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Leeuwen, E.A.C. van; Mors, E. ter; Stolting, M.

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RESEARCH REPORT



How Cat-Behavior Advisors Can Improve Clients' Willingness to Adopt their Advice: An Investigation of Advice Severity, Advisor Credibility, and Clients' Self-Identity

Esther van Leeuwen ^a, Emma ter Mors^a, and Marcellina Stolting^b

^aDepartment of social, economic, and organisational psychology, Leiden University, Leiden, The Netherlands;

^bDepartment of social, economic, and organisational psychology Kattengedragadviesbureau (Cat-Behavior Consultancy), Amsterdam, The Netherlands

ABSTRACT

Feline behavioral problems can be treated successfully by good advice from cat-behavior advisors, but guardians often do not comply with their advice. An experimental survey under 703 cat guardians was used to investigate what advisors can do to increase their clients' compliance with environmental enrichment advice. By systematically varying the credibility of the advisor and the severity of their advice, the hypothesis was confirmed that highly credible advisors elicit more positive attitudes and compliance intentions than less credible advisors. Also as expected, mild advice resulted in stronger compliance intentions than severe advice because guardians believed they were better able to incorporate the required actions. Finally, guardians who more strongly thought of themselves as cat guardians were more likely to adopt the advice because they believed that other cat guardians would do the same. The investigation of factors that can increase cat guardians' compliance with advisors' recommendations for the treatment of behavioral problems is crucial because the wellbeing of domestic cats lies in the hands of their guardians. Several practical recommendations for cat-behavior advisors are offered.

KEYWORDS

Cat-behavior advisor;
environmental enrichment;
feline behavior problems;
treatment compliance; cats

Despite their immense popularity as pets, domestic cats (*Felis catus*) are only semi-domesticated as compared to dogs (Driscoll et al., 2007). Domestic environments are often poorly attuned to cats' needs, causing chronic stress and a range of medical problems and problematic behaviors (Alho, Pontes, & Pomba, 2016; Amat, Camps, & Manteca, 2016; Buffington, Westropp, & Chew, 2014; Grigg & Kogan, 2019). When cat guardians seek help for these problems, they may receive advice that includes a better adjustment of the environment relative to the cats' needs, known as environmental modification or environmental enrichment (Ellis, 2009; Halls, 2018). However, these recommendations often involve a commitment of time and energy on the part of the guardian, as well as an adaptation of the domestic environment. Although guardians may wish to address their companions' problems, they are not always willing to make the sacrifices needed to do so (Shore, Burdsal, & Douglas, 2008). This is where insights from the field of psychology can be useful. The question central to the research reported in this paper is: How can veterinarians and cat-behavior advisors shape and communicate their recommendations to maximize guardians' willingness to adopt their advice? Using the Theory of Planned Behavior (Ajzen, 1991) as theoretical framework, we used an experimental survey to investigate how the severity of advice, the credibility of the advisor, and the degree to which participants identified themselves as cat guardians, affected their willingness to adopt recommendations to modify their homes to create a more feline friendly environment.

CONTACT Esther van Leeuwen  E.A.C.van.Leeuwen@FSW.Leidenuniv.nl  Department of Social, Economic and Organisational Psychology, Leiden University, Wassenaarseweg 52, Leiden, AK 2333, The Netherlands

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Behavioral problems among domestic cats are often the result of stress, which occurs when behavioral needs are not met (Foreman-Worsley & Farnworth, 2019). Specific sources of stress include a barren environment that limits cats' ability to express normal behavior, poor human-cat relationships, and inter-cat conflicts (Amat et al., 2016). Stress can cause behavioral problems among domestic cats. Definitions of what constitutes "behavioral problems" among cats vary, but they generally involve a subjective component in that the guardian must experience the behavior as annoying or perceive it as dangerous to other animals or humans (Camps, Amat, & Manteca, 2019; Casey & Bradshaw, 2008). These problems include aggression toward humans or other animals in the household, inappropriate urination or defecation, and scratching furniture. Note that not all behavioral problems are problems in the clinical sense – they may in fact be natural behavior (e.g., spraying by unneutered males). Behavioral problems among domestic cats as perceived by their guardians are common, and reported percentages range from 47% (Grigg & Kogan, 2019) to 64% (Strickler & Shull, 2013). Behavioral problems can ultimately cause guardians to relinquish their animal to a shelter for adoption or euthanasia (Kass, New, Scarlett, & Salman, 2001; Salman, New, Scarlett, & Kris, 1998). However, many problems can be addressed through professional help, provided guardians are willing to comply with the treatment plan (Casey & Bradshaw, 2008). The current study is the first to offer insights into how cat guardians' compliance with a cat-behavior advisor's recommendations can be improved, thereby ultimately contributing to improvements in feline welfare.

A visit to the vet is an important first step when addressing behavioral problems among cats, as these problems can be rooted in underlying medical conditions (Camps et al., 2019; Horwitz & Rodan, 2018). Once medical causes are ruled out or treated, help can be sought to address any remaining behavioral issues, for example from veterinarians with training in cat-behavior or from professional cat-behavior advisors. In the following, we use the term "cat-behavior advisor" to refer to any professional with specific training in the field of cat-behavior, either with or without a medical background. Although the treatment of behavioral problems among cats depends on the diagnosis, it often involves a degree of environmental modification (Amat et al., 2016; Ellis, 2009; Grigg & Kogan, 2019; Halls, 2018). Environmental modification in the context of domestic cats refers to physical and social adaptations to the home that benefit the cat's health and welfare. Modification includes enrichment, which can range from changing the substrate in litter boxes to adding food puzzles, scratch posts, hiding places, litter boxes, and vertical vantage spots, or organizing dedicated play time with the guardian (Delgado, Bain, & Buffington, 2020; Foreman-Worsley & Farnworth, 2019).

Environmental modification and enrichment can tackle various sources of stress. For example, inter-cat conflict can be alleviated by providing opportunities to avoid other cats (e.g., high walkways). Inter-cat conflict may also benefit from reducing scarcity of important shared resources (e.g., food and water, litter boxes) and the addition of hiding places. High vantage points increase security for anxious cats by providing the opportunity to survey the environment from a safe distance (Ellis, 2009). Stress caused by a barren environment can be alleviated by providing more opportunities to express natural behavior, including hunting (e.g., toys and structured play with guardians) and scent marking (e.g., scratch poles; Amat et al., 2016). Studies generally show that richer environments are associated with a decline in health problems and fewer behavioral problems (e.g., Loberg & Lundmark, 2016; Strickler & Shull, 2013; Vinke, Godijn, & van der Leij, 2014).

A guardian of a cat that exhibits problematic behavior without medical cause may receive various recommendations from an enlisted cat-behavior advisor to modify and enrich the home environment (e.g., Ellis, 2009; Halls, 2018). However, the guardian's willingness to adopt these recommendations is essential for success, and compliance is far from guaranteed (Casey & Bradshaw, 2008; Linklater, Farnworth, Heezik, Stafford, & MacDonald, 2019). Casey and Bradshaw (2008) found that cat guardians complied for only 61% with advice to treat behavioral problems. Other research supports the notion that guardians' compliance with pet treatment programs is less than ideal (Blackwell, Casey, & Bradshaw, 2016; Line & Voith, 1986; Takeuchi, Houpt, & Scarlett, 2000). The potential reasons for non- or partial compliance can vary, and may depend, in part, on the advisor's

communication skills (Pun, 2020). Some guardians may also experience elements of environmental enrichment as an encroachment on their personal space. Indeed, Alho et al. (2016) found that guardians were least likely to incorporate those elements into their households that required greater personal concessions (e.g., additional litter boxes or food and water bowls).

The Theory of Planned Behavior

The challenge for cat-behavior advisors then is to shape their recommendations such that they elicit the highest level of compliance among guardians. Drawing on the Theory of Planned Behavior (Ajzen, 1991), we investigated what factors could increase cat guardians' intention to comply with a cat-behavior advisor's recommendations. Specifically, we looked at how the severity of the advice, the credibility of the advisor, and the degree to which cat guardians self-identify as such, affected cat guardians' attitude toward and intention to comply with the advice. We also investigated the processes underlying these effects. The Theory of Planned Behavior was developed to inform behavioral interventions and is a particularly useful tool to understand and change behavior (Ajzen, 1991, 2020; Khor, Davey, & Zhao, 2018; La Barbera & Ajzen, 2021). The theory has proven its predictive validity in a range of contexts, including energy consumption (La Barbera & Ajzen, 2021), and animal welfare (Khor et al., 2018; McLeod, Hine, & Driver, 2019).

Central to the Theory of Planned Behavior is the notion that actions are guided by *intentions* to perform these actions – in this case, guardians' willingness to comply with a cat advisor's recommendations (see Figure 1). These intentions, in turn, are predicted by three interrelated factors: attitudes, subjective norms, and perceived behavioral control.¹ *Attitudes* are overall positive or negative evaluations of behavior. In the current study, behavior refers to the actions that are required of the guardian to comply with an advisor's recommendations, such as adding litter boxes or devoting more time to playing with their cat. As cat guardians' attitude toward complying with the advisor's recommendations become more positive, they are more likely to intend to comply with these recommendations. Attitudes and intentions are also influenced by *subjective norms*, which can

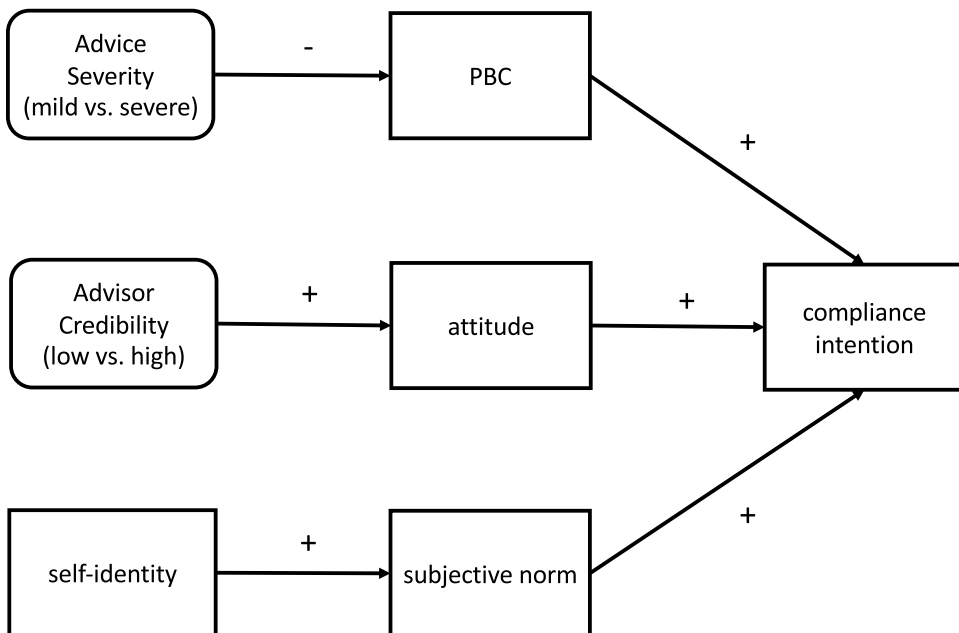


Figure 1. Overview of predictors of compliance intention.

be construed as general social pressure from important others to perform (or not perform) the desired behavior. For example, cat guardians who perceive other guardians taking advanced actions to enrich their domestic environment may have a more positive attitude and intention toward environmental enrichment themselves. *Perceived behavioral control* (PBC) refers to the perceived ease or difficulty of performing the behavior. As PBC decreases, people have less favorable attitudes and lower intentions to perform the behavior. Cat guardians living with multiple cats in a small apartment, for example, may find it more difficult to incorporate the recommended number of litter boxes in their home ($n + 1$) than cat guardians living in a large house with multiple rooms.

Advice severity, advisor credibility, and self-identity

To promote guardians' willingness to comply with recommendations, cat-behavior advisors could focus on one or more of the predictors of intentions: attitudes, subjective norms, or PBC. In the current research, we investigated three factors that could influence these predictors: the severity of the advice, the credibility of the advisor, and the degree to which guardians self-identified as cat guardians. Two of these, advice severity and advisor credibility, were systematically varied to examine their effects in a controlled experimental setting. Self-identity was a measured variable.

Advice severity could negatively affect compliance intentions. Severe advice is less persuasive than mild advice because people either ignore severe advice or generate counterarguments against it to convince themselves that they do not need to comply (Bengal, 2016; Lammers & Becker, 1980). Cat-behavior advisors offer cat guardians recommendations that can vary in how severe they may be experienced by the guardians, in the sense of impinging on guardians' living environment (e.g., placing one or several litter boxes and scratch posts in the house) and/or routines (e.g., providing a few toys or dedicated playing with the cat for thirty minutes each day). We reasoned that advice severity should affect compliance intentions through influencing guardians' PBC. Alho et al. (2016) concluded that the degree to which cat guardians provided a feline friendly environment had much to do with guardians' own convenience, and Casey and Bradshaw (2008) suggested that the degree to which guardians' lifestyle is affected by the recommended actions of a cat-behavior advisor inhibits compliance intentions. Severe advice involves more changes that impinge on guardians' living environment than mild advice, and guardians are therefore more likely to perceive these recommendations as difficult to adopt. It is this low level of perceived behavioral control over incorporating these recommendations that affects their attitude and subsequent intention to adopt the advice. Severe advice should therefore result in lower PBC, and, consequently, lower compliance intentions than mild advice.

Another factor that could affect compliance intentions is the credibility of the advisor. Credibility refers to someone's perceived expertise and trustworthiness (Pornpitakpan, 2004). A highly credible message source, in this case the cat-behavior advisor, is commonly found to evoke greater attitude change than a less credible source (Clark & Evans, 2014; Pornpitakpan, 2004). Compared with less credible advisors, highly credible cat-behavior advisors should elicit more positive attitudes among cat guardians toward adopting the recommended behavior, and, consequently, a greater intention to comply with their advice. Although the effects of perceived credibility of a cat-behavior advisor on compliance intentions have not yet been empirically investigated, Casey and Bradshaw (2008) listed perceived experience and professional attitude of the advisor (both of which can be construed as indicators of advisor credibility) as factors that may have a positive influence on guardians' compliance with a pet behavior therapy program. Since there are marked differences in the training and quality of cat-behavior advisors, and cat guardians may find it difficult to decide to whom to turn for advice (Turner, 1997), an investigation of the effect of advisor credibility on attitude and compliance intention can yield useful practical insights.

Although not originally a factor in the Theory of Planned Behavior, our third predictor, self-identity, has been proposed as a meaningful addition to explain the effect of subjective norms on intentions and behavior (e.g., Rise, Sheeran, & Hukkelberg, 2010; Sparks & Guthrie, 1998). Self-

identity refers to how people see themselves – which aspects of their identity are particularly important to them. Self-identity affects the perception of subjective norms (Rise et al., 2010). People who strongly self-identify as cat guardians not only care more about the welfare of their cats, they also believe that other guardians care about their cats to a similar extent. Moreover, as highly identified cat guardians, the opinion of other guardians matters to them. Consequently, they subjectively experience social pressure from other cat guardians to behave in a manner that is consistent with being a good guardian. This social pressure in the form of subjective norms, in turn, has a positive influence on guardians' intentions to comply with advice that is meant to improve the wellbeing of their feline companion. Self-identity should therefore be positively related to the perception of subjective norms, which, in turn, is positively related to compliance intentions.

Overview of study and hypotheses

In an online experimental survey among cat guardians, we investigated the influence of advice severity, advisor credibility, and self-identity on cat guardians' intentions to comply with a cat-behavior advisor's recommendations. Guardians were asked to envision that they had sought help and received advice from a cat-behavior advisor to address problematic behaviors of their cat.² The advisor was either described as not so credible or highly credible, and the advice was either mild or severe. Self-identity, subjective norms, PBC, attitude toward the advice and compliance intentions were measured. We tested the following predictions:

Hypothesis 1: Advice severity would have a negative effect on compliance intentions, mediated by PBC.

Hypothesis 2: Advisor credibility would have a positive effect on compliance intentions, mediated by attitude.

Hypothesis 3: Self-identity would be positively associated with compliance intentions, and this relationship would be mediated by subjective norm.

Method

Participants and design

Guardians of one or more cats were recruited via various Facebook platforms and asked to complete a short online questionnaire in Dutch. Participation was voluntary. Nine participants were excluded because they reported not owning a cat, and three were excluded for owning over 15 cats, which can be indicative of a professional cat service (e.g., cattery). The remaining 703 participants (663 female, 32 male, 2 “other,” 6 non-reported; age $M = 42.25$, $SD = 13.44$) were randomly allocated to the conditions of a 2 (Advisor Credibility: low vs. high) by 2 (Advice Severity: mild vs. severe) between-subjects experimental design (cell sizes ranged from 163–184). On average, participants owned 2.55 cats ($SD = 1.92$), had 1.01 ($SD = 0.58$) litter boxes per cat, 1.50 ($SD = 1.27$) scratch posts per cat, 1.25 ($SD = 0.66$) food bowls per cat, and 1.24 ($SD = 0.81$) water bowls or fountains per cat.

Materials and procedure

A complete overview of the materials can be found as supplemental materials. The study was approved by the Leiden University Psychology Ethics Committee (CEP19-0704/377). After providing informed consent to the anonymous use of their answers for research purposes, participants were asked to imagine a hypothetical situation in which they had two unrelated cats in their household.

One of these cats exhibited problematic behaviors by scratching the furniture, urinating in the house, and fighting with the other cat. A visit to the veterinarian had shown that there was no medical cause for this behavior. Participants subsequently received advice that was shaped depending on their experimental condition. That is, the advice either came from a less credible advisor and was mild, came from a less credible advisor and was severe, came from a highly credible advisor and was mild, or came from a highly credible advisor and was severe.

The *less credible advisor* was presented as a female neighbor, working as a nurse, who had owned cats for quite some time. She had not received any training in cat-behavior, and her advice was based upon her own experience as cat guardian. The *highly credible advisor* was presented as a female cat-behavior advisor, guardian of two cats who had been a professional cat-behavior advisor for years and was very experienced. She had received scientific training in cat-behavior and her advice was based upon scientific research. Participants in the *mild advice* condition were advised the following: “The problematic behavior is probably due to stress. It is recommended that you reduce this stress by providing a scratching post, making sure you empty the litter box once a day (cats like clean boxes) and playing with the cats regularly.” In the *severe advice* condition, participants were advised: “The problematic behavior is probably due to stress. It is recommended that you reduce this stress by placing scratching posts in every room accessible to the cats and by placing at least three litter boxes in different parts of the house and emptying them twice a day (cats like clean boxes). In addition, you can reduce stress by placing dry food and water bowls in at least three different rooms in the house (not next to each other and not near a litter box) and giving the cats wet food at two fixed times a day, spread out over at least three different bowls. You are also advised to create more high lying areas in the house and to play with the cats regularly.”³

In the subsequent questionnaire, unless indicated otherwise, all questions were presented as statements preceded by the question “To what extent do the following statements apply to you?.” Answers were assessed on five-point scales (1 = *not at all*, 5 = *very much*). Scales were created by averaging responses to the items.

The scales measuring attitude, subjective norms, perceived behavioral control and behavioral intention were adapted from Ajzen (2006). *Attitude* toward adopting the advice was assessed with four items ($\alpha = .94$; e.g., “I would consider it good to follow the advice in full”), *subjective norms* with four items ($\alpha = .78$; e.g., “Most other cat owners would follow the advice fully”), *perceived behavioral control* (PBC) with four items ($\alpha = .81$; e.g., “I would have little difficulty in following the advice in full”), and *compliance intention* with four items ($\alpha = .86$; e.g., “I would follow the advice to the full”). *Self-identity as cat guardian* was assessed with two items ($r = .44$, e.g., “I see myself as a true cat owner”).

The effectiveness of the advisor credibility manipulation was checked with five self-constructed bipolar items on which participants were asked to rate the advisor (*perceived advisor credibility*; $\alpha = .94$; e.g., 1 = *expert*, 5 = *amateur*, reverse coded). The effectiveness of the advice severity manipulation was checked with four bipolar items to rate the perceived severity of the advice (*perceived advice severity*; $\alpha = .91$; e.g., 1 = *severe*, 5 = *mild*, reverse coded). Finally, participants were asked to indicate the number of cats, litter boxes, scratch posts, and food bowls, and water bowls or fountains in their house, as well as their own age and gender. They were also asked to indicate to what extent they were currently experiencing behavioral problems with their cats ($M = 2.04$, $SD = 1.21$),⁴ and to what extent they understood cat behavior problems ($M = 3.26$, $SD = 1.09$). Upon completion of the questionnaire, participants were thanked and debriefed.

Results

Manipulation checks

Full-factorial analysis of variance of *perceived advisor credibility* revealed a main effect of Advisor Credibility only, $F(1, 699) = 186.75$, $p < .001$, $\eta_p^2 = .21$. As intended, participants in the high

credibility condition rated the advisor as more credible ($M = 4.04, SD = 0.92$) than participants in the low credibility condition ($M = 3.11, SD = 0.88$). A similar analysis of *perceived advice severity* revealed a main effect of Advice Severity, $F(1, 699) = 94.77, p < .001, \eta_p^2 = .12$. As intended, participants in the severe advice condition rated the advice as more severe ($M = 2.55, SD = 1.09$) than participants in the mild advice condition ($M = 1.84, SD = 0.83$). The analysis also yielded a small main effect of Advisor Credibility $F(1, 699) = 5.42, p = .020, \eta_p^2 = .01$, showing that participants in the high credibility condition rated the advice as somewhat less severe ($M = 2.11, SD = 0.99$) than participants in the low credibility condition ($M = 2.27, SD = 1.07$). Overall, these findings show that the manipulations were successful.

Preliminary analyses

Using full-factorial analyses of variance, we examined possible effects of Advisor Credibility and Advice Severity on the central outcome variables. There were no interaction effects but several main effects. An overview of the tests for main effects is presented in Table 1. Participants in the high credibility condition reported a more favorable attitude and subjective norm, and a stronger compliance intention, than participants in the low credibility condition. Participants in the severe advice condition reported lower PBC, a less favorable attitude and subjective norm, and a lower compliance intention than those in the mild advice condition. There were no effects on self-identity, which confirms the independent nature of this variable as a relatively stable and enduring trait.

Table 2 shows the intercorrelations between the variables in the model. Weak positive correlations were observed for self-identity, and strong positive correlations with compliance intention were observed for PBC, attitude, and subjective norm.

Hypotheses testing

In Hypothesis 1, we predicted that Advice Severity would have a negative effect on compliance intention, mediated by PBC. Advice Severity was already observed to have a negative effect on

Table 1. Means (and standard deviations) for main effects of Advisor Credibility and Advice Severity.

	Advisor Credibility			Advice Severity		
	Low	High	$F(1, 699)$	Mild	Severe	$F(1, 699)$
PBC	3.87 (0.98)	3.98 (0.95)	2.89 ^{n.s.} $\eta_p^2 = .00$	4.26 (0.73)	3.59 (1.06)	92.46*** $\eta_p^2 = .12$
Attitude	3.02 (1.11)	4.01 (0.91)	173.96*** $\eta_p^2 = .20$	3.66 (1.08)	3.40 (1.16)	12.96*** $\eta_p^2 = .02$
Subjective norm	2.94 (0.88)	3.43 (0.82)	60.09*** $\eta_p^2 = .08$	3.32 (0.84)	3.06 (0.90)	17.93*** $\eta_p^2 = .03$
Self-identity	3.95 (0.90)	4.01 (0.82)	0.80 ^{n.s.} $\eta_p^2 = .00$	3.96 (0.83)	4.00 (0.89)	0.43 ^{n.s.} $\eta_p^2 = .00$
Compliance intention	3.37 (1.06)	3.95 (0.97)	63.37*** $\eta_p^2 = .08$	3.91 (0.92)	3.43 (1.13)	42.94*** $\eta_p^2 = .06$

*** $p < .001$, n.s. = not significant.

Table 2. Means (and standard deviations), and intercorrelations of central outcome variables.

	$M (SD)$	1	2	3	4	5
1. PBC	3.93 (0.97)	-				
2. attitude	3.53 (1.12)	.39***	-			
3. subjective norm	3.19 (0.88)	.32***	.66***	-		
4. self-identity	3.98 (0.86)	.14***	.16***	.20***	-	
5. compliance intention	3.67 (1.06)	.64***	.82***	.63***	.16***	-

*** $p < .001$.

compliance intention (see Table 1). To examine the indirect effect, we conducted PROCESS mediation analysis (Hayes, 2017; 5,000 bootstraps). The indirect effect of Advice Severity on compliance intention via PBC was significant (boot indirect effect = -0.4593 , $SE = 0.0539$, 95% CI [-0.5702 , -0.3585]). The unstandardized regression weights are depicted in Figure 2. The direct effect of Advice Severity on compliance intention was no longer significant after controlling for PBC. As predicted, Advice Severity had a negative effect on compliance intention because it decreased guardians' PBC.

In Hypothesis 2, we predicted that Advisor Credibility would have a positive effect on compliance intention, mediated by attitude. The positive effect of Advisor Credibility on compliance intention was reported in Table 1. PROCESS analysis revealed that the predicted mediation was significant (boot indirect effect = 0.8056 , $SE = 0.0648$, 95% CI [0.6767 , 0.9279]). This shows that highly credible advisors elicited a higher compliance intention among cat guardians than less credible advisors because it rendered guardians' attitude toward the advice more positive (see Figure 3). The analysis also showed that the positive effect of Advisor Credibility on compliance intention became negative after controlling for attitude, which is indicative of a suppressor effect. Suppression can occur when a variable is related to an outcome variable through two or more separate mediators, and when one of those mediated effects is positive and the other negative. We will address this possibility in the discussion.

In Hypothesis 3, we predicted that self-identity would be positively associated with compliance intention, and this relationship would be mediated by subjective norm. The association between self-identity and compliance intention was positive, as can be seen in Table 2. PROCESS analysis revealed that the predicted mediation effect was significant (boot indirect effect = 0.1569 , $SE = 0.0301$, 95% CI [0.0977 , 0.2155]; see Figure 4). The relationship between self-identity and

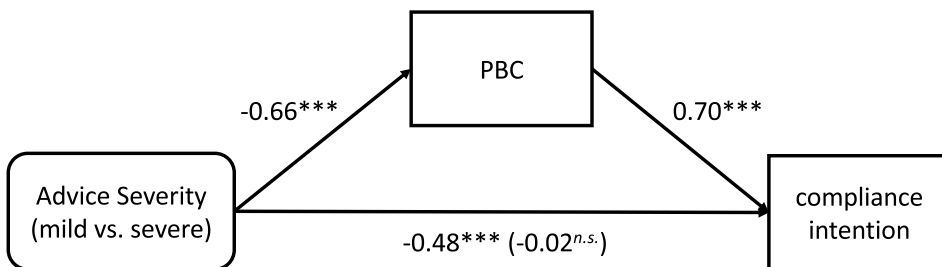


Figure 2. Effect of advice severity on compliance intention as mediated by PBC. Weights are unstandardized regression coefficients.

*** $p < .001$, *n.s.* = not significant.

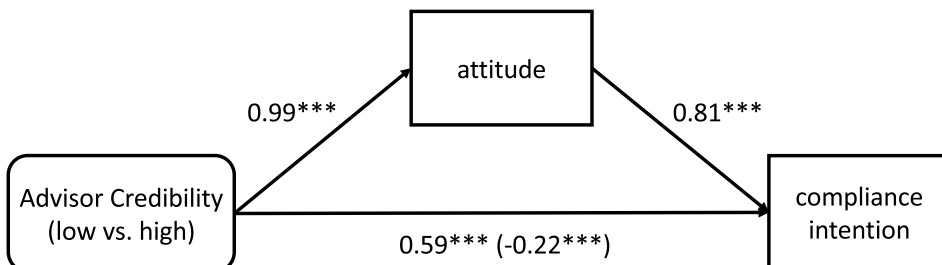


Figure 3. Effect of advisor credibility on compliance intention as mediated by attitude. Weights are unstandardized regression coefficients.

*** $p < .001$.

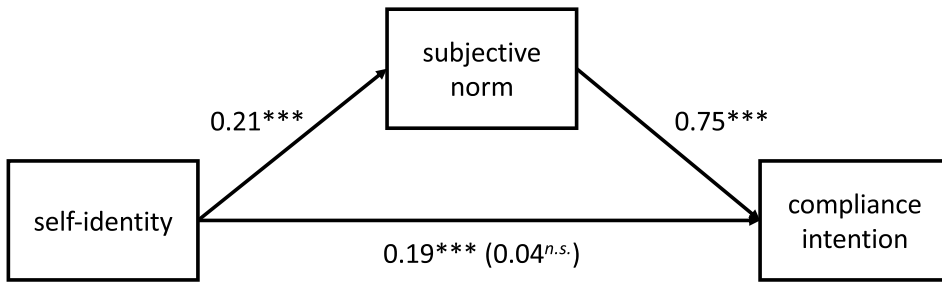


Figure 4. Relationship between self-identity and compliance intention as mediated by subjective norm. Weights are unstandardized regression coefficients.

*** $p < .001$, *n.s.* = not significant.

compliance intention was no longer significant after controlling for subjective norm. As predicted, self-identity was positively related to compliance intention because it led cat guardians to experience subjective pressure from other cat guardians to create a feline friendly environment.

Discussion

Feline behavioral problems can be managed successfully by good advice from cat-behavior professionals, provided that guardians comply with their expert advice. Environmental modification and enrichment have been proven to improve health and reduce behavioral problems among cats (e.g., Loberg & Lundmark, 2016; Vinke et al., 2014). However, they can also be experienced as quite invasive by guardians, making them reluctant to comply. The question this experimental survey study addressed was: “What can cat-behavior advisors do to increase their clients’ willingness to comply with their recommendations?.” This study is the first to experimentally investigate what factors can increase cat guardians’ intentions to adopt advisors’ recommendations. Such an investigation is crucial because the wellbeing of domestic cats lies squarely in the hands of their guardians. Cat-behavior advisors can prescribe elaborate treatments to address behavioral issues, but without guardians’ willingness to comply with their advice the problems will persist.

By systematically varying the severity of the advice and the credibility of the advisor, we were able to examine the causal effect of these factors on cat guardians’ compliance intention, as well as the underlying processes. As expected, advice that was relatively mild, involving only minor modifications to the home environment, elicited a stronger compliance intention than advice that was more severe, requiring more elaborate changes at home. This effect could be attributed to the fact that guardians believed that they were better able to incorporate the mild advice than the severe advice – in other words, to their perceived behavioral control (PBC). Advisors who were presented as highly credible due to their sound scientific knowledge and training also elicited a stronger compliance intention than advisors that were presented as less credible, because credible advisors produced more favorable attitudes toward the advice. Finally, self-identity was positively related to compliance intention through subjective norm, meaning that guardians who more strongly thought of themselves as cat guardians were more likely to adopt the advice because they believed that other cat guardians would do the same.

Unexpectedly, the positive effect of the manipulation of advisor credibility on compliance intention became negative after controlling for attitude. This suggests that this manipulation affected compliance intention via more than one path, such that one path suppressed the effect that ran via the second path. Tormala and Petty (2002) observed that people who received a message that countered their own stance on a subject actually became more strongly opposed to the message when it came from a highly credible source, as opposed to a less credible source. The reason for this counterintuitive effect is that highly

credible messengers force people to consider the reasons for their own standpoint, and this process sometimes serves to reaffirm and strengthen their original position. Less credible messengers are easier to ignore, which, ironically, makes it easier for them to breach potential defensive barriers. This suggests that the credibility of a cat-behavior advisor may affect guardians' compliance intentions in other ways than via their attitude, and that part of this alternative effect is negative (i.e., high credibility resulting in lower intention). However, the observed overall positive effect of the manipulation of advisor credibility on compliance intention indicates that the positive effect (i.e., high credibility resulting in higher intention) that runs via attitude is much stronger.

Limitations

There are a few limitations to this study that need to be addressed. First, we employed a scenario approach in which cat guardians were presented with a hypothetical situation. This method is particularly useful to examine causal effects of variables that are naturally confounded or difficult to manipulate (Aguinis & Bradley, 2014). However, it could also be criticized for lacking external validity. For example, the impact of emotions is limited compared with an experiential setting (Loewenstein, Weber, Hsee, & Welch, 2001), and a hypothetical situation precludes the measurement of actual compliance, in addition to compliance intentions. For this reason, we only selected current cat guardians as participants, as these would find it easier to immerse themselves in the situation.

Second, most of our participants were women. Higher response rates for women are often found in research in the area of pet ownership (e.g., Shore et al., 2008). In research by Shore et al. (2008), women did not differ from men in the likelihood of seeking help for problematic cat behaviors. However, Casey and Bradshaw (2008) found that female cat guardians were significantly more compliant with a cat-behavior treatment program than male guardians. Although a gender difference was not observed for any of the central outcome variables in the current study, the skewed male to female ratio means that we cannot preclude the possibility that female cat guardians respond more positively to environmental modification advice.

Third, participants in this study did not actively seek help from a cat-behavior advisor. It is possible that guardians, once the decision to reach out for help has been made, are more receptive to an advisor's recommendations. Compliance rates in other research in which pet guardians actively sought help for their animal, however, do not support the notion that seeking help guarantees perfect compliance (Casey & Bradshaw, 2008; Line & Voith, 1986; Takeuchi et al., 2000). Cat guardians may wish to solve their cat's unwanted behavior, but that does not mean that they like the means by which this can be achieved.

Suggestions for future research

Future research could examine advice compliance among cat guardians who have actually sought and received expert advice for their cat's problem behaviors. This approach would tackle some of the aforementioned limitations that are associated with the hypothetical nature of the current scenario approach.

Future research could also investigate whether there are specific aspects to advice that elicit greater resistance than others. In the current study, participants received a (small or large) list of different recommendations, ranging from adding water bowls or litter boxes to regulated playtime. Do guardians find it just as easy to place an extra water bowl, as, for example, an extra litterbox? Is there a difference between a recommended investment of money and an investment of time and energy? When assessing daily husbandry practices among a sample of 130 cat guardians, Alho et al. (2016) found that guardians were least likely to have implemented measures related to food and water, and measures related to space/rest/entertainment. However, these shortcomings may also be due to a lack of knowledge of the importance of such measures. It would therefore be interesting to investigate if guardians resist such measures once they have been informed of their importance and are aware of whether and how they can help alleviate cat-behavior problems.

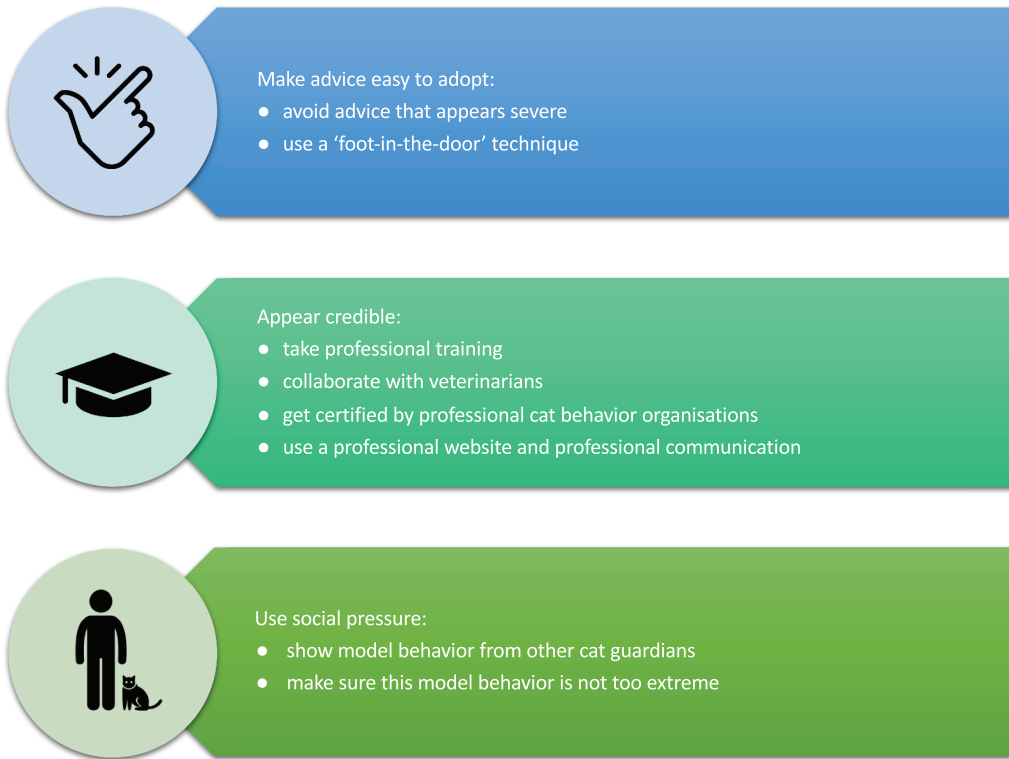


Figure 5. Overview of recommendations to cat-behavior advisors.

Practical recommendations

The current findings offer several practical tools to help cat-behavior advisors in their work. A summary of recommendations is presented in [Figure 5](#). First, it is important that advice is not experienced as too severe by cat guardians. What matters most here is guardians’ subjective perception of the difficulty of complying with the advice, rather than any objective standards of what constitutes “severe” or “mild” advice. Of course, the suggestion to avoid severe advice sounds easier said than done – what if invasive alterations to the home environment are what is needed to address the problem, and milder advice simply would not suffice? One strategy advisors could employ in such situations is what is known as a “foot-in-the-door” technique ([Burger, 1999](#)). This involves a stepwise approach in which a small request is followed up by a larger request. For example, cat-behavior advisors could start with providing only relatively mild modification advice that is easy to adopt. Once guardians make the requested modifications, their attitude toward social and environmental modification will become more positive to match their new behavior. The advisor can now give additional modification advice. The likelihood of compliance with this more severe advice at this point is higher than if the advice had been offered at the beginning. The foot-in-the-door technique is one of the most replicated techniques in the social sciences, and its effectiveness has been demonstrated in a wide range of domains including health ([Dolin & Booth-Butterfield, 1995](#)) and energy consumption ([Meineri & Guéguen, 2008](#)). [McLeod et al. \(2019\)](#) also proposed this technique for improving the management of free-roaming cats.

Advisors are also recommended to ensure their clients view them as credible and trustworthy, since the current research showed that credibility positively influenced guardians’ attitudes, subjective norms, and compliance intentions. In this regard, veterinarians probably have the advantage

over other cat-behavior advisors, as cat guardians may be more likely to trust the former's professional expertise. Shore et al. (2008) found that pet guardians seeking paid professional help for their animal's behavioral problems preferred a visit to the vet over a visit to other pet behavior advisors. However, not all veterinarians have received extensive training in animal behavior, and not all veterinarians (are willing to) take the time needed for a thorough anamnesis and development of a treatment plan, which often requires one or more visits to the client's home (Turner, 1997). Non-medical cat-behavior advisors, on the other hand, may be trained to do just this and take the time for it.

First and foremost, cat-behavior advisors should ensure they have received sound training in animal behavior before advertising their skills. Non-medical trained cat-behavior advisors working with veterinarians can benefit from the latter's professional reputation, and vets can refer their clients to advisors who are specialized in cat-behavior and able to devote sufficient time to a case. Turner (1997) also suggested that cat-behavior advisors could enhance their perceived credibility by aligning themselves with professional animal behavior associations that offer certificates or titles to qualified professionals. Importantly, advisors should communicate their professionalism clearly to their clients, for example by listing their qualifications and credentials on their website (Wathen & Burkell, 2002).

Credibility can also be promoted using so-called "peripheral cues": factors that are unrelated to the advisor's professional expertise but that still provide a relatively low-effort basis for determining the advisor's credibility. For example, the format and layout of a website, and even the speed of loading, have all been found to affect perceived credibility (Wathen & Burkell, 2002). Cat-behavior advisors who wish to ensure their credibility in the eyes of their clients should therefore see what they can do to enhance their professional appearance. This factors such as speedy and correct responses to e-mails from clients, a professional attitude during house visits, and professionally formatted treatment plans.

Professional communication skills can further contribute to an advisor's credibility. Good communication skills result in higher client satisfaction, trust, and increased compliance with a treatment program (Artemiou et al., 2014). Interestingly, communication training is not a major component (if at all) in most veterinary curriculums (Pun, 2020). Consequently, several trained professionals may have ample expertise in treating pet behavior problems, but lack the communication skills necessary to promote clients' trust in and compliance with the treatment program. A sound training in client-advisor communication could boost the advisor's perceived credibility.

We found that cat guardians who strongly identified as such believed that other cat guardians took advanced steps to make their homes cat-friendly, and felt pressured to do the same. People care about what others think of them – at least to the extent that these others are important for how they view themselves. Social pressure is a strong motivator for behavior, and its influence has also been demonstrated in the context of cat guardianship (Zito, Vankan, Bennett, Paterson, & Phillips, 2015). As self-identity is a relatively stable and enduring trait, it is difficult to influence directly. However, cat-behavior advisors could attempt to strengthen the association between self-identity and subjective norm by offering accounts from other cat guardians performing model behavior (McLeod et al., 2019). Simply providing information about the behavior of others can have a noticeable influence on people's own behavior (e.g., Pliner & Mann, 2004). For example, advisors could include blogs or testimonials about these behaviors on their website or share photographs of enrichment efforts from other cat guardians via social media or when visiting their clients. Advisors should make sure, however, that these shared examples are not experienced as too extreme by their clients. Clients confronted with very advanced modification examples from other cat guardians may feel that these are not the type of guardians they can relate to, and, as a result, they are less likely to be influenced by their behavior.

Notes

1. In the original formulation of the theory, perceived behavioral control was assumed to moderate the relationship between attitude and intention and between subjective norm and intention. However, later formulations have treated perceived behavioral control as a direct determinant of intention with a status equal to that of attitude and subjective norm (Ajzen, 1991, 2020).
2. Prior research confirms the predictive validity of the Theory of Planned Behavior in hypothetical situations (e.g., Norman, Clark, & Walker, 2005; Randall & Gibson, 2013).
3. Individuals can differ in the extent to which they judge recommended modifications as mild or severe. However, individual differences or the factors that cause them are not the focus of investigation in the current paper. We therefore shaped the severity manipulation such that the advice in the mild condition differed substantially from that in the severe condition, in order to increase between-subjects variance (relative to within-subjects variance).
4. Since the overall mean of current cat-behavior problems is moderate to low (i.e., below the scale midpoint), it could be argued that participants in our sample were less qualified to judge how they would respond to receiving advice to tackle cat-behavior problems. We therefore repeated the analyses reported in the results section using only those participants that reported moderate to high levels of current cat-behavior problems (responses 3, 4, 5; $N = 207$, $M = 3.69$, $SD = 0.75$). The results from this sample are completely in line with those reported in this paper, indicating that whether or not guardians were currently experiencing behavior problems with their cat(s) did not affect their responses to the advice.

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Data availability statement

The data that support this study are available upon reasonable request from the corresponding author. The data are not publicly available due to privacy restrictions.

ORCID

Esther van Leeuwen  <http://orcid.org/0000-0003-3048-1127>

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