Diagnostic Attributions Versus Labeling: Impact of Alzheimer’s Disease and Major Depression Diagnoses on Emotions, Beliefs, and Helping Intentions of Family Members

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Labeling theory suggests that applying disease labels to behavior may serve to medicalize deviance and produce stigma. In contrast, attribution theory suggests that this practice may evoke sympathetic responses. Female undergraduates (N = 221) read vignettes describing an older parent exhibiting inappropriate behavior in a social situation, with diagnostic label (Alzheimer’s disease, major depression, no label), personal congruence of the behavior (congruent, incongruent, no information), and parent gender manipulated across participants. Participants rated their emotional responses, attributions, and willingness to help. The Alzheimer’s disease label, and to a lesser extent the major depression label, produced more sympathy toward the parent, less blame, and greater willingness to help, indicating that the provision of these labels may facilitate compassionate attitudes and enhanced caregiving toward older adults. However, participants reported greater anger and higher personality attributions toward fathers than mothers, suggesting that the influence of parent gender on potential caregivers’ reactions warrants further attention.

Diagnosis: Stigma or Sympathy?

Proponents of labeling theory have long suggested that labeling an individual as having a medical or mental disorder leads to a number of negative consequences (Elizur & Minuchin, 1989; Illich, 1976; Langer & Abelson, 1974). Labels can lead to stigma and to resignation for patients as well as their families. Both patients and family members may become divested of responsibility for the “illness,” and family members may distance themselves from the patient. However, attribution theorists suggest that the effects of diagnostic labels may be positive, by decreasing blame of the patient and increasing sympathy for his or her condition (Weiner, 1993). For patients who are rapidly losing brain functions—as AD patients are—and for family members who must deal with associated behavioral deterioration, the effects of a diagnostic label may yield benefits such as more sympathetic appraisals of problem behaviors. Resignation, in such a case, may translate into realistically modified expectations. Our primary purpose in the present study was to explore the impact of the AD label within a controlled experimental paradigm.

Evidence to date suggests that some labels lead to stigma (Weiner, Perry, & Magnusson, 1988), whereas others lead to sympathy and helping (Ray, Raciti, & MacLean, 1992). These differential outcomes appear to be mediated by attributions of responsibility. For example, Weiner and his colleagues (1988) found that when individuals were assigned labels rated high on the dimension of perceived personal responsibility (e.g., AIDS and obesity), study participants directly linked the onset of these conditions to personal behaviors of the individuals so labeled. Participants subsequently reported little pity, much anger, and few help-giving responses. In contrast, the stigma and blame predicted in labeling theory may be eradicated in the presence of certain
medical diagnoses, making it less likely that the patient will be criticized or rejected for deviant behavior and more likely that he or she will receive help (Ray et al., 1992). The provision of appropriate disease labels—particularly when these labels make salient the disease process—thus may lead to clear benefits for patients.

Some investigators have suggested that patients’ self-perceptions and the perceptions of their significant others are more negative when patients are labeled mentally ill than when they are labeled medically ill (Elliott, Byrne, Byrd, MacNair, & Werth, 1993; Hatfield & Lefley, 1987; Wakefield, 1992). However, the distinction between medical and mental illness is seldom a strict dichotomy. Although professionals currently consider AD a neurological disorder, there is no such consensus about MD. Furthermore, the potential of either of these illnesses to produce both physical and psychological symptoms further clouds the distinction between medical and mental illness. Finally, diagnostic labels such as AD and MD may conjure up in a given individual’s mind varying degrees of psychological and biological involvement, and these perceptions may be expected to impact quality of care.

**Additional Determinants of Attributions, Emotional Responses, and Helping**

**Congruence of behavior.**—In addition to the influence of diagnostic labels, attributions, emotions, and helping responses may be influenced by one’s belief that problem behaviors are either typical of or unusual for a given individual. Health professionals, family members, and casual observers often view the occurrence of disruptive or inappropriate behavior in an older adult with initial uncertainty. Clinical observations suggest that some family members of undiagnosed AD patients interpret symptomatic behaviors as typical of the patient, whereas others interpret those behaviors as novel for the patient. In the absence of a diagnosis, there is a strong tendency for family members to attribute a person’s behaviors to that person’s disposition. This tendency to make dispositional attributions for others’ behavior is consistent with the Fundamental Attribution Error (Gilbert, McNulty, Giuliano, & Benson, 1992; Jones & Harris, 1967; Jones & Nisbett, 1972) originally described by Jones and his colleagues.

There is recent evidence that information that disconfirms a dispositional attribution can eliminate spontaneous trait inferences (Van Overwalle, Drenth, & Marsman, 1999). However, even when disconfirming information in the form of a disease diagnosis has been given, the nature of the diagnosis might determine the extent to which trait inferences are eliminated. A recent study of family caregivers of schizophrenia patients, for example, found that a substantial portion of the caregivers attributed negative symptoms to the patient’s personality rather than to the illness, despite the salience of the schizophrenia diagnosis (Harrison, Dadds, & Smith, 1998).

**Parent gender.**—A variable of secondary interest in the present study was parent gender. We know of no studies that have investigated the impact of parent gender on adult children’s initial perceptions of and responses to a parent’s exhibition of ambiguous disease-related behaviors. In this study, we used an experimental paradigm with only female participants to evaluate potential differences in their responses to mothers versus fathers.

**Study Design and Hypotheses**

In the present project, we were interested in participants’ responses to disruptive behavior that might be plausibly attributed to either AD or MD or, alternatively, might be construed as unrelated to any disorder. This paradigm has clinical validity, in that early symptoms of AD such as irritability, forgetfulness, and social withdrawal often are of ambiguous origin and may be difficult even for health professionals to accurately diagnose (Reifler, 1998). We chose MD as an alternative diagnostic label in this study not only because family members of dementia patients often erroneously ascribe symptoms to depression, but also because families take on caregiving roles for both demented and depressed older adults (Hinrichsen, Hernandez, & Pollack, 1992).

Using vignettes, we had participants read about “your mother” or “your father” displaying behaviors that were consistent with early AD but that also might be plausibly attributed to personality factors or to the irritability, memory failures, and social withdrawal associated with MD. We then examined participants’ emotional, attributional, and helping responses to three diagnostic label conditions: AD, a label expected to connote biological bases and both psychological and social effects; MD, a label expected to connote predominantly psychological bases and effects; and a control condition in which no diagnostic label was given. To increase the equivalence of the two diagnostic label conditions and thus the stringency of tests of differences between AD and MD alone, we ensured that biological involvement was made explicit in both conditions.

In addition to parent gender and diagnostic label, the congruence of the inappropriate behavior also was manipulated in this study. The parent’s behavior was described as consistent with his or her usual behaviors, described as deviating from usual behaviors, or left undescribed. We included this manipulation in an attempt to experimentally control for the influence of the Fundamental Attribution Error. In the absence of a diagnostic label, participants were expected to view the parent less favorably across all dimensions when the parent’s behavior was described as congruent with his or her personality. No predictions were made regarding the effect of parent gender on participants’ responses.

We expected that diagnostic labels would influence participants’ attributions, emotions, and helping intentions such that both diagnostic labels, as opposed to no label, would result in (a) lower dispositional attributions, lower attributions of responsibility, and lower attributions of control over behavior, (b) less anger and greater sympathy, and (c) greater willingness to help. Furthermore, we expected that attributions, emotions, and willingness to help would all differ in the direction of greater leniency toward the parent in the AD conditions than in the MD conditions. This expectation was based on the assumption that the popularly medicalized AD label would be more effective than the more psychological MD label in downgrading perceptions of control over behavior.
METHODS

Participants
We recruited 221 female undergraduates (111 White, 95 African American, 10 Asian, 4 Hispanic, and 1 Native American) enrolled in Introductory Psychology at the University of Alabama at Birmingham to participate in the study. Female students were utilized because women are much more likely than men to become family caregivers (Miller & Cafasso, 1992). Participants partially fulfilled course requirements by participating.

Procedure
The experimenter escorted participants into the experiment room in groups ranging in size from 3 to 30. The vignettes and questionnaires had been randomly sorted within prearranged blocks of 18, containing each possible combination of the factors (2 × 3 × 3—parent gender, described congruence of behavior, and diagnostic label). Each consecutive participant was given only 1 of the randomly sorted experimental vignettes in a strictly between-subjects design. The experimenter read introductory remarks describing in general terms the vignettes participants were to read and the questionnaires they were to complete.

After participants listened to prefacing remarks, they read a vignette in which either “your mother” or “your father” was depicted as behaving inappropriately at a family gathering. Immediately after reading the vignette, participants completed a questionnaire in which they rated their responses to the parent on dimensions of emotion, attributions, and willingness to help. Participants then were presented with four questions concerning their feelings toward their own parents, followed by a list of disorders and illnesses in which AD and MD were embedded. Finally, participants were debriefed and issued credit slips.

Materials

Vignette.—After successful piloting, the following vignette was used in the present project. For purposes of clarity, only one version of the vignette is presented here. This vignette depicts a father with incongruent behavior and the AD label. Alternative manipulations for numbered and bracketed text follow this vignette.

Instructions: Please read the following vignette and imagine that the situation described below is happening to you.

You called your (1)[father] earlier this week and invited him and your (2)[mom] to dinner this evening. When your parents arrive, your mother looks strained and tense, and your dad is cursing. They come inside, and your mom follows you into the kitchen. Your dad, however, leaves his coat on and stays near the front door. He calls into the kitchen that he is ready to go home. Your mother, embarrassed, explains in a low voice that your dad insists he did not know they were coming to dinner tonight, although she had told him about it several days ago.

Your mom coaxes your dad to stay and eat supper, emphasizing that you have gone to all the trouble to prepare his favorite meal, pot roast. Your dad is finally persuaded to sit at the table, although he leaves on his coat. He does not eat; he claims that he does not care for pot roast and needs to be home working on the income taxes. (3)[You are surprised by his behavior because it is out of character for him.] Before you and your mom have finished eating, he gets up from the table, walks out the front door, and goes to the street to sit in the car. Your mother fights back tears and excuses herself from the rest of the meal, apologizing for your father’s behavior. (4)[She confides that your father has just been diagnosed with Alzheimer’s disease, which the doctor explained is a degenerative brain disorder.] She promises to call you tomorrow.

Alternative versions of the vignette were as follows:
1. The parent gender manipulation is alternatively expressed as “mother” in one half of the study vignettes; all further references to this parent in the vignette and questionnaire (e.g., him or her, he or she) are consistent with the initial presentation of parent gender.
2. The spouse of the target parent alternatively appears as “dad” and “father” when the target parent is female.
3. In a third of the vignettes, the congruence-of-behavior manipulation alternatively appears as “You are not surprised by his behavior because it is typical of him.” In the final third of the vignettes, no information is given about congruence (control condition for the congruence manipulation).
4. In a third of the vignettes, the diagnostic label manipulation alternatively reads: “She confides that your father has just been diagnosed with major depression, which the doctor explained is a disorder linked to depletion of the brain chemical serotonin.” In the final third of the vignettes, no explanation or diagnostic label is offered (control condition for the diagnostic label factor).

Questionnaires.—Emotions, attributions, and helping intentions were assessed with 11-point, Likert-type rating scales, as follows:

Instructions: Please read the following questions and circle the number that best describes your reactions to your [father] in this situation.

(EMOTIONS)
1. How angry do you feel toward your [father]? [rated from 0 (not at all angry) to 10 (extremely angry)]
2. How sympathetic do you feel toward your [father]? [rated from 0 (not at all sympathetic) to 10 (extremely sympathetic)]

(ATRIBUTIONS)
3. How much do you think [his] behavior is due to something about [his] personality? [rated from 0 (not at all) to 10 (extremely)]
4. How responsible is your [father] for [his] behavior? [rated from 0 (not at all responsible) to 10 (extremely responsible)]
5. How much do you think your [father] is able to control [his] behavior? [rated from 0 (no control) to 10 (extreme control)]

(HELPING INTENTIONS)

6. How willing are you to have your [father] accompany you to the lake cabin where you plan to spend your annual two-week vacation? [rated from 0 (not at all willing) to 10 (extremely willing)]
7. If your [mother] were to die, how willing would you be to have your [father] move in with you? [rated from 0 (not at all willing) to 10 (extremely willing)]

Following these dependent measures, two additional brief questionnaires were attached. These assessed (a) participants’ relationships with their own parents and (b) participants’ beliefs about the causes of various disorders and the degree of control a person with each disorder has. These two measures read as follows:

(a) Now, please think about your feelings toward your own parents, and answer the following questions.

1. How close do you feel to your mother? [rated from 0 (not at all close) to 10 (extremely close)]
2. How close do you feel to your father? [rated from 0 (not at all close) to 10 (extremely close)]
3. How much conflict do you have with your mother? [rated from 0 (no conflict) to 10 (extreme conflict)]
4. How much conflict do you have with your father? [rated from 0 (no conflict) to 10 (extreme conflict)]

(b) Please read the following list of disorders, and rate for each one whether you think the cause of the disorder is primarily biological or psychological. Then rate how much a person with each disorder is able to control his or her behavior. [All items were rated from 0 (primarily biological) to 10 (primarily psychological).]

Perceptions of AD and MD.—As described earlier, we obtained participants’ ratings of relative psychological/biological contributions to the onset of AD and MD and of the degree of control associated with each disorder, using a list of disorders in which these two diagnoses were embedded. On a scale from 0 (primarily biological) to 10 (primarily psychological), AD received a mean rating of 3.00 (SD 3.34) and MD received a mean rating of 7.36 (SD 2.40), collapsed across participants’ label conditions. These ratings differed significantly, $t = 15.71, p < .05$. When examined separately by diagnostic label conditions, however, participants in the MD condition tended to ascribe lower psychological causality to MD than did participants in the AD or no diagnosis conditions, suggesting that the medicalized description of MD exerted its expected impact on those exposed to the MD vignette.

Ratings of control over behavior in AD versus MD also differed significantly, $t = 15.17, p < .05$. On a scale from 0 (complete control over behavior) to 10 (no control over behavior), mean (lack of) control in AD was 8.65 (SD 2.39) and in MD was 5.23 (SD 2.38), collapsed across participants’ diagnostic label conditions.

Primary Analyses

Using a general linear models procedure, we conducted three separate $3 \times 3 \times 2$ between-subjects MANOVAs.

**RESULTS**

**Preliminary Analyses**

We conducted preliminary analyses and descriptive comparisons as manipulation checks and to provide information about potential explanatory mechanisms for the obtained results.

**Participant race.—**In a preliminary omnibus multivariate analysis of variance (MANOVA), we included participant race as an independent variable along with the three experimental variables. This model revealed no main effect of race, $\lambda (7,179) = 1.20, p > .05$, and no interaction of race with label, $\lambda (14,358) = .86, p > .05$; with parent gender, $\lambda (7,179) = .50, p > .05$; or with the behavioral congruence factor, $\lambda (14,358) = 1.12, p > .05$. All multiway interactions were also nonsignificant. The observed power of these MANOVA analyses, which we computed using an alpha level of .05, was generally modest (e.g., .55 for race by label, .69 for race by congruence, and .65 for the four-way interaction term). Finally, there were no significant univariate effects of race; however, the observed power of these tests was even more modest. Because no significant effects emerged as a result of participant race, this variable was not included in the primary preplanned analyses.
These MANOVAs examined the effects of diagnostic label, described congruence of behavior, parent gender, and all possible interactions on the following groups of dependent items: (a) emotions (anger and sympathy), (b) attributions (responsibility, control, and personality contributions to behavior), and (c) helping intentions (willingness to spend vacation and willingness to have parent move in). We used the MANOVA approach to take into account probable correlations among the grouped dependent items and thereby minimize experiment-wise Type I error. When dictated by multivariate effects, univariate effects were examined. Finally, simple effects analyses were conducted when dictated by higher order effects. Multiple comparisons were controlled with the “least significant difference” option, with p levels set at .05.

**Emotional Responses**

The MANOVA examining emotional responses revealed a significant diagnostic label effect, $\lambda (2,203) = 33.45, p < .0001$. The effect of parent gender on emotions approached significance, $\lambda (2,202) = 2.88, p < .06$.

**Anger.**—The univariate tests of between-subjects effects for anger ratings produced two main effects: diagnostic label, $F(2,203) = 17.41, p < .0001$, and parent gender, $F(1,203) = 5.05, p < .05$. The diagnostic label effect was due to significantly greater anger in the absence of a label than in either diagnosis condition, as well as significantly greater anger toward parents diagnosed with MD than toward those diagnosed with AD. These results are illustrated in Table 1.

The parent gender effect was due to significantly greater anger toward the parent described as father ($M = 4.97, SD = 3.31$) than toward the parent described as mother ($M = 4.03, SD = 3.07$), $p < .05$.

**Sympathy.**—The univariate tests for sympathy resulted only in a significant main effect of the diagnostic label factor, $F(2,203) = 30.20, p < .0001$. Follow-up tests revealed that sympathy was significantly greater in the AD conditions than in either MD or no label conditions. Furthermore, sympathy toward parents given the MD label was significantly greater than toward parents given no diagnostic label. As shown in Table 1, the pattern of sympathy as a function of diagnostic label provided a mirror image of the obtained pattern for anger.

<table>
<thead>
<tr>
<th>Diagnostic Label</th>
<th>Anger Mean (SD)</th>
<th>Sympathy Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alzheimer’s disease</td>
<td>3.13 (2.96)</td>
<td>8.43 (2.41)</td>
</tr>
<tr>
<td>Major depression</td>
<td>4.42 (2.97)</td>
<td>7.23 (2.93)</td>
</tr>
<tr>
<td>No label</td>
<td>6.04 (3.08)</td>
<td>4.96 (2.95)</td>
</tr>
</tbody>
</table>

**Attributions**

The MANOVA examining attributions revealed significant effects for diagnostic label, $\lambda (3,202) = 16.21, p < .0001$, and congruence of behavior, $\lambda (3,202) = 4.33, p < .01$; a label by congruence interaction, $\lambda (4,203) = 3.69, p < .01$; and a three-way interaction, $\lambda (4,203) = 3.41, p < .01$.

**Responsibility.**—Univariate analyses of the extent of responsibility attributed to the parent revealed a significant main effect for diagnostic label, $F(2,203) = 22.21, p < .0001$, as well as a significant three-way interaction (Label $\times$ Parent Gender $\times$ Congruence of Behavior), $F(4,203) = 2.75, p < .05$. The three-way interaction was analyzed by parent gender. When the parent was female, only a main effect for diagnostic label was obtained, $F(2,102) = 9.71, p < .0001$. Mothers were held significantly more responsible in the no label and MD conditions than in the AD conditions, but responsibility in the no label and MD conditions did not differ (see Figure 1). When the parent was male, we obtained a diagnostic label effect, $F(2,101) = 13.72, p < .0001$, and a label by congruence interaction, $F(4,101) = 2.47, p < .05$. Fathers were held significantly more responsible for their behavior in the no label conditions than in either diagnostic label condition, as well as significantly more responsible in the MD conditions than in the AD conditions. Simple effects analyses revealed that when behavior was described as congruent (“typical”) or when no information on congruence was given, fathers were held most responsible in the pattern described previously (no label > MD > AD). When behavior was described as incongruent (“not typical”), however, mean responsibility did not differ as a function of diagnostic label (see Figure 2).

**Control.**—Univariate analyses of the degree of control ascribed to the parent revealed a significant main effect for diagnostic label, $F(2,203) = 11.67, p < .0001$, and a significant three-way interaction (Label $\times$ Parent Gender $\times$ Congruence of Behavior), $F(4,203) = 2.91, p < .05$. The three-way interaction was analyzed by parent gender. When the parent was male, a main effect for diagnostic label solely accounted for the significant model. The diagnostic label effect, $F(2,101) = 9.31, p < .001$, was due to participants’ assigning fathers significantly more control over their behavior in the no label conditions than in either diagnostic label condition, as well as significantly more control in the MD conditions than in the AD conditions. This effect is shown in Figure 3.

When the parent was female, a main effect for diagnostic label, $F(2,102) = 4.40, p < .05$, also was obtained. Mothers
were viewed as significantly more able to control their behavior in the MD and no label conditions than in the AD conditions. Like attributions of responsibility for mothers, mean ratings of control over behavior did not differ between the MD and no label conditions. For mothers, as opposed to fathers, a label by congruence interaction also was obtained, $F(4,102) = 2.46$, $p = .05$. Follow-up comparisons revealed that mothers were assigned higher ratings of control in the MD or no-label conditions than in the AD conditions only when behavior was described as not typical. When behavior was described as typical or left undescribed, no differences in control as a function of diagnostic label were found. These effects are shown in Figure 4.

**Personality.**—We included the personality variable to provide a check of the congruence manipulation. When behavior was described as typical of the parent, participants were expected to attribute higher mean levels of personality involvement to the parent’s behavior than when behavior was described as uncharacteristic of the parent. When no information about congruence of the behavior was given, participants were expected nonetheless to attribute behavior to personality to a larger degree than in the atypical conditions. This expectation was derived from the Fundamental Attribution Error phenomenon described previously. Univariate tests revealed a significant label by congruence interaction, $F(4,203) = 3.55$, $p < .01$, and label, congruence, and parent gender each exerted main effects as well ($F$s = 13.13, 6.32, and 5.16, respectively, all $p$ s < .05). The label by congruence interaction was further analyzed with tests of simple effects. The congruence manipulation did not significantly influence personality attributions in the AD and MD conditions but did influence those attributions in the predicted pattern in the absence of a diagnostic label (typical, no information > not typical). Moreover, the diagnostic label factor influenced personality ratings under typical and no information conditions (no label > AD, MD) but not under conditions in which behavior was described as not typical. Under these conditions, mean ratings of personality contribution to behavior did not differ by diagnostic label, as shown in Figure 5.

The parent gender main effect was due to higher personality attributions for fathers ($M = 4.76$, $SD = 3.03$) than for mothers ($M = 3.83$, $SD = 3.09$), collapsed across label and congruence variables.

**Helping Intentions**

A MANOVA examining helping intentions revealed a significant effect for diagnostic label, $\lambda (2,203) = 9.62$, $p < .0001$, and a label by congruence interaction, $\lambda (4,203) = 4.51$, $p < .01$. A multivariate parent gender by congruence interaction effect was found, $\lambda (2,203) = 3.65$, $p < .05$, but this effect was not maintained in either of the follow-up univariate analyses.

**Vacation.**—Univariate tests of variability in participants’ willingness to spend a 2-week vacation with the parent revealed a significant diagnostic label main effect, $F(2,203) = 6.23$, $p < .005$, and a label by congruence interaction, $F(4,203) = 4.16$, $p < .005$. The main effect was such that willingness to spend one’s vacation with the parent was greater in AD conditions than in MD or no label conditions, in which willingness did not differ.

Figure 2. Attributions of responsibility for father by diagnostic label and described congruence of behavior, rated from 0 (not at all responsible) to 10 (extremely responsible).

Figure 3. Attributions of control for father by diagnostic label, rated from 0 (no control) to 10 (extreme control).

Figure 4. Attributions of control for mother by diagnostic label and described congruence of behavior, rated from 0 (no control) to 10 (extreme control).

Figure 5. Attributions of personality contribution to behavior by diagnostic label and described congruence of behavior with usual behaviors, rated from 0 (not at all) to 10 (extremely).
Simple effects analyses of the label by congruence interaction yielded the following results. Across label conditions participants’ willingness to spend their vacations with their parents did not differ as a function of behavioral congruence in the AD and MD conditions, but did differ in the expected direction in the absence of a diagnostic label (not typical > typical, no information). When the parent’s behavior was described as typical, participants were significantly more willing to spend their vacations with parents diagnosed with AD than with MD or with no label. However, when no information about typicality of behavior was given, participants were equally willing to spend their vacations with parents diagnosed with either AD or MD; with either diagnosis, willingness was significantly greater in no label conditions. These results are shown in Figure 6.

**Move in.**—Univariate analyses revealed that participants’ willingness to have the target parent move in if the other parent were to die differed only as a main effect of diagnostic label, $F(2,203) = 8.21, p < .0005$. Mean willingness was greater in AD ($M = 6.96, SD = 2.76$) and MD ($M = 6.36, SD = 2.90$) conditions than in the no label conditions ($M = 5.08, SD = 3.06$). Willingness in AD and MD conditions did not differ.

**DISCUSSION**

Our results support the contention that diagnostic labels significantly influence emotional responses, attributions, and willingness to help the individuals to whom these labels are attached. Specifically, these findings suggest that attributions of responsibility and control over behavior depend in part on the presence and nature of a diagnostic label. Moreover, the attributions associated with a given diagnosis are accompanied by differences in the intensity and valence of emotional responses and in the expressed intention to help, consistent with prior research examining the relationships between attributions, emotions, and intentions (Karasawa, 1991; Meyer & Mulherin, 1980; Weiner, 1980, 1993; Weiner, Graham, & Chandler, 1982; Weiner et al., 1988).

The AD diagnosis was associated by participants with primarily biological cause and was effective in evoking greater sympathy and less anger, judgments of less responsibility and lower personality contributions to behavior, and greater willingness to help. The positive impact of the AD label demonstrates that in the case of this particular diagnosis, diagnosis has clear potential benefits for family caregivers and the recipients of their care. We consider this finding to be the primary contribution of this study.

The MD diagnosis was associated with primarily psychological cause by study participants, collapsed across diagnostic label conditions. Overall, the MD diagnosis was less effective than the AD diagnosis in reducing negative reactions. Particularly toward mothers diagnosed with MD, reactions were often equivalent to those toward mothers with no diagnostic label. In general, however, this diagnosis evoked more compassionate attitudes and responses than those elicited when no diagnosis was provided.

Participants’ expressed willingness to help their parents generally was enhanced by the presence of a diagnosis. Participants were more willing to spend their annual vacations with parents who were diagnosed with AD than those diagnosed with MD or given no diagnosis. However, they were more willing to have their parents move in if the parents were diagnosed with either AD or MD than if they were given no disease diagnosis. Willingness to make this very costly sacrifice was surprisingly high overall and may have been influenced by participants’ desires to present themselves favorably. It is worth noting that the “move in” question was the only dependent item that elicited a hypothetical response (how willing would you be) rather than an immediate response (how willing are you, how angry are you, etc.). Self-presentation effects are most likely to pose a problem in this instance.

Our manipulations of behavioral congruence produced the pattern of results predicted for attributions and willingness to help in the absence of a diagnostic label. If no disease diagnosis by which to interpret behavior was given to participants, they made fewer dispositional attributions and more benign attributions of responsibility and control only when they believed that the observed behaviors were not typical of the target parent. When no information about congruence was given, participants’ reactions were equivalent to those of participants who were explicitly told that the behaviors were typical of the parent. Thus, in the absence of a diagnostic label, the Fundamental Attribution Error was demonstrated. In the presence of a diagnostic label, however, the effects of the congruence factor were obscured. In general it appears that diagnosis overshadowed information about the congruence of behavior in influencing responses. Our results extend in two ways the finding of Van Overwalle and colleagues (1999) that disconfirming information can eliminate spontaneous trait inferences. First, diagnostic information appears to be a specific type of disconfirming evidence that can eliminate spontaneous trait inferences. Second, our results suggest that the diagnostic label of AD can effectively override not only spontaneous inferences but also even explicit information that certain behaviors are congruent with personality.

An unexpected finding of this study was that when behavior was described as uncharacteristic of the parent, attributions of responsibility and personality, as well as helping intentions, were equivalent across the diagnostic label factor. In general, it appears that participants used information that behavior was not characteristic of the parent to give the parent greater latitude for aberrant behaviors, irrespective of diagnostic label. It is interesting to speculate that partici-
pants confronted with behavior described as atypical of the parent might have suspected a disease process as one explanation for that behavior, even in the absence of a disease diagnosis.

This study produced unanticipated effects of parent gender. Although sympathy was elicited equally by fathers and mothers, fathers elicited more anger than mothers, irrespective of diagnosis. Attributions about behavior varied across parent gender, as well. Attributions of responsibility and control were lower for fathers diagnosed with either AD or MD than for fathers given no diagnosis. For mothers, the diagnosis of MD evoked reactions that were more similar to those evoked in the absence of a diagnosis than to those evoked by the AD diagnosis. Nevertheless, mothers were assigned lower levels of responsibility overall for their behavior. Finally, willingness to help fathers and mothers did not differ and was generally high.

With respect to our findings associated with parent gender, there are several reasons for caution. These findings may have been due to several factors other than gender per se. Obviously, “your mother” and “your father” connote more than gender; these terms connote specific parental relationships. Accordingly, we found in this study that our female participants’ subjective experiences of closeness and conflict with their own parents were subtly associated with their attributions and expressed helping intentions. Furthermore, these associations and all experimental effects as a function of parent gender must be considered in light of the participant population’s being entirely female. Female participants were used in this study because they are most similar to the population that assumes familial caregiving roles (e.g., Miller & Cafasso, 1992). It is not known if male participants would respond in the same ways. However, to date the literature describing gender influences on causal attributions about disease has produced mixed results, with some studies demonstrating more leniency and less blame among female participants (Dowell, Lo Presto, & Sherman, 1991) and others yielding the opposite finding (Klonoff & Landrine, 1994).

The vignette methodology of our study has inherent limitations. The responses given by study participants in reaction to our hypothetical vignettes were not assumed to be identical to their responses in actual situations, but they were expected to provide a reliable estimate of actual behavioral reactions. This methodology permitted experimental control of theoretically relevant variables that otherwise might have been difficult or impractical to manipulate, and it is a methodology that has been well accepted for testing models of social behavior (Weiner, 1980). Furthermore, prior laboratory studies using this methodology have yielded findings that are consistent with those from field studies (see Sacco & Dunn, 1990). Such convergence lends support to the validity of vignette methodology.

Validity checks suggested that our experimental manipulations were effective. By surveying a large sample of college women, we maximized our study’s internal validity but perhaps limited its generalizability to family caregivers. A field examination of attitudes and actions among family caregivers of patients with early dementia or psychological disorders would be a logical extension of this study.

An additional important aspect of diagnostic labeling was not addressed in this study, and that issue is the direct impact of diagnosis on patients themselves. Although diagnosis allows patients and families to receive treatment and plan for the future (Mace, Rabins, & McHugh, 1999), future research should ascertain the psychological impact of knowing one’s diagnosis of AD. Such research can determine whether knowledge of the diagnosis may be helpful to patients in understanding their condition, whether the knowledge may be demoralizing, or whether the disease process may, in effect, render the information irrelevant.

**Implications for Public Education**

It is noteworthy that although our college student participants rated AD as primarily biologically based along a biological/psychological continuum, there was nevertheless substantial variability in their beliefs about its biological basis. This finding suggests that there is room for further education of the public about AD.

**Implications for Caregivers and Caregiver Interventions**

Theoretical models of caregiving suggest that caregivers’ appraisals of distress are in part determined by their attributions about the causes of patients’ behavior problems. Furthermore, attributions that contribute to subjective distress are important determinants of caregiver depression (Haley, Levine, Brown, & Bartolucci, 1987; Schulz, Gallagher-Thompson, Haley, & Czaja, 2000). Our study suggests that diagnosis, coupled with education stressing the disease process and the link between the disease and problem behaviors, may alter attributions and thereby help alleviate the distress that can engender caregiver depression. Interventions should encourage caregivers of AD patients to alter appraisals by attributing disruptive behaviors to the disease rather than to the patient (Gallagher-Thompson & DeVries, 1994; Teri, Logsdon, Uomoto, & McCurry, 1997). Such interventions are likely to decrease anger, increase sympathy for the patient, and enhance caregivers’ willingness to provide care.

**Theoretical Contribution**

Recent research investigating attributions toward older adults has included the study of negative old age stereotypes (Hummer, Garstka, Shaner, & Strahn, 1994; Slotterback & Saarnio, 1996) and perceptions of memory failures as a function of age (Bieman-Copland & Ryan, 1998; Erber, Prager, Williams, & Caiola, 1996). In the present study we extend the research on attributions concerning older adults by investigating the growing practice of applying diagnostic labels to certain behaviors. Despite its limitations, we believe that the present study offers evidence that assigning a diagnosis to the often-ambiguous behaviors that accompany early AD can promote understanding and enhance treatment of patients by their family members. Because we found that attributions, emotions, and helping intentions were more favorable in light of either an AD or an MD diagnosis than no diagnosis, it appears that at least these particular diagnostic attributions provide benefits and do not produce the stigmatizing effects predicted by labeling theory. This support for attribution theory over labeling theory suggests that clinicians should have less concern about stigmatizing people by labeling them with DSM diagnoses.
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