Empathic Correlates of Witnessing the Inhumane Killing of an Animal:
An Investigation of Single and Multiple Exposures

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Abstract
Seventy-five adults who reported witnessing at least 1 animal being killed inhumanely participated in a study of 5 measures of empathy from the Interpersonal Reactivity Index (IRI) (Davis, 1980) and the Animal Attitude Scale (AAS) (Herzog, Betchart, & Pittman, 1991): Perspective Taking (PT), Fantasy (FS), Emotional Concern (EC), Personal Distress (PD), and Animal Attitudes (AA). Females showed greater sensitivity (4 of 5 scales) on a 2-way MANOVA with Sex (male, female) and Witnessing Killing (never, once, multiple) as independent variables. Individuals who witnessed multiple killings were higher on PT and lower on PD scales. Lower PD for those who witnessed multiple killings suggests hardening or habituation related to exposure. Alternatively, they may lack resistance to involvement in situations leading to animal violence. Higher PT scores related to multiple killings may indicate a natural leaning toward the cognitive—rather than affective—or dissociation between cognitive and affective. A shift to the cognitive, as a defense mechanism, suggests a dissociation hypothesis. Implications extend to the need for refined research in the developmental sequence of animal abuse and empathy, and humane education.

Keywords
animal abuse; attitudes; empathy; humane education; IRI; AAS; killing animals; violence graduation

Introduction
The idea that violence toward nonhuman animals is related to violence against humans is not a new premise. For almost five decades, researchers have continued to explore correlations between animal abuse and human-directed violence (Arluke, Levin, Cartier, & Ascione, 1999). Flynn (2000) has argued for the importance of family professionals recognizing the impact that violence toward
animals has on all aspects of society. In addition, Flynn (2001) acknowledges the problem of animal abuse independent of any potential impact it may have on human violence. As early as the 1800s, there was belief throughout the Victorian middleclass that cruelty to animals led to violence later in life (Grier, 1999). Exploring this “violence graduation hypothesis” (p. 963), Arluke et al. pointed to two methodological problems in prior studies. First, researchers have generally relied on self-reports from individuals who came from troubled sample groups such as criminals. Second, violence tended to be the only dependent variable. From their investigation, they suggested that animal abuse might better be viewed as an anti-social behavior, not necessarily as a graduation from animal abuse in childhood to violent behavior as an adult.

Although methodological concerns regarding violence graduation should be cautiously observed (Arluke et al., 1999; Beirne, 2003; Felthous & Kellert, 1986), other research supports a relationship between animal abuse and violence. One area of recent interest lies in exploring the link between participation in animal abuse in childhood and cruelty or violence later in life (Felthous & Kellert, 1986; Henry, 2004b; Hensley & Tallichet, 2005; Kellert & Felthous, 1985; Merz-Perez, Heide, & Silverman, 2001; Miller, 2001; Tallichet, Hensley, & Singer, 2005; Wright & Hensley, 2003). Interestingly, much of this literature explores the impact of participation in animal abuse, while little is known about the effects that witnessing animal abuse has on an individual (Flynn, 2001). In a study involving a group of convicted felons and a group of university students (Miller & Knutson, 1996), an alarming two-thirds of males from both experimental groups reported childhood exposure to some form of animal cruelty—though there was no support for the claim that animal cruelty is associated with violent criminal acts. The authors questioned whether more extreme, or more frequent, acts of violence against animals yield more conclusive causal links. Similarly, Henry (2004b) reported interesting, though tenuous, findings related to the observation of animal abuse. Although exposure to animal abuse correlated with later participation in animal abuse, mediating factors such as age and sex were considered (Henry, 2004b) as well as the presence of certain antisocial behaviors (Henry, 2004a). Specifically, males who observed animal cruelty prior to age 13 were more likely to participate in later cruelty acts and delinquent behaviors than were those who had never observed animal abuse. Left unanswered are the questions related to extreme acts of animal violence.

Although the connection between animal abuse and violent behavior has become the focus of recent attention, another relationship worth exploration is that of animal abuse and psychological correlates related to empathy. As the violence-graduation hypothesis advances the notion of progression from animal abuse to physical violence toward humans, the relationship between animal
abuse and animal care and mediation of psychological correlates tied to the development of empathy also need to be considered. As previously mentioned, this was often observed in Victorian society (Grier, 1999), as there was a presumption that kindness toward animals leads to caring behaviors toward humans.

Other researchers have offered various findings that suggest positive relationships between feelings for animals and empathy (Daly & Morton, 2006; Hergovich, Monshi, Semmler, & Ziegelmayer, 2002; Taylor & Signal, 2005; Vizek-Vidovic, Stetic, & Bratko, 1999). Although the assumption that empathy for humans and empathy for animals is equivalent is an empirical question yet to be answered, it does have a conceptual and logical equivalence. Paul and Serpell (1993) found that companion-animal caretaking (pet ownership) in childhood correlated with increased concern for both pets and humans in adulthood. However, they reported that empathy toward humans, as a direct result of childhood pet-keeping, was not strong and required further investigation. More recently, Henry (2006) noted that animal abusers and non-abusers could not be differentiated on empathy scales and questioned whether empathy toward humans was even related to mistreatment of animals. This extends earlier research findings by Henry (2004a), in which only limited support was found that connected exposure to animal cruelty to the development of concern for living things.

Yet, in some ways, attitude toward animals appears to correlate, to empathy. Daly and Morton (2006) found that children who had a positive attitude toward animals were more empathic than those with a negative attitude. Taylor and Signal (2005) reported a positive relationship between empathy and attitudes toward animals and an apparent correlation between human-directed empathy and animal-directed empathy.

Although these results suggest some concurrence between human and animal empathy, the authors pointed to the need for further research in order to explore the link between empathy and attitudes toward animals. Mathews and Herzog (1997) found that the Cattell personality subscale for sensitivity (“Tough-minded vs. Tender-minded”) was positively associated with attitude toward animals.

The psychological measures that have been employed in the above-mentioned research, as well as in other published works, serve to help build a profile of correlates of animal abuse that may lead to a better understanding of developmental sequences, causal direction, and conceptual analysis in human-animal interactions. Profiles may be seminal at this stage of research.

One psychological construct that facilitates profile-building and thinking about animal abuse and human behavior is empathy. In fact, there seem to be aspects of empathy that may contribute to an informative, exploratory framework.
As such, to obtain aspects of empathy for the conceptualization of empathy with respect to this study, we used Davis’ (1980) original definition. Emphasizing the multidimensional nature of empathy as being both cognitive and affective, Davis’ conceptualization contains four components that contribute to both of these elements:

1. Perspective Taking;
2. Fantasy;
3. Emotional Concern; and
4. Personal Distress.

In a sense, Perspective Taking and Fantasy comprise a cognitive component, whereas Emotional Concern and Personal Distress seem to align with an affective component. Elsewhere, empathy has been succinctly defined as a measure of cognitive perspective-taking, as well as a measure of the capacity for warm, compassionate feelings for another person (Lawrence, Shaw, Baker, Baron-Cohen, & David, 2004). For our consideration in this paper, we also included an attitudinal measure (Herzog, Betchart, & Pittman, 1991) that would capture one’s general feeling toward animals: the Animal Attitude Scale (AAS), a 20-item, self-report questionnaire to measure individual attitudes toward animals. A study that also employed the AAS (Taylor & Signal, 2005) reported that human empathy was linked to animal attitudes. As previously mentioned, violence-graduation and anti-social hypotheses have merit; however, we endeavor to build a profile of aspects of empathy that could serve as a mediating mechanism for both violence-graduation and anti-social behavior hypotheses.

The purpose of the present study, then, was to examine whether there was a relationship between experiencing (“witnessing”) animal abuse and psychological measures related to aspects of empathy. Although human-and animal-directed empathy have been distinguished as distinct constructs in the literature (Baron-Cohen & Wheelwright, 2004; Davis et al., 1999; Mehrabian, Young, & Sato, 1988), psychological measures of general empathy—that is, those that would apply to human- or to animal-directed empathy—can assist with profile building. Thus, both empathy measures and attitudinal measures are considered of value here. Consequently, our research question asks: Are there differences in the psychological profile of adults—with respect to variables related to empathy and attitude—for those who have witnessed the inhumane killing of an animal? If so, are these differences related to degree of exposure? As a working hypothesis, we predicted attrition of healthy psychological attributes as a function of exposure to the killing of animals. For instance, lower empathy may drive progressively worse violent and/or antisocial behavior. Such attrition would support both the violence-graduation and the anti-social hypotheses, offering a possible mechanism for either hypothesis.
Method

Participants

The study was comprised of 427 (M = 136, F = 288) undergraduate students from a university in southwestern Ontario (Canada). Incomplete data for various variables of interest reduced the usable sample size to 387 (M = 119, F = 268). All were enrolled in a large, on-line, introductory writing class open to all undergraduate students; their participation was solicited on the course website. They completed the survey on Survey Monkey, an internet website. Ages ranged from 17 to 52 years, though the majority (73%) was in the 18-21 range; 16% were aged 22-24. The broad range of declared majors exceeded 10, including Sociology (19%); Psychology (16%); Business (15%); and Science (8%). Seventy-five individuals reported having witnessed at least one animal being killed in an inhumane manner at least one time.

Instruments

AAS (et al., 1991). As previously stated, the AAS is a 20-item, self-report questionnaire to measure individual attitudes toward animals; answers range from “Strongly Agree” to “Strongly Disagree.” An additional item was added to the author’s version. The original questionnaire reads, “There should be extremely stiff penalties, including jail sentences, for people who participate in cock-fighting” (n.p.). As a point of future interest in discriminating between potentially different attitudes toward birds and dogs (Daly & Morton, 2003, 2006), the added item reads, “There should be extremely stiff penalties, including jail sentences, for people who participate in dog-fighting” (n.p.).

Inventory of Animal-related Experiences (Boat, 1999). Individual history of pet ownership and personal experiences with animal abuse was determined using a revised version of this measure, as previously modified and used by Flynn (1999) and Henry (2004b). The 74-item survey comprises 3 sections: (a) questions pertaining to: history of pet ownership and attachment; (b) the observation of animal abuse; and (c) the participation in animal abuse. It should also be noted that the survey specifies that references to killing animals refer to inhumane treatment, thus excluding instances related to hunting, fishing, and euthanasia.

Interpersonal Reactivity Index (IRI) (Davis, 1980). The IRI is one of the most effective (Muncer & Ling, 2006) and commonly used, self-report empathy instruments (Alterman, McDermott, Cacciola, & Rutherford, 2003) and has been employed in recent HAI investigations (Henry, 2006; Taylor & Signal, 2005). It has excellent reliability and validity. Participants indicate their
responses on a five-point Likert scale ranging from “Does Not Describe Me Well” to “Describes Me Very Well.” The 28 items comprise 4 subscales, each of which taps 4 different dimensions of empathy and assesses 4 distinct qualities (Davis, 1980). The four subscales are

1. Fantasy Scale (FS), which explores the respondent’s inclination to identify with fictitious characters such as those from books or movies;
2. Perspective Taking Scale (PT), which measures the individual’s ability to adopt another person’s view;
3. Empathic Concern Scale (EC), which assesses the respondent’s ability to feel compassion for others who engaged in negative experiences;
4. Personal Distress Scale (PD), which indicates the extent to which individuals witness others’ negative experiences, resulting in their own anxiety and discomfort.

This empathy instrument has been used in previous research to measure human-directed empathy (Alterman et al., 2003; Miller & Eisenberg, 1988; Perez-Albeniz & de Paul, 2004); however, Taylor and Signal (2005) have reported significant correlations between this instrument and attitudes toward animals (Empathic Concern Scale, $r = .33$).

Results

A two-way, 2 X 3 multivariate analysis of variance (MANOVA) was computed with Sex (male, female) and Having Witnessed the Killing of an Animal (never, once, multiple) as the independent variables with the five “psychological measures” (four empathy scales from the IRI and the AAS) as dependent variables linked to empathy. The AAS did correlate with the four IRI empathy scales ($p < .05$, with coefficients ranging from $r = .11$ to $r = .23$); therefore, we included the AAS in our analysis as a possible aspect of empathy. Means and standard deviations are reported in Table 1. A substantial number of respondents ($N = 75$; $M = 37, F = 38$) reported having witnessed at least one animal being killed in an inhumane manner. In the omnibus test for the MANOVA, there was a main effect for Sex, $F(5, 379) = 7.70, p < .001$ (Eta-squared = .092), and for Having Witnessed the Killing of an Animal, $F(10, 760) = 2.37, p < .01$ (Eta-squared = .030); however, there was no interaction effect, $F(10, 760) = 0.03, p > .1$. In the subsequent univariate tests for Sex differences, four of the five scales were significant, with females showing consistently higher ratings on the FS scale ($p < .05$, Eta-squared = .010), the EC scale ($p < .001$, Eta-squared = .054), the PD scale ($p < .01$, Eta-squared = .021), and the AAS ($p < .001$, Eta-squared = .039).
We view these Sex effects as consistent with the commonplace finding that females tend to exhibit higher empathy (Baron-Cohen & Wheelwright, 2004; Daly & Morton, 2006).

The univariate analyses for Having Witnessed the Killing of an Animal revealed differences on Perspective Taking (PT) ($p < .01$, Eta-squared = .032), and Personal Distress ($p < .05$, Eta-squared = .031). Post hoc testing (Tukey) revealed those who had witnessed the killing of an animal more than once (Multiple) had higher PT scores [mean = 3.72]) when compared to Never (mean = 3.48, $p < .05$), and Once (mean = 3.21, $p < .01$). On the PD scale, the Multiple group (mean = 2.43) was lower than Never (mean = 2.79, $p < .01$) and Once (mean 2.91, $p < .01$). In effect, witnessing multiple killings correlates with better perspective-taking and lower personal distress.

### Table 1. Means and Standard Deviations On the Five Psychological Measures—Interpersonal Reactivity Index (IRI) and the Animal Attitude Scale (AAS)—for Young Male and Female Adults Witnessing the Killing of an Animal

<table>
<thead>
<tr>
<th>Witnessing Killing of an Animal</th>
<th>Never</th>
<th>Once</th>
<th>Multiple</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>Sex</td>
<td>Sex</td>
<td>Sex</td>
</tr>
<tr>
<td>Male</td>
<td>3.27</td>
<td>2.98</td>
<td>2.83</td>
</tr>
<tr>
<td>Female</td>
<td>3.55</td>
<td>3.26</td>
<td>3.09</td>
</tr>
<tr>
<td>Perspective Taking Scale</td>
<td>Mean</td>
<td>SD</td>
<td>N</td>
</tr>
<tr>
<td>Mean</td>
<td>3.16</td>
<td>.61</td>
<td>86</td>
</tr>
<tr>
<td>SD</td>
<td>3.41</td>
<td>.80</td>
<td>226</td>
</tr>
<tr>
<td>N</td>
<td>3.16</td>
<td>.68</td>
<td>10</td>
</tr>
<tr>
<td>IRI Fantasy Scale Mean</td>
<td>3.33</td>
<td>.51</td>
<td>10</td>
</tr>
<tr>
<td>SD</td>
<td>3.37</td>
<td>.50</td>
<td>10</td>
</tr>
<tr>
<td>N</td>
<td>3.33</td>
<td>.72</td>
<td>28</td>
</tr>
<tr>
<td>IRI Emotional Concern Scale</td>
<td>Mean</td>
<td>SD</td>
<td>N</td>
</tr>
<tr>
<td>Mean</td>
<td>3.42</td>
<td>.45</td>
<td>86</td>
</tr>
<tr>
<td>SD</td>
<td>3.67</td>
<td>.47</td>
<td>226</td>
</tr>
<tr>
<td>N</td>
<td>3.33</td>
<td>.51</td>
<td>10</td>
</tr>
<tr>
<td>IRI Personal Distress Scale</td>
<td>Mean</td>
<td>SD</td>
<td>N</td>
</tr>
<tr>
<td>Mean</td>
<td>2.68</td>
<td>.59</td>
<td>86</td>
</tr>
<tr>
<td>SD</td>
<td>2.83</td>
<td>.61</td>
<td>226</td>
</tr>
<tr>
<td>N</td>
<td>2.83</td>
<td>.72</td>
<td>10</td>
</tr>
<tr>
<td>Animal Attitude Scale Mean</td>
<td>3.18</td>
<td>.51</td>
<td>86</td>
</tr>
<tr>
<td>SD</td>
<td>3.52</td>
<td>.53</td>
<td>226</td>
</tr>
<tr>
<td>N</td>
<td>3.25</td>
<td>.50</td>
<td>10</td>
</tr>
</tbody>
</table>

Sex did not interact with Having Witnessed the Killing of an Animal for the five psychological measures, so we exclude it from our interpretation; yet, it was clear from the sex distribution that there was a greater proportion of males
in the Multiple category (Table 2). Crosstabs with Chi-square analysis, Chi-square \( (2) = 17.55, p < .001 \), confirmed this.

**Table 2. Sex Distribution for Those Witnessing the Killing of an Animal**

<table>
<thead>
<tr>
<th>Witnessing Killing of an Animal</th>
<th>Sex</th>
<th>Count</th>
<th>% within Witnessing Killing of an Animal</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>Male</td>
<td>86</td>
<td>27.6%</td>
<td>312</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>226</td>
<td>72.4%</td>
<td></td>
</tr>
<tr>
<td>Once</td>
<td>Male</td>
<td>10</td>
<td>27.0%</td>
<td>37</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>27</td>
<td>73.0%</td>
<td></td>
</tr>
<tr>
<td>Multiple</td>
<td>Male</td>
<td>23</td>
<td>60.5%</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>15</td>
<td>39.5%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Male</td>
<td>119</td>
<td>30.7%</td>
<td>387</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>268</td>
<td>69.3%</td>
<td></td>
</tr>
</tbody>
</table>

From the percentages reported in the table, it would appear that males are more likely than females to have witnessed multiple killings. This is a different pattern from that seen for the Never category and the Once category. Thus, males may be the cause for higher PT and lower PD scores here and worth considering more closely in future research.

Separate examination by MANOVA of those who had intentionally killed a pet \( (N = 5) \), or a wild animal \( (N = 9) \) was precluded by the small sample sizes for these two groups. Of interest, however, were crosstabs analyses for (a) those who had killed a pet, as there was no sex difference \( (M = 3, F = 2) \), Chi-square \( (1) = 1.81, p > .1 \); and (b) those who had killed a wild or stray animal, as there was a sex difference \( (M = 6, F = 3) \), Chi-square \( (1) = 5.05, p < .05 \). Although these effects are suspect given the small cell sizes, we include them here as points of interest.

**Discussion**

The working hypothesis predicting attrition of positive psychological empathy attributes as a function of exposure to killing of animals was not supported. In fact, the effects were somewhat contrary to predictions. Those who had witnessed multiple killings of an animal actually exhibited lower, not higher, scores on the PD scale and higher, not lower, scores on the PT scale. There were no
differences with respect to Fantasy, Empathic Concern, and Attitudes to Animals. It is possible that these score anomalies for Perspective-Taking and Personal Distress are directly, or tangentially, related to events of animal abuse. Equally likely, however, is that witnessing multiple killings of animals may be a proxy for a larger scenario of a young life in turmoil—family-driven turmoil, peer-driven turmoil, or psychologically driven turmoil.

This, then, raises the following question: Why would turmoil lead to less distress and better perspective-taking? For example, why would this be the case with perspective-taking? Is it because such individuals must become socially and psychologically adept at reading others (via sociolinguistics, paralinguistics, or pragmatics) in order to survive? Is it like the notion that the child of an alcoholic must develop survival skills for reading the moods and behaviors of parents so as to negotiate a safer path? At least one study (Werner, 1986) reports on the resilient children of alcoholics who show responsible attitudes and an internalized locus of control. Another (Gavriel-Fried & Teichman, 2007) pointed to the increased stability of “ego identity” (p. 83) that may be part of developing an adaptive defense mechanism or coping strategy. Our findings present a challenge to the use of perspective-taking as a marker for empathy, at least empathy as a product of pet care. Indeed, superior perspective-taking could be indicative of a troubled life, in which case violence toward animals, rather than care of animals, drives empathy—at least, cognitive empathy.

Another question emerges: Why would personal distress be lower as a correlate of witnessing multiple killings? One possibility is a hardening or habituation to stressors as a defense mechanism. Contact with violence, even vicarious contact, can have a desensitizing effect on those experiencing exposure (Bandura & Adams, 1977). Alternatively, individuals with a lack of empathy may not be as likely to avoid situations in which abuse is likely. They may travel in a carefree manner with the violent crowd. Regardless of the causal direction, the dissociation with perspective-taking is clear.

Thus, we are suggesting a dissociation hypothesis, where significant animal abuse (possibly among other serious developmental trials in a dysfunctional family or peer environment) generates a dissociation between the cognitive and the affective, between the cognitive domain (perspective-taking) and the affective domain (emotional/empathic concern), tilting such individuals toward the cognitive domain and actually enhancing cognitive development. On the other side of the coin, the situation leads to dissociation between emotional concern and personal distress, such that personal distress is not the pressing issue one would expect or predict.

As an explanation for animal abuse or violence generally, this elementary type of sociopath might offer a mechanism for both violence-graduation and
anti-social behavior hypotheses. What our results suggest is that abuse of animals is not necessarily consistent with a lack of empathy; rather, dissociation between cognitive and affective measures of empathy typifies more serious types of abuse (witnessing multiple killings).

Likely, witnessing humane care for animals in humane education in childhood affects attitudes toward, and treatment of, animals later in life (Ascione, 1992; Ascione & Weber, 1996; Grier, 1999; Paul & Serpell, 1993; Thompson & Gullone, 2003). Education for care is important and, predictably, would lead to an integration of cognitive and affective components of empathy.

The possible lack of integration associated with animal abuse certainly warrants further investigation. A recent study (Hensley & Tallichet, 2005) pertaining to exposure to animal cruelty advanced the notion that violence toward animals was a learned behavior, though subjects were convicted felons. For some abusers, this may be true. We find more intriguing the notion of a dissociative state underlying animal abuse and would suggest this hypothesis be considered in competition with learning models.

Whereas Henry (2004a) suggested that observing animal abuse may actually lead to concern for animals that is mediated by the development of empathy, we wonder if this could be a function of degree, as others (Hensley & Tallichet, 2005) have established that witnessing animal abuse may actually lead to eventual animal cruelty. It may be, then, that milder exposure (witnessing abuse or killing rarely) may lead to the development of empathy, whereas chronic or serious exposure has the opposite effect. Empathy improves in the former case and disintegrates in the latter.

Finally, very few individuals reported having actually participated in the killing of a pet (N=5) or a wild animal (N=9). This was expected, given that this was self-report data and that completing questionnaires via the internet may not provide a complete assurance of anonymity. Although the sample size was small, it is nevertheless interesting that there was no sex difference for the five individuals who had killed a pet but that more males than females had killed a wild or stray animal. Henry’s (2004a) suggestion that it is not unexpected for men to demonstrate callous and insensitive attitudes toward animal cruelty might be connected to opportunities that present themselves in outdoor or wilderness settings. As such, it is perhaps reasonable to assume that males are more predisposed to be in settings that present the opportunity for such abuse. Moreover, an examination of the sample statistics would indicate the males are more representative of the multiple-killing category in this study.

A possible scenario for those who have observed multiple acts of animal abuse in childhood—as opposed to those who have observed single and, perhaps, random acts—is that they have come from unhealthy home environments in
which both human and animal abuse occurred, thus predisposing individuals to negative attitudes toward animals. This has been repeatedly reported by Flynn (1999, 2000; 2001) who, in recent years, has explored the relationship between family violence and animal abuse and has specifically pointed to the lack of research attention given to violence toward animals within families (Flynn, 2000). Our findings lend support to the need to continue exploring the implementation of humane education programs for children with respect to potential immediate and long-term effects (Ascione, 1992; Ascione & Weber, 1996; Hergovich et al., 2002; Thompson & Gullone, 2003). As well, there may be a need for therapeutic programs to assist those in a dissociative state. Thus, implications extend to the need for the following: (a) refined research on these intriguing effects; (b) continued research efforts in exploring, implementing; and evaluating different types of humane education programs and therapeutic interventions; and (c) formal policies for including violence to animals as a component of classroom education programs, clinical psychological programs, civic venues, and human-animal literacy publications.

References


