

BEHAVIOUR PROBLEMS IN DOGS: THE RELATIONSHIP BETWEEN REPORTED BEHAVIOUR PROBLEMS, CAUSAL ATTRIBUTIONS, AND INEFFECTIVE DISCIPLINE

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ABSTRACT

The purpose of this study was to examine the relationship between causal attributions of dogs' behaviour problems, ineffective discipline, and reported behaviour problems. One hundred dog owners (50 males and 50 females) from Selangor and Kuala Lumpur were surveyed using questionnaires containing the Causal Dimension Scale, Dog Discipline Scale, and Canine Behaviour Checklist. Participants were above 18 years old and owned a dog at the time of participation in this study. Results indicated that higher perceptions of stability of behaviour problems were significantly related to higher reported behaviour problems and higher ratings of ineffective discipline. Higher ineffective discipline was also related to higher reported behaviour problems. Lastly, ineffective discipline was found to be a mediator between perception of stability and reported behaviour problems. In conclusion, dog owners' perceptions affect their disciplining behaviours, which ultimately influence the behaviour of their dogs.

Key words: dog, causal attributions, ineffective discipline, behaviour problems

INTRODUCTION

Dogs have evolved and adapted to life alongside humans, playing a multitude of different roles in their relationship with their owners. Many research findings show that the owner-dog relationship may be maintained because both the dog owners and dogs benefit from the relationship. It is then perplexing to discover the high rates of dog abandonment and relinquishment. If there are so many benefits to keeping a pet dog, why do people abandon them or return them to the animal shelters? One reason could be the behaviour problems exhibited by the dogs. Many dog owners cannot cope or do not know how to cope with the behaviour problems of their dogs. Some may have even been misled by the portrayal of dogs in movies and cartoons whereby canines seem loyal, helpful, and seemingly able to take care of themselves. Ultimately, when the dog's behaviour does not match the expectations of the dog owners, many problems surface in the owner-dog relationship. The

dogs often end up at the losing end as they will be abandoned or relinquished. In conclusion, when factors that are related to behaviour problems in dogs can be identified, more can be done to prevent or reduce the behaviour problems, thereby improving the owner-dog relationship.

LITERATURE REVIEW

Dog ownership has been linked to various benefits for dog owners: social and emotional benefits (McNicholas & Collis, 2000), potential health benefits such as increased physical activity compared to non-owners (Cutt, Giles-Corti, Knuiman, Timperio, & Bull, 2008) and also act as a stress buffer for the elderly (Siegel, 1990). Therefore, dog owners can gain much from the interaction with their dogs. On the other hand, dogs also benefit from having an owner. A responsible owner can satisfy the dogs' basic needs for food and shelter. Even when dog and cat owners reported low attachment to their pets, they still took care of the basic needs of their pets (Shore, Douglas, & Riley, 2005). The owners also provide for the dogs' social needs of interaction, love, and warmth. Thus, it would seem that this owner-dog relationship should be maintained because of the many benefits it affords to both parties. As proposed by the exchange theory (as cited in Cook & Whitmeyer, 1992), people are motivated by interests or costs/benefits. Hence, they would be motivated to maintain social relationships in which they perceive the benefits outweigh the costs. Since there are so many benefits afforded by the owner-dog relationship, dog owners should be highly motivated to maintain their relationships with their dogs.

However, the high rates of dog abuse, abandonment, and relinquishment by dog owners seem to indicate otherwise. One major reason individuals provided for pet relinquishment was behavioural problems in dogs (Mondelli & Previde, 2004). The reported behavioural problems included too much vocalisation, hyperactivity, destructive behaviour, escaping, disobedience, and problems with other pets. In addition, a research on 1171 Taiwan residents revealed that dog owners who did admit to abandoning their dogs cited two main reasons for doing so: either the dog was too much trouble or because of the dog's behaviour problems (Hsu, Severinghaus, & Serpell, 2003). Hence, evidence suggests that behaviour problems seem to be the main cause of strain on the owner-dog relationship resulting in the inability of both parties to benefit from the relationship.

Due to the limited literature on dog-owner relationships and behaviour problems and the similarity of the conditions between parent-child and owner-dog relationships, some of the literature on parent-child relationships can be adapted to reflect the owner-dog context. Accordingly, this paper will draw upon the theories and findings from parent and children studies since pets may solicit the same nurturing instinct from owners as children do from their parents. The parenting practices that have evolved in caring for human infants are applied to caring for pet dogs (Prato-Previde, Fallani, & Valsecchi, 2006). Individuals are also known to project human qualities and traits to non-humans, such as animals. This phenomenon is known as anthropomorphism. Serpell (2002) defines anthropomorphism as the attribution of thought, feeling, intention, and human mental processes to non-human animals. In a study of attribution of human traits to non-humans, dogs were among one of the animals receiving the most attributions of human traits (Hogan, 1980).

Causal Attributions and Reported Behaviour Problems

The attribution theory proposed by Weiner (1985) states that individuals constantly seek to explain the positive or negative outcomes of events. He explains that negative outcomes usually lead to negative feelings and individuals would try to assign causal explanations to those negative outcomes. These explanations occur on three dimensions, which are locus of causality, stability, and controllability (Weiner, 1985). The locus of causality refers to whether the cause is internal or external, stability refers to whether the cause is permanent or changes with time, and controllability refers to whether the individual had control over the causal factor. According to the attribution theory, causal attributions result in many psychological and behavioural outcomes.

A study on 100 mother-child pairs found that the mothers of aggressive children were more likely to attribute hostile intentions to the ambiguous actions of their own and other children (MacBrayer, Milich, & Hundley, 2003). When presented with vignettes of hypothetical situations, mothers of aggressive children tended to attribute the cause of the situation to some aspects of other people, were more likely to believe the person acted intentionally, and also commented on the personality traits of others. In applying the attribution theory, mothers who have hostile attributions towards their children are more likely to feel anger or hopelessness and also have negative perceptions of their children.

Similar to parents, dog owners may also have differing causal attributions towards their dogs' misbehaviour. Some may interpret a dog's misbehaviour as being internal, stable, and controllable, that is, the dog is perceived as knowingly and intentionally misbehaving. Others may perceive behaviour problems to be more external, temporary, and uncontrollable. Differing attributions may affect the owner's perception on the amount of behaviour problems in the dogs. Hence, it is believed that the dog owner's causal attributions regarding their dog's behaviours would be related to the amount of reported behaviour problems in dogs.

Causal Attributions and Ineffective Discipline

In applying Weiner's attribution theory to parent-child relationships, Dix and colleagues (as cited in Johnston & Ohan, 2005) proposed that parents seek to explain or understand their children's behaviour in order to decide how to react to the behaviour. In their social-cognitive model which builds upon the attribution theory, they suggest that parental attributions are a mediating factor which determines parent's reactions to their child's behaviours. This means that parental attributions towards children's behaviour can affect parenting styles and parental attitudes towards disciplining.

A study by Dix, Ruble, and Zambarano (1989) showed that mothers made decisions on the forcefulness of disciplining based on their attributions or judgements of how competent or responsible the child was in the particular situation. Mothers were found to be more upset with the children when they thought the children understood that they were misbehaving. When the child was thought to be competent and responsible for the misbehaviour, mothers were also sterner, disapproving, and recommended longer periods of time-out as punishment. Slep and O'Leary (1998), on the other hand, used an experimental method to determine the relationship between attribution and discipline. The attribution of behaviour was manipulated by either inducing mothers to think that their children were not to blame

for misbehaviour or inducing them to think that their child was intentionally misbehaving with negative intent. It was found that mothers were more overreactive when they perceived their children to be responsible and intentional in their misbehaviour. The children were also found to have more negative affect and although not significant, they indicated more behavioural problems.

It is possible that the association between attributions and disciplining may manifest in the owner-dog relationship. Similar to parents, dog owners who perceive their dog's misbehaviour to be caused by the dog, permanent, and controllable by the dog, may be more harsh or overreactive in their disciplining. They may also be less forgiving and believe that their dogs should be punished harshly. On the other hand, those who attribute the cause of the misbehaviour as external, temporary, and uncontrollable by the dog, may be more lax in their disciplining. Both harsh and lax disciplining is ineffective when used excessively with the dog. Therefore, the attributions made by dog owners towards their dogs' misbehaviour can lead to the use of ineffective discipline when dealing with their dogs.

Ineffective Discipline and Reported Behaviour Problems

The discipline styles used by parents can have many positive and/or negative effects on their children. Baumrind (1966) proposed that there are three parenting styles: authoritarian, permissive, and authoritative. These parenting styles each differ in the levels of control and warmth exhibited by the parents.

According to Baumrind (1966), authoritarian parents are usually strict in enforcing what they believe is right and do not encourage discussions or give explanations to their children. On the other hand, permissive parents are said to demand little in terms of responsibility and usually yield to their children's demands. Lastly, authoritative parents are those who have high levels of control and warmth towards their children at the same time.

In measuring the different parenting styles, Arnold, O'Leary, Wolff, and Acker (1993) have come up with the Parenting Scale. The scale assesses ineffective discipline used by parents in terms of laxness, overreactivity, and verbosity. According to Arnold and colleagues (1993), their measure of lax discipline practices are comparable to Baumrind's permissive parenting while their measures of overreactive discipline practices are comparable to Baumrind's authoritarian parenting. Verbosity and authoritative parenting will not be discussed in this study as they do not fit into the owner-dog interaction pattern. This is because authoritative parenting styles and verbosity focus more on verbal interactions between parent and child, such as talking and reasoning with the child. This is not applicable to the owner-dog relationship. Therefore, in this research, ineffective disciplining by the dog owners will encompass both laxness and overreactivity.

Now, what is the relationship between discipline styles and behaviour problems? Parental use of harsh physical and verbal discipline has been related to children's behaviour problems (McKee et al., 2007). When the effects of positive parenting were controlled, maternal harsh physical discipline was significantly related to the child internalising behaviours and maternal harsh verbal and physical discipline was significantly related to child externalising behaviours. Paternal harsh verbal and physical discipline was significantly related to both child internalising and externalising behaviours. In addition, Jewell, Krohn, Scott, Carlton, and Meinz (2008) found that maternal authoritarian parenting styles and paternal permissive parenting styles were linked to more externalising behaviours

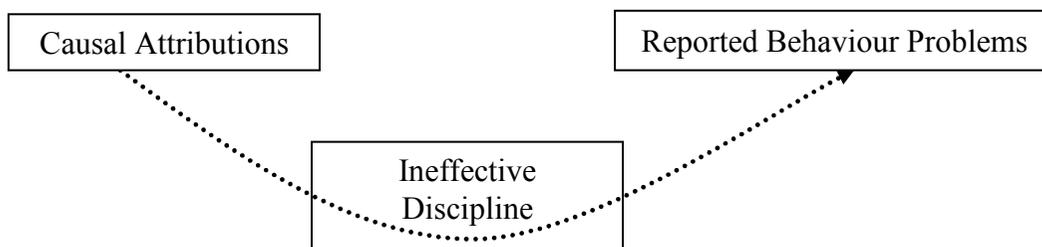
in their children. Thus, overreactive and lax discipline styles contribute to the development of internalising and externalising behaviour problems in children.

Adapting from the knowledge of parenting styles used by parents, it is believed that dog owners may employ similar disciplining styles with their dogs. Dog owners may engage in lax and/or overreactive disciplining styles with their dogs. Therefore, the dog owners' ineffective disciplining may have an effect on the amount and severity of behaviour problems in their dogs. However, minimal studies and experiments have been found which explore the dog owners' use of ineffective discipline and its effects on the dogs' behaviours.

Ineffective Discipline as a Mediating Variable between Causal Attributions and Reported Behaviour Problems

As described above, causal attributions of behaviour may be associated with behaviour problems. However, causal attributions could have an indirect relationship with behaviour problems, that is, causal attributions could affect ineffective discipline, which in turn affects reported behaviour problems (see Figure 1).

Figure 1. Causal Attributions are Related to Reported Behaviour Problems through the Influence of Ineffective Discipline.



In this case, ineffective discipline functions as a mediating variable. According to Baron and Kenny (1986), a mediating variable provides a means in which the independent variable can influence the dependent variable.

Results from a previous study showed that discipline styles mediate between maternal attributions and behaviour problems in children (Nix et al., 1999). There was a significant relationship between mother's attribution of hostile intentions to children's ambiguous behaviours in vignettes and children's externalising behaviours in school. Using a structural equations model, it was discovered that the relationship between mother's hostile attribution and children's externalising behaviour in school was not significant when the effects of maternal harsh disciplining were not taken into consideration. Hence, disciplining functioned as a mediator between attributions and behaviour problems in children.

The review of the literature suggests that there is a relationship between causal attribution, ineffective discipline, and behaviour problems. The research questions of this study include: Are causal attributions of the dog's behaviour and ineffective discipline associated with the dog's behaviour problems? Also, is there a relationship between causal

attributions and ineffective discipline? Lastly, is ineffective discipline a mediator between causal attributions and reported behaviour problems in dogs?

To answer the research questions above, four hypotheses will be tested:

1. There is a positive relationship between causal attributions and reported behaviour problems, where higher causal attributions towards the dog is related to higher reported behaviour problems.
2. There is a positive relationship between causal attributions and ineffective discipline, where higher causal attributions towards the dog is related to higher ineffective discipline.
3. There is a positive relationship between ineffective discipline and reported behaviour problems, where higher ineffective discipline is related to higher reported behaviour problems.
4. Ineffective discipline acts as a mediating variable between causal attributions and reported behaviour problems. Causal attributions towards the dog affect ineffective discipline, which in turn affects the reported behaviour problems in dogs.

METHODOLOGY

Research Design

This study involved a single survey using questionnaires. Independent variables consisted of causal attributions of a dog's behaviour and dog owners' use of ineffective discipline. The dependent variable was the reported behaviour problems in dogs as perceived by the dog owners. This study also explored if ineffective discipline functions as a mediating variable.

Participants

This study was carried out on a sample of 100 participants. The participants were selected via convenience sampling. Individuals were approached at pet events, shopping centres, veterinary clinics, or sought through friends and family members. Participants were from the Selangor and Kuala Lumpur region. Of the 100 participants, 50 were males and the remaining 50 were females. The participants must own a dog at the time of participation in this study. The participants were between the ages of 18 years old and 59 years old ($M = 26.10$ years, $S.D. = 11.62$).

Participants reported owning between one to 11 dogs, with the average number of dogs owned being 2 dogs. The shortest duration of dog ownership was 3 months while the longest was 58 years ($M = 6.83$ years). Of the 100 participants, 36 reported that their dogs received obedience training, 62 reported that their dogs did not receive obedience training, and 2 did not answer the question. Table 1 shows some additional demographic information of the participants.

Table 1. Demographic Information of Participants

Variables	Descriptive Statistics	
	Frequency	Percentage (%)
Gender		
Male	50	50
Female	50	50
Race		
Chinese	74	74
Indian	19	19
Bumiputera	1	1
Others	4	4
Missing data	2	2
Own Other Pets		
Yes	34	34
No	65	65
Missing data	1	1

Measurement Device

In this study, the three different scales used are the Causal Dimension Scale, the Dog Discipline Scale and the Canine Behaviour Checklist. The questions used in the questionnaire were chosen based on the results of a pilot test that was conducted on 60 participants prior to this study. The participants were selected via convenience sampling and consisted of 30 male dog owners and 30 female dog owners from the Selangor and Kuala Lumpur region.

The Causal Dimension Scale (CDS) was modified by the researcher from the original CDS scale developed by Russell (1982). The CDS was designed to assess how causes are perceived by individuals. The causes are then rated along three dimensions which are the locus of causality, stability, and controllability. From the pilot test, Question 9 was removed from the original CDS scale. The omission of Question 9 led to an increase in the internal consistency of the scale. The questions were scored along a 9-point Likert scale with opposing statements at each end. The total score for each subscale is obtained by summing the scores for the items within each subscale. A higher score indicates that the cause of the dog's behaviour is perceived as internal, stable, and controllable. Based on the pilot test, the internal consistency of the CDS is 0.46. The internal consistencies of the 3 subscales are 0.62 for Locus of Causality, 0.55 for Stability, and 0.54 for Controllability.

For the Dog Discipline Scale (DDS), the study used an adapted version of the Parenting Scale (Arnold, O'Leary, Wolff, & Acker, 1993) which is designed to measure dysfunctional discipline practices in parents with young children. The 30-item Parenting Scale has 3 subscales that are Laxness, Overreactivity, and Verbosity. Each item has a score from 1 (effective) to 7 (ineffective). To obtain a total score, the responses on all items are averaged. The Parenting Scale has good reliability and validity. The coefficients alpha for Laxness, Overreactivity, Verbosity, and Total were 0.83, 0.82, 0.63, and 0.84 respectively. Test-retest

correlations were found to be: Laxness (0.83), Overreactivity (0.82), Verbosity (0.79), and Total (0.84).

From the 30 questions in the original Parenting Scale, 14 questions were selected, modified, and tested in the pilot test. The Laxness and Overreactivity subscales were each represented by 7 questions. The same 14 questions that were used in the pilot test were maintained in the study. The resulting scale consisting of 14 questions was called the Dog Discipline Scale (DDS). Questions number 1, 4, 6, 8, 10, and 14 were reversed scored. To obtain a total score for the DDS, the responses for the 14 questions were averaged. A higher score indicated more ineffective disciplining by the owner. Based on the pilot test, internal consistency of the DDS is 0.52.

The Canine Behaviour Checklist (CBC) was obtained from the Handbook of Behaviour Problems of the Dog and Cat (Landsberg, Hunthausen, & Ackerman, 2003). The handbook provides the CBC as a measure of behaviour problems in the dog as reported by the dog owner. There were 23 questions in the CBC and the participants were required to rate each question based on the severity of the behaviour problems with 0 – none, 1 – exhibits problem but not a concern, 2 – mild, 3 – moderate, and 4 – severe. Based on the findings of the pilot test, the CBC was modified to ease understanding and rating by the participants. The score for all the questions are summed to obtain a total behaviour problem score. The higher the score, the more behaviour problems in the dog as reported by the owner. Based on the pilot test, internal consistency of the CBC is 0.88.

RESULTS

Causal Attributions and Reported Behaviour Problems

Pearson correlations were used to determine if there was a relationship between causal attributions and reported behaviour problems. If the correlations were found to be significant, a linear regression was carried out.

Locus of Causality and Reported Behaviour Problems

There was no significant relationship between locus of causality and reported behaviour problems in dogs as reported by dog owners ($r = .01, p > .05$). See Table 2.

Stability and Reported Behaviour Problems

There was a significant positive relationship between stability and reported behaviour problems in dogs ($r = .26, p < .01$). See Table 2. Hence, dog owners who attribute behaviour problems to be more stable may report more behaviour problems in their dogs. The results indicates that 6.9% of the variation in the scores of behaviour problems in dogs can be explained by the variation in stability (Variance = $r^2 = .069 = 6.9\%$). Conversely, 6.9% of the variation in stability can be accounted for by the variation in behaviour problems in dogs.

Controllability and Reported Behaviour Problems

There was no significant relationship between controllability and behaviour problems in dogs as reported by dog owners ($r = -.08, p > .05$). See Table 2.

Table 2. Correlations between Subscales of Causal Attribution and Reported Behaviour Problems

	LOC	Stability	Controllability	RBP
LOC	-	.02	.21*	.011
Stability		-	.13	.26**
Controllability			-	-.08
RBP				-

Note.

LOC: Locus of Causality

RBP: Reported Behaviour Problems

* $p < .05$. ** $p < .01$.

Linear Regression between Stability and Reported Behaviour Problems

It was found that, for every one increase in the ratings of stability, ratings of behaviour problems increased by 0.80. Confidence limits were narrow, showing that it is 95% confident that the population slope is between 0.21 and 1.40 [$F(1,98) = 7.28, p < .01$]. See Table 3.

Table 3. Regression Analysis for Stability and Reported Behaviour Problems

	<i>B</i>	<i>SE B</i>	Beta
Stability	0.80	0.30	0.26**

** $p < .01$.

Therefore, among the three measures of causal attributions, only perception of stability correlated significantly with reported behaviour problems in dogs.

Causal Attributions and Ineffective Discipline

Pearson correlations were used to determine the relationship between causal attributions and ineffective discipline. If the correlations were found to be significant, a linear regression was carried out.

Locus of Causality and Ineffective Discipline

There was no significant relationship between locus of causality and ineffective discipline ($r = -.06, p > .05$). See Table 4.

Stability and Ineffective Discipline

There was a significant positive relationship between stability and ineffective discipline ($r = .25, p < .05$) (Refer to Table 4). Hence, when dog owners attribute behaviour problems to be more stable, they may use more ineffective discipline. The results indicate that 6.3% of the variation in the scores of ineffective discipline can be explained by the variation in attributions of stability (Variance = $r^2 = .063 = 6.3\%$). Conversely, 6.3% of the variation in attributions of stability can be accounted for by the variation in ineffective discipline.

Controllability and Ineffective Discipline

There was no significant relationship between controllability and ineffective discipline ($r = -.02, p > .05$). See Table 4.

Table 4. Correlations between Causal Attributions and Ineffective Discipline

	LOC	Stability	Controllability	ID
LOC	-	.02	.21*	- 0.06
Stability		-	.13	0.25*
Controllability			-	- 0.02
ID				-

Note.

LOC: Locus of Causality

ID: Ineffective Discipline

* $p < .05$.

Linear Regression between Stability and Ineffective Discipline

It was found that, for every one increase in the ratings of stability, ratings of ineffective discipline increased by 0.03. Confidence limits were narrow, showing that it is 95% confident that the population slope is between 0.01 and 0.06 [$F(1,98) = 6.60, p < .05$]. See Table 5.

Table 5. Regression Analysis for Stability and Ineffective Discipline

	<i>B</i>	<i>SE B</i>	Beta
Stability	0.03	0.01	0.25*

* $p < .05$.

Therefore, among the three measures of causal attributions, only perception of stability correlated significantly with ineffective discipline of the dog owners.

Ineffective Discipline and Reported Behaviour Problems

A Pearson correlation was used to determine the relationship between ineffective discipline and reported behaviour problems. If the correlation was found to be significant, a linear regression was carried out. There was a significant positive relationship between ineffective discipline and behaviour problems in dogs as reported by dog owners ($r = .54, p < .01$). See Table 6. Hence, when dog owners use more ineffective discipline, they may report more behaviour problems in their dogs. The results indicate that 29.3% of the variation in the scores of behaviour problems in dogs can be explained by the variation in ineffective discipline (Variance = $r^2 = .293 = 29.3\%$). Conversely, 29.3% of the variation in ineffective discipline can be accounted for by the variation in behaviour problems in dogs.

Table 6. Correlation between Ineffective Discipline and Reported Behaviour Problems

	Ineffective Discipline	RBP
Ineffective Discipline	-	.54**
RBP		-

Note.

RBP: Reported Behaviour Problems

** $p < .01$.

Linear Regression between Ineffective Discipline and Reported Behaviour Problems

It was found that, for every one increase in the ratings of ineffective discipline, ratings of behaviour problems increased by 12.21. Confidence limits were narrow, showing that it is 95% confident that the population slope is between 8.41 and 16.02 [$F(1,98) = 40.51, p < .01$]. See Table 7.

Table 7. Regression Analysis for Ineffective Discipline and Reported Behaviour Problems

	<i>B</i>	<i>SE B</i>	Beta
Ineffective Discipline	12.21	1.92	0.54**

** $p < .01$.

Therefore, ineffective discipline correlated significantly with reported behaviour problems in the dogs.

Ineffective Discipline as a Mediating Variable between Causal Attribution and Reported Behaviour Problems

According to Baron and Kenny (1986), the basic conditions necessary in order to test for a mediating relationship is as follows: (1) there must be a significant relationship between the independent variable and the mediator variable, (2) there must be a significant relationship

between the mediator and the dependent variable, and (3) there must be a significant relationship between the independent variable and the dependent variable.

In this study, the conditions of Baron and Kenny (1986) are fulfilled because stability was significantly correlated with ineffective discipline and reported behaviour problems. In addition, ineffective discipline was significantly correlated with reported behaviour problems. Therefore, analyses were conducted to determine if ineffective discipline is a mediating variable between stability and reported behaviour problems.

Using Hierarchical Multiple Regression to Determine the Mediating Effect of Ineffective Discipline

It was found that when ineffective discipline was added to stability, which was significant when used alone to predict reported behaviour problems, stability was no longer significant ($t = 1.56, p > .05$). This shows that without the influence of ineffective discipline, stability is not significantly related to reported behaviour problems. Therefore, ineffective discipline serves as a mediator between stability and reported behaviour problems (see Table 8).

Table 8. Regression Analysis for Stability and Ineffective Discipline with Reported Behaviour Problems

	<i>B</i>	<i>SE B</i>	Beta
Model 1			
Stability	0.80	0.30	0.26**
Model 2			
Stability	0.42	0.27	0.14
Ineffective Discipline	11.44	1.97	0.51**

** $p < .01$.

Using Preacher and Hayes' SPSS macro to determine the mediating effect of ineffective discipline

The macro (Preacher & Hayes, 2004) provides the unstandardised coefficient values for the regression of the three variables: reported behaviour problems (Y), stability (X), and ineffective discipline (M). The total effect of stability on reported behaviour problems, $b(YX)$, is 0.80 ($p < .01$). The effect of stability on ineffective discipline, $b(MX)$, is 0.03 ($p < .05$). The effect of ineffective discipline on reported behaviour problems, $b(YM .X)$ is 11.44 ($p < .01$). Finally, the direct effect of stability on reported behaviour problems, controlling for the mediator, $b(YX .M)$, is 0.42 ($p > .05$). See Table 9. It can be seen that a previously significant relationship between stability and reported behaviour problems is no longer significant when ineffective discipline is controlled (0.80** to 0.42). Therefore, ineffective discipline is a mediator between stability and reported behaviour problems.

Table 9. Direct and Total Effects Between Stability, Ineffective Discipline, and Reported Behaviour Problems

	Unstandardised Coefficient	<i>t</i>	Sig
<i>b</i> (YX)	0.80**	2.70	0.008
<i>b</i> (MX)	0.03*	2.57	0.012
<i>b</i> (YM .X)	11.44**	5.81	0.000
<i>b</i> (YX .M)	0.42	1.56	0.123

Note.

Y – Reported Behaviour Problems

X – Stability

M – Ineffective Discipline

p* < .05. *p* < .01.

In summary, both the hierarchical multiple regression and Preacher and Hayes' (2004) SPSS macro demonstrate that ineffective discipline is a mediator between stability and reported behaviour problems in dogs.

DISCUSSION

This study set out to explore if causal attributions have effects on both reported behaviour problems in dogs and ineffective discipline of dog owners. It also investigated the relationship between ineffective discipline and reported behaviour problems. Lastly, this study investigated the possible role of ineffective discipline as a mediator between causal attributions and reported behaviour problems in dogs.

The results obtained lend support to some of the proposed hypotheses. Among the three measures of causal attributions, only stability correlated significantly with reported behaviour problems and ineffective discipline. Ineffective discipline was also found to correlate significantly with reported behaviour problems. Lastly, ineffective discipline was shown to be a mediator between stability and reported behaviour problems

Effects of locus of causality and controllability were not evident in this study, contrary to the significant findings of MacBrayer, Milich, and Hundley (2003), as well as Dix, Ruble, and Zambarano (1989) who studied the influence of parental attribution on behaviour problems and disciplining respectively. This could have been due to the fact that those researches involved measured the locus of causality and controllability in humans whereas this study looked at these variables in dogs. The locus of causality and controllability are concerned with whether the cause is internal to the dogs and whether the dogs have control over the cause. These involve attributing cognitive processes to a certain extent and individuals may have difficulty ascribing cognitive processes to the dogs on a level similar to humans. When human and animal similarities were highlighted, individuals, especially those with lower self-esteem, tended to have more negative attitudes towards the animal (Beatson & Halloran, 2007). This shows that individuals do not equate animals on a similar level as humans and in fact strive to maintain a level of control over the animals.

In relating to anthropomorphism, individuals were said to ascribe human-like qualities to non-human animals (Serpell, 2002). Therefore, dog owners should attribute thought, feeling, intention, and human mental processes to their dogs. However, the findings of this

study indicate that this may not be the case. While individuals do ascribe human-like qualities to their dogs, this association may be on a very physical level. For instance, although dogs may be given names that are similar to humans (such as Jack or Oliver) and/or dressed up with clothing and pampered at saloons and restaurants and owners may treat their dogs like humans, this occurs on a very superficial level and not on a cognitive level.

On the other hand, perception of stability may have yielded significant results because dog owners find ratings of permanence an easier concept to grasp. While they may have difficulty assigning higher mental processes to their dogs, they may better understand the concept of stability. This factor merely taps on whether the behaviour problems are thought to be permanent or would change over time.

The third hypothesis of this study was supported as it was shown that ineffective discipline was related to higher reported behaviour problems. More importantly, the fourth hypothesis was also supported as ineffective discipline was found to be a mediator between perception of stability and reported behaviour problems. This shows that when dog owners' perceive the behaviour problems to be stable over time, they are likely to use more ineffective discipline. A higher use of ineffective discipline in turn relates to higher reported behaviour problems in dogs.

The results obtained in terms of perception of stability are consistent with Weiner's (1985) theory of attribution. The theory proposes that individuals seek to explain the outcomes of events. These explanations can affect an individual's thoughts, emotions, and actions. When dog owners are confronted with dogs' behaviour problems, they may have negative reactions and try to find causal explanations for the dogs' behaviours. When these causes are perceived to be stable over time, owners are likely to believe that the behaviour problems would constantly be repeated in the future. According to Weiner, perceptions of stability can lead directly to behavioural consequences (use of ineffective discipline as a coping method). It can also result in emotional consequences that subsequently lead to behavioural consequences (feelings of helplessness which leads to ineffective discipline). The use of ineffective discipline is further related to more reported behaviour problems, consistent with findings in parent-child relationships (McKee et al., 2007; Jewell, Krohn, Scott, Carlton, & Meinz, 2008).

In this study, dog owners could also have affected their dogs' behaviours through self-fulfilling prophecies, that is, the owners believe that their dogs' behaviour problems are permanent and disciplining will not result in any change. Since they perceive that the dogs' behaviours will not change, they do not put in effort to discipline their dogs and resort instead to excessively lax or overreactive methods. The ineffective discipline will have short term effects, but will ultimately lead to the dogs developing and maintaining more behaviour problems thereby confirming the owners' initial false belief.

The link between perceptions of stability and ineffective discipline could also have occurred because of perception biases that may overemphasise the behaviour problems. When dog owners' perceive the behaviour problems to be stable, the negative behaviours become more salient and overshadow other behaviours. This results in dog owners feeling overwhelmed and subsequently resigned to the fact that they have little or no control over their dogs' behaviours. This may also lead to low levels of self-efficacy as owners feel incompetent and unable to handle their dogs' behaviours. When they perceive low control or have low self-efficacy, they are more likely to resort to whatever means possible, such as

ineffective discipline to manage their dogs. As shown by Sanders and Woolley (2005), mothers' low confidence in handling child behaviour problems (low self-efficacy) was significantly related to the use of lax or overreactive discipline methods. In the owner-dog context, dog owners who feel that their dogs have many behaviour problems will become overwhelmed and have low perceived control. They may then resort to ineffective discipline which has short-term effects but can boost their feelings of control and efficacy temporarily. In the long run, this would only lead to more behaviour problems in the dogs.

Although this study revealed some significant relationships between attributions, ineffective discipline and behaviour problems in dogs, there are some limitations that should be considered. As there are limited available scales in the field of animal studies, the scales to measure causal attributions and ineffective discipline of dog owners had to be adapted from scales used in human research. This resulted in a need to modify some of the items in the original scales and hence questions may arise on the appropriateness of the scales in the context of owner-dog relationships. In a bid to address the issue of scale aptness, a factor analysis was conducted during the pilot test and internal consistencies were also determined for each scale. The findings reveal that although the internal consistencies were low, the scales are still acceptable and can be used in the owner-dog context.

Another important point to note is that there was no control over the breed, size and age of the dogs. Certain breeds of dogs may demand more affection while others may need more physical interaction. Different breeds of dogs may also be perceived to have different temperaments, which may influence an owner's interaction with the dog and perceptions of the dog's behaviour problems. However, due to limited time, this study could not provide a control for the characteristics of the dogs as it would be difficult to find dogs of exactly the same breed and age.

As this is a study of correlational design, causal relationships should not be inferred from the results. However, this study provides a glimpse of how these variables are connected and it is encouraging to discover that there is a relationship between perceptions of stability, ineffective discipline, and reported behaviour problems in dogs.

Future research should be directed towards examining other factors that influence owner-pet relationships. This could include the effects of gender on the perceptions and behaviours of dog owners, participation of multiple-raters or behavioural observations and determining personality traits and characteristics of owners.

In conclusion, dog owners who reported more behaviour problems in their dogs also reported higher perceptions of the behaviour being permanent and a higher use of ineffective discipline. More interestingly, it was discovered that their perception of the behaviour problems being permanent resulted in the use of more ineffective discipline. This then resulted in more reported behaviour problems in the dogs. These findings are very encouraging as they suggest that targeting perceptions and behaviours of owners are avenues of intervention in reducing the behaviour problems in dogs. Ultimately, it is hoped that a reduction in behaviour problems in dogs can reduce the number of abandoned dogs, and improve and sustain the owner-dog relationship thereby affording benefits to both parties.

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