizing²⁰. Person-first language is theorized to deemphasize disability status as one aspect of a person instead of their entire identity, whereas identity-first language is theorized to allow group members to claim their disability or condition as part of their identity with pride^{21;22}. Some communities, like the autistic and deaf communities, explicitly advocate for identity-first language²³; American Psychological Association, 2021. Other communities, like substance abuse and mental illness, do not endorse a specific language type, so the American Psychological Association (APA) and American Medical Association (AMA) recommend using person-first language when referring to people with mental illness or substance use disorders.

For communities that do not endorse a specific language type, some researchers have sought to experimentally test how the language used to describe conditions informs judgments of individuals experiencing those conditions. For example, research suggests that identity-first, relative to person-first, language yields greater stigma toward people with substance use disorders^{17;18;24;24}. Other studies found that identity-first language (i.e., "mentally ill people" and "schizophrenics") led to greater stigma than person-first language (i.e., "people with mental illness" and "people with schizophrenia")^{25;19}. Some studies have also provided evidence that person-first, relative to identity-first, language led to greater benevolence, which may be a good proxy for compassion^{17;19;26}.

Though several studies have found that language type informs stigma, others yielded nonsignificant effects^{17;18;25;19}. Other studies found a nonsignificant effect of language type on stigma for either mental illness (e.g., schizophrenia) or substance abuse disorders^{27;28}. In addition, our pilot study examined the effect of language type (person-first vs. identity-first) on prejudice and dehumanization towards people with hypothetical psychological conditions and yielded nonsignificant effects of language on both prejudice and dehumanization²⁹. Another study found a nonsignificant effect of language type on benevolence²⁵. Given contradictory evidence and null effects in previous work, we did not predict a main effect of language type on stigma or compassion in the current work.

3 THE EFFECTS OF PERCEIVED CONTROLLABILITY ON STIGMA AND COMPASSION

A wealth of research has investigated the impact of perceived controllability on stigma. One such study found that perceived controllability predicted social rejection towards people with mental illness better than 16 other factors⁶. Other work found that perceived controllability accounted for 18% of the variance in stigma toward a variety of stigmatized conditions and identities and 24% of the variance in stigma toward people with mental illnesses^{15;16}. Additionally, research indicates that alcohol use disorder was perceived as more controllable and was more stigmatized than schizophrenia or depression³⁰.

To test the effect of perceived controllability on stigma, many studies have operationalized perceived controllability with genetic (low perceived controllability) and behavioral (high perceived controllability) etiological conditions. Researchers have hypothesized that describing conditions with genetic etiological attributions (compared to behavioral etiological attributions) would reduce stigma by also reducing perceived controllability³¹. Some research has found that genetic etiological attributions, relative to behavioral etiological attributions, predicted more pity, sympathy, and desire to help people with schizophrenia and depression³². However, there is some contradictory evidence in the literature on the impact of etiology on constructs related to stigma and compassion^{33;32;34}. To this point, Angermeyer et al found no differences in pity, empathy, and desire to help people with anorexia or bulimia between genetic and behavioral etiology groups. Additionally, a meta-analysis found that genetic attributions (relative to behavioral attributions) were associated with reduced blame but similar stigma³⁵.

In sum, there is notable complexity in the literature surrounding perceived controllability and etiology in stigma and compassion for individuals experiencing mental illness. The current study resembled past work^{31;32} because we operationalized high and low controllability via manipulation of etiology. However, the current work departs from past work by employing hypothetical mental illnesses, thereby eliminating existing expectations of controllability that might accompany a known diagnosis. We reasoned that inconsistencies in the extant literature might be attributed to preconceived beliefs about controllability or stigmatizing attitudes toward recognizable mental illnesses^{32;35}. Thus, by employing hypothetical mental illnesses we aimed to mitigate the effects of preconceived attitudes and beliefs, allowing us to better capture the direct effects of perceived controllability on stigma and compassion. Therefore, we aligned our predictions with the literature that has studied the effects of perceived controllability

bility on stigma^{6;15;16}. We predicted behavioral etiology (high perceived controllability) would result in greater stigma and less compassion than genetic etiology (low perceived controllability).

4 INTERACTIVE EFFECT OF LANGUAGE TYPE AND PERCEIVED CONTROLLABILITY

Though previous work has not considered language and controllability in tandem, it is also possible that controllability and language may interact to inform perceptions of those experiencing mental illness. Taking smoking, for example, person-first language (“person who smokes”) describes a person who engages in a behavior, whereas identity-first language labels people as their behavior (“smoker”). Williamson and colleagues (2020) found that labeling people as their behavior (“smoker”) led to more negative perceptions of tobacco dependence. This study only examined the influence of language on stigma but did not investigate the perceived controllability of smoking. However, other work suggests smoking tends to be perceived as a controllable action and lifestyle choice³⁶, so we believe the effects found by Williamson and colleagues might be most applicable to conditions perceived as highly controllable. If so, then it may be the case that person-first, relative to identity-first, language yields more positive perceptions of individuals with conditions perceived as highly controllable.

Work investigating language-type of substance use disorders has found converging evidence. Specifically, work assessing perceptions of individuals with substance use disorders – a disorder that is often perceived as controllable – has found strong support that person-first language yields less stigma relative to identity-first language^{37;17;18;24}. Thus, it may be the case that person-first language leads to relatively less stigma for conditions perceived as controllable. Conversely, conditions with lower controllability aspects such as autism and deafness, which have biological etiology, are more likely to advocate for identity-first language compared to person-first^{38;39;40;41}. While this is anecdotal evidence, it could indicate that these populations interpret identity-first language as less stigmatizing and more compassionate by valuing their disorder as part of themselves in an empowering, positive light^{39;23}.

Thus, we hypothesize the perceived controllability of a condition may modulate whether identity-first or person-first language yields more positive judgments and reactions. Disorders perceived as controllable may be more subject to stigmatization when also labeling individuals using identity-first (relative to person-first) language, but perhaps disorders perceived as uncontrollable are more positively perceived when identity-first language (relative to person-first) is employed.

5 OVERVIEW OF THE CURRENT WORK

Separate research inquiries have examined the effects of perceived controllability and language type on stigma and compassion, but research has yet to consider potential interactive effects. This study contributes to the ongoing debate of person-first versus identity-first language by experimentally investigating the language used to describe individuals with mental illness and examining consequences for stigma and compassion toward those individuals. There is also empirical evidence suggesting that the perceived controllability of conditions predicts constructs adjacent to stigma and compassion, such as prejudice and discrimination. However, there is still some inconsistency in the literature, that we theorize might be attributed to preconceived notions, beliefs, and attitudes about specific disorders. The current work uses hypothetical mental health illnesses to mitigate such preexisting beliefs and focuses on the direct effects of language and controllability on stigma and compassion towards known mental illnesses.

In the current work, we studied the effects of language type and perceived controllability on stigma and compassion. Specifically, we assessed perceivers’ stigma and compassion towards individuals with a hypothetical mental illness across language type (i.e., person-first vs. identity-first language) and controllability, which was operationalized via manipulation of etiology (i.e., behavioral [high controllability] vs. genetic [low controllability]). We used a mixed-model design with language type as a within-subjects variable and etiology as a between-subjects variable. That is, all participants saw one condition described with person-first and one described with identity-first language, and participants were randomly assigned to learn about conditions with either genetic or behavioral etiology.

We did not anticipate a significant main effect of language type on stigma or compassion. We predicted a significant main effect of etiology on stigma and compassion. Specifically, we anticipated that behavioral etiology would result in greater stigma and less compassion than genetic etiology. Further, we predicted an interaction between language type and etiology on stigma and compassion. Within the behavioral etiology condition, we predicted participants would exhibit greater stigma and less compassion toward conditions described with identity-first, compared to person-first, language. Within the genetic etiology condition, we predicted participants would report less stigma and greater compassion toward conditions described with identity-first, compared to person-first, language.

If hypotheses are supported, our findings could help advise healthcare workers and clinicians on language use and framing of psychological disorders that will minimize stigma and encourage compassion toward those affected by mental illness. For example, if high

perceived controllability results in greater stigma and less compassion, psychoeducation efforts could emphasize uncontrollable factors (e.g., genetics) that contribute to the development of mental illness. Additionally, the projected interactive effect between language type and perceived controllability could contribute to the public good by informing specific recommendations for when to use person-first and identity-first language. For mental illnesses perceived as controllable, person-first language may be best whereas mental illnesses perceived as uncontrollable may benefit more from identity-first language. If the data from the current study and additional studies do not support our hypotheses, then resources may be better allocated to the explanation of other variables to combat stigma. In sum, the current work seeks to document the antecedents of supportive and harmful responses to mental illness with the ultimate hope of identifying interventions to reduce stigma and promote compassion toward mental illness. Given the importance of stigma and compassion in treatment-seeking, adherence to care, treatment success, and well-being, it is crucial to better understand the ways in which language and perceived controllability influence these key constructs.

6 METHODS

6.1 Participants

Constrained by our class research budget (\$166) and planned participant payment amount (\$1.00), we aimed to recruit 127 participants. We recruited 129 participants from Amazon Mechanical Turk via CloudResearch. A sensitivity analysis conducted in G*Power⁴² indicated that 129 participants enabled us to detect a small $n_{p2} = .02$ effect with 80% power in a 2×2 mixed model factorial ANOVA.

Our sample ($M_{age} = 44.59$, $SD_{age} = 14.51$) was predominantly White (102 White, 11 Black/African American, 10 Asian, 2 American Indian/Alaskan Native, 2 as Bi- or multiracial, 1 as other, and 1 did not disclose). About half of the participants were women¹ (65 women, 63 men, 2 as nonbinary, 1 as agender, and 1 did not disclose), and most did not identify as Hispanic or Latinx (113 not Hispanic/Latinx, 11 Hispanic/Latinx, and 5 did not disclose). Participants were compensated \$1.00 for their participation, and no participants were excluded from the analyses.

6.2 Procedure

After providing informed consent, participants viewed two vignettes in random order: one vignette used identity-first language, and the other vignette used person-first language. Each participant was randomly

assigned to either the genetic etiology (low controllability) or the behavioral etiology (high controllability) condition, so each participant viewed vignettes with the same etiological attribution. Thus, the vignettes viewed by a given participant varied only in name (i.e., Grespar or Munder) and language type (i.e., person-first or identity-first). Which name was paired with which language type was counterbalanced between participants.

After viewing each vignette, participants completed measures of stigma, compassion, and perceived controllability. All scales were modified to incorporate the mental illness name and language type from the preceding vignette. After participants responded to both vignettes, they completed an assessment of inclusion of self with mental illness and a demographic questionnaire that included age, gender, race, ethnicity, education, and political orientation items. Lastly, participants were debriefed, thanked, and compensated.

7 MATERIALS

7.1 Vignettes

We manipulated language type (person-first vs. identity-first) and etiology (genetic vs. behavioral) via vignettes that described a mental illness in a new hypothetical society. The names of the hypothetical mental illnesses (Grespar and Munder) were selected based on pre-testing indicating they were the two most negative names from a set of randomly created names (see pre-registration document for more details about pre-test procedure and findings;²⁹). Each participant viewed two vignettes that differed in name (Grespar vs. Munder) and language (person-first vs. identity-first). The etiology (genetic vs. behavioral) was consistent across both vignettes for each participant (i.e., manipulated between subjects). Both the genetic and behavioral vignettes are presented below.

Genetic Etiology Vignette. “Imagine you learn about a new hypothetical society where a subset of individuals has a mental health disorder named [Grespar/Munder]. [Grespar/Munder people or people with Grespar/Munder] were born with it and have no control over the mental health disorder. [Grespar/Munder] is passed down through generations.”

Behavioral Etiology Vignette. “Imagine you learn about a new hypothetical society where a subset of individuals has a mental health disorder named [Grespar/Munder]. [Grespar/Munder people or people with Grespar/Munder] people were not born with it and developed the mental health disorder through behavioral and lifestyle choices.”

¹Participants could identify with more than one gender category

7.2 Perceived Controllability

Perceived controllability was assessed as a manipulation check via a modified version of the Attributions for Serious Illness Scale, adapted from Mantler et al. (2003). The Attributions for Serious Illness has a four-item controllability subscale that includes questions like, "It was something that [*Grespar/Munder people or people with Grespar/Munder*] did that caused their illness." Two items were reverse-coded following the procedures from Mantler et al. (2003). We scored perceived controllability as a composite variable by averaging each of the four items separately for each language type and etiology condition. See Table 1 for statistics.

7.3 Stigma

Stigma was assessed using a 5-item modified version of the Self-Stigma of Mental Illness Short Form, adapted from Corrigan et al. (2012). Participants viewed two versions of the scale: one evaluated anticipated public perception and the other evaluated personal perception. Items on the scale evaluating anticipated public perception were prefaced with "I think the public would believe..." whereas items on the scale evaluating personal perception were prefaced with "I believe...". All items were modified to incorporate the language type manipulation (person-first vs. identity-first) and condition name (*Grespar* vs. *Munder*). Participants rated items on a nine-point Likert scale from 1 (*strongly disagree*) to 9 (*strongly agree*). An example of an identity-first item is "Most [*Grespar/Munder*] people will not recover or get better." An example of a person-first item is "Most people with [*Grespar/Munder*] are dangerous." We scored stigma by creating a composite variable for each condition by averaging all ten items (i.e., five items assessing public perception and five items assessing personal perception). See Table 2 for statistics.

7.4 Compassion

Compassion was evaluated on a 9-point Likert-type scale. Participants were instructed: "Compassion is care and concern for another person who is experiencing hardship. It often leads to helping behavior. Please rank on a scale of 1 (*very little*) to 9 (*very much*) how much compassion you feel towards (_____ *people/people with* _____)." Compassion was compared for person-first ($M_{genetic} = 7.17, SD_{age} = 1.91; M_{behavioral} = 6.25, SD_{behavioral} = 2.09$) and identity-first language ($M_{genetic} = 7.17, SD_{age} = 1.88; M_{behavioral} = 6.36, SD_{behavioral} = 2.01$).

7.5 Assessment of inclusion of self with mental illness

Self-identification with mental illness was modified from Aron et al. (1992) to assess as an individual difference. Participants were instructed to "Please choose the picture below that best describes how you see yourself in relation to mental illness. Selecting '1' would indicate you do not identify at all with mental illness, while '7' would indicate you perceive a great deal of overlap" ($M = 3.20, SD = 1.91$; see Figure 1).

8 RESULTS

As a manipulation check, we conducted an independent samples t-test comparing ratings of the genetic etiology condition and the behavioral etiology condition on controllability. We predicted that participants in the behavioral etiology condition would perceive the hypothetical mental illnesses as more controllable than participants in the genetic etiology condition. This analysis yielded a significant result, $t(127) = 18.52, p < .001, 95\% CI = [4.20, 5.21], d = 1.44$. Consistent with our hypothesis, participants assigned to read about conditions with behavioral etiology ($M = 6.63, SD = 1.58$) judged these conditions as more controllable than those who read about conditions with genetic etiology ($M = 1.93, SD = 1.30$).

8.1 Stigma

We hypothesized a significant main effect of etiology on stigma, such that behavioral etiology would cause greater stigma than genetic etiology. We hypothesized a null main effect of language type on stigma. Further, we predicted an interaction between etiology and language type. Specifically, we expected participants in the behavioral etiology condition would exhibit greater stigma towards the identity-first condition than the person-first condition, whereas we expected participants in the genetic etiology condition to exhibit less stigma in the identity-first condition, compared to the person-first condition.

To test these hypotheses, we conducted a 2 (language type: person-first, identity-first) \times 2 (etiology: genetic, behavioral) mixed model factorial ANOVA on stigma, with language type as a repeated factor and etiology as a between-subjects factor. Consistent with predictions, this analysis yielded a nonsignificant main effect of language type on stigma, $F(1,127) = 0.17, p = .683, \eta_p^2 = .00$. There was a significant main effect of etiology on stigma, $F(1,127) = 14.25, p < .001, \eta_p^2 = .10$. In accordance with our hypothesis, participants exhibited greater stigma towards the behavioral etiology condition $M = 4.85, SD = 1.34$) than they did towards the genetic etiology condition ($M = 3.91, SD = 1.51$). Of particular interest,

Condition	Mean (M)	Standard Deviation (SD)	Cronbach's alpha (a)
Person-first, Genetic Etiology	1.93	1.40	0.74
Person-first, Behavioral Etiology	6.59	1.94	0.76
Identity-first, Genetic Etiology	1.93	1.38	0.83
Identity-first, Behavioral Etiology	5.00	0.71	0.77

Table 1 Descriptive Statistics and Cronbach's alpha for Perceived Controllability.

Condition	Mean (M)	Standard Deviation (SD)	Cronbach's alpha (a)
Person-first, Genetic Etiology	3.95	1.50	0.84
Person-first, Behavioral Etiology	4.78	1.42	0.79
Identity-first, Genetic Etiology	3.62	1.59	0.85
Identity-first, Behavioral Etiology	4.91	1.37	0.76

Table 2 Descriptive Statistics and Cronbach's alpha for Stigma.

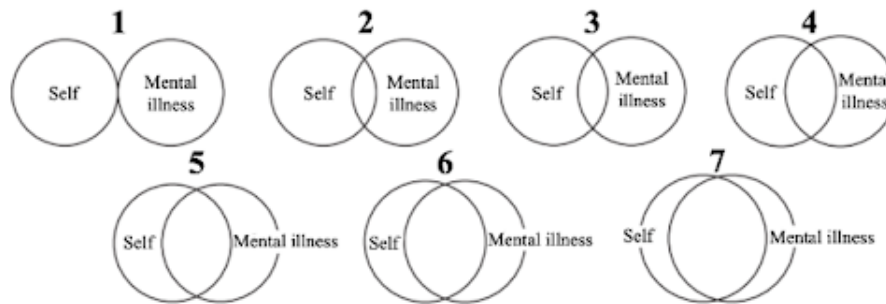


Figure 1. Inclusion of Self with Mental Illness Measure.

the interaction between language type and etiology on stigma was marginally significant, $F(1,127) = 3.80$, $p = .053$, $\eta_p^2 = .03$ (See Figure 2). We examined the simple effects to better understand the nature of this interaction. Within the behavioral etiology condition, identity-first language ($M = 4.92$, $SD = 1.37$) yielded marginally greater stigma than person-first language ($M = 4.78$, $SD = 1.42$), $p = .099$. Within the genetic etiology condition, there was a descriptively reversed but nonsignificant effect of identity-first language ($M = 3.86$, $SD = 1.52$) and person-first language ($M = 3.95$, $SD = 1.50$) on stigma, $p = .276$. In sum, language type did not independently impact stigma, but behavioral etiology (high perceived controllability) led to greater stigma than genetic etiology (low perceived controllability). Additionally, there

is preliminary evidence that identity-first language may exacerbate stigma in conditions that are perceived as highly controllable. See Figure 2.

8.2 Compassion

We expected stigma to be inversely related to compassion, so our hypotheses here are the same as above but reversed. We hypothesized a significant main effect of etiology on compassion, such that genetic etiology would yield greater compassion than behavioral etiology. We again hypothesized a null main effect of language type on compassion. Additionally, we predicted an interaction between language type and etiology on compassion. Within the behavioral etiology condition,

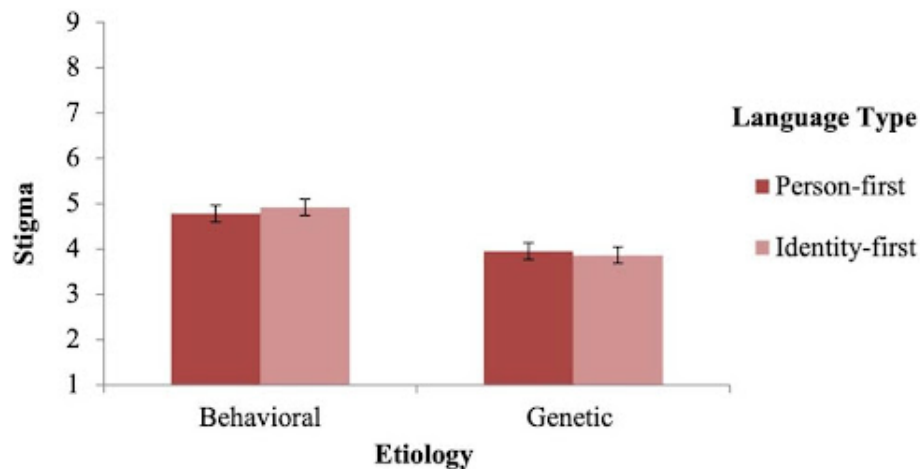


Figure 2. The effect of etiology and language type on stigma. Error bars indicate 95% confidence intervals.

we predicted that participants would exhibit greater compassion in the person-first condition than in the identity-first condition. Within the genetic etiology condition, we predicted that participants would exhibit greater compassion in the identity-first language condition compared to person-first.

To test these hypotheses, we conducted a 2 (language type: person-first vs. identity-first) \times 2 (etiology: genetic, behavioral) mixed model factorial ANOVA on compassion, with language type as a repeated factor and etiology as a between-subjects factor. This analysis yielded a non-significant main effect of language type on compassion, $F(1,127) = 2.60$, $p = .109$, $\eta_p^2 = .02$. There was a significant main effect of etiology on compassion, $F(1,127) = 5.88$, $p = .017$, $\eta_p^2 = .04$. Consistent with our prediction, participants assigned to read about conditions with genetic etiology ($M = 7.14$, $SD = 1.89$) exhibited greater compassion towards individuals with those conditions than those who read about conditions with behavioral etiology ($M = 6.30$, $SD = 2.02$). Contrary to hypotheses, the interaction between language type and etiology on compassion was not significant, $F(1,127) = 0.20$, $p = .652$, $\eta_p^2 = .00$ (See Figure 3). Congruent with our findings on stigma, language type did not impact compassion, but etiology did. Specifically, genetic etiology (low perceived controllability) led to greater compassion than behavioral etiology (high perceived controllability); however, there was no evidence of an interactive effect between language type and etiology on compassion. See Figure 3.

9 DISCUSSION

In summary, genetic etiology (low controllability) led to less stigma and greater compassion than behavioral etiology (high controllability). There were no main effects

of language type on stigma or compassion nor statistically significant interactions between language type and etiology on compassion or stigma. Although nonsignificant, we found a marginal interaction between language type and etiology on stigma but not compassion. In the behavioral etiology condition, identity-first language yielded marginally greater stigma than person-first language; in the genetic etiology condition, this effect was nonsignificant and directionally reversed.

Our manipulation of controllability through etiology was effective as mental illnesses described with behavioral etiological attributions were perceived as more controllable than mental illnesses described with genetic etiological attributions. Previous work has yet to demonstrate the effects of etiological attributions on perceived controllability⁴³. Our vignettes and manipulation check could serve as a model for future research investigating the effects of perceived controllability.

Additionally, our research contributes to the disparate literature on the effects of perceived controllability on stigma and compassion toward people with mental illness. One notable departure from past literature, which uses recognized mental illnesses to examine the influence of controllability on stigma and compassion, is the hypothetical mental illnesses employed in current work^{43;35}. Some previous work indicates that perceived controllability is strongly associated with stigma^{6;15;16}. However, when researchers have used genetic and non-genetic etiological explanations to manipulate perceived controllability, inconsistent effects of etiological explanations on stigma were found². The current work found conditions that were perceived as highly controllable were more stigmatized and viewed less compassionately than conditions that

²for meta-analyses, see Angermeyer et al., 2011; Kvaale et al., 2013^{43;35}

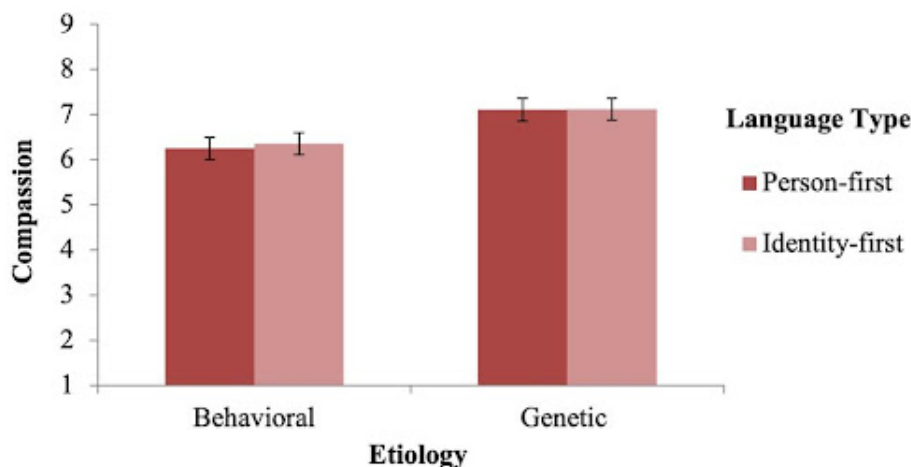


Figure 3. The effect of etiology and language type on compassion. Error bars indicate 95% confidence intervals.

were perceived as uncontrollable. Using hypothetical mental illnesses may have mitigated preconceived attitudes and beliefs about mental illness including perceived controllability and perceived dangerousness – this could aid in explaining why the current work observed robust effects of etiology whereas past work has observed inconsistent findings^{43,35}.

Although statistically nonsignificant, we found preliminary evidence that language type may moderate the effect of etiology on stigma. Future work should try to replicate this effect with a larger sample size or stronger manipulation. Given the debate among language preferences for different communities²⁰, our study suggests that person-first language may help reduce stigma when referring to conditions that are perceived as controllable. More research is needed to understand the interactive effect between language type and perceived controllability on stigma. Importantly, our findings highlight the variety of perceptions of different mental illnesses, as well as the different dimensions of stigma that may contribute to illnesses differently. In short, language-type and anti-stigma strategies must be carefully considered and will vary, based on the specific condition or mental illness.

10 LIMITATIONS & FUTURE DIRECTIONS

As stated above, the current work employed hypothetical mental health illness and did not include actual symptoms of psychopathology which allowed us to hold constant participants' condition-level stereotypes; however, these decisions limit the generalizability of our findings. Outside of the laboratory, people have preconceptions and stigmatizing beliefs about the etiology of recognized mental illnesses. So, emphasizing genetic etiological attributions and minimizing behavioral etiological (compared to minimizing genetic attributions

and emphasizing behavioral attributions) may not result in significantly less stigma and greater compassion, as demonstrated in the current work. To test this hypothesis, a future study could use our genetic and behavioral attribution vignettes to describe recognized mental illnesses (e.g., schizophrenia, depression) and then measure perceived controllability, stigma, and compassion.

The development of mental illness is widely understood through a biopsychosocial model that encompasses social and individual psychological factors in addition to genetics⁴⁴, so it is important to understand how these additional factors influence perceived controllability and stigma. Future research could have participants read vignettes with four etiological attributions for mental health symptoms: behavioral, genetic, psychological, and social. Subsequently, participants should complete measures of perceived controllability, stigma, and compassion. We hypothesize that participants will perceive the conditions in the following order from most controllable to least controllable: behavioral, psychological, social, and genetic. Furthermore, we expect levels of stigma and compassion to correlate with perceived controllability; the more controllable a condition is perceived to be, the more stigmatized and less compassionately the condition will be viewed.

In addition to varying dimensions of language, future work could expand by varying dimensions of stigma. Research indicates that distinct mental illnesses are stigmatized differently³, so we recommend that future research examines the effects of perceived controllability on dimensions of stigma within distinct mental illnesses. The current work focused on overall stigma and did not deconstruct specific dimensions of stigma such as personal blame, desire for social distance, and perceptions of dangerousness and unpredictability. Previous work indicates that different dimensions of stigma respond

differently to genetic attributions^{43;45;35}. There is strong evidence that genetic attributions reduce perceived responsibility, blame, and presumed character flaws toward people with mental illness^{46;47;48} but increase perceived dangerousness and unpredictability^{43;45;35}. Future research should explore how behavioral and genetic etiological attributions affect various dimensions of stigma for hypothetical or recognized illnesses. We hypothesize that genetic etiological attributions would increase perceived dangerousness and unpredictability but reduce personal blame.

Notably, our sample was composed of lay participants, likely including many friends and family members of individuals with mental illness. Given that friends and family are crucial members of the support systems for those with mental illnesses, understanding their stigmatization and compassion toward mental health is paramount. Nonetheless, future work should investigate other relevant populations (i.e., clinicians) to understand if the difference we found in stigma and compassion across behavioral and genetic conditions is replicated. Research shows that clinician compassion is associated with better treatment outcomes, so it is important to understand the antecedents of clinician compassion^{13;12}. Expanding and testing our findings on other populations will inform the generalizability of our initial study.

11 CONCLUSION

The current work found that conditions perceived as highly controllable were more stigmatized and viewed less compassionately than conditions that were perceived as less controllable. Further, a marginally significant interaction between language type and etiology on stigma shows that person-first language may exacerbate stigma in conditions that are perceived as controllable; whereas identity-first language may reduce stigma in conditions that are perceived as uncontrollable. Importantly, this research contributes to our understanding of the antecedents of stigma and compassion toward people living with mental illness. These findings provide novel evidence on how perceived controllability may interact with language-type to inform stigma.

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Authors' Note: All authors contributed equally to the work.

13 EDITOR'S NOTES

This article was peer-reviewed.

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