



Engaging dog trainers in a city-wide roll-out of koala aversion skill enhancement: a social marketing program

Author

Harris, Jessica A, Rundle-Thiele, Sharyn, David, Patricia, Pang, Bo

Published

2021

Journal Title

Australasian Journal of Environmental Management

Version

Accepted Manuscript (AM)

DOI

[10.1080/14486563.2021.1944344](https://doi.org/10.1080/14486563.2021.1944344)

Rights statement

This is an Author's Accepted Manuscript of an article published in the Australasian Journal of Environmental Management (AJEM), 08 Jul 2021, copyright Taylor & Francis, available online at: <https://doi.org/10.1080/14486563.2021.1944344>

Downloaded from

<http://hdl.handle.net/10072/406100>

Griffith Research Online

<https://research-repository.griffith.edu.au>

Engaging dog trainers in a city-wide rollout of koala aversion skill enhancement: A social marketing program

Jessica A Harris, Prof Sharyn Rundle-Thiele, Dr Patricia David & Dr Bo Pang

Social Marketing @ Griffith, Griffith University, 170 Kessels Road, Nathan, Queensland, Australia.

Abstract

Koalas are an Australian icon, and their existence is under threat. Environmental protection efforts that centre on people are needed, ensuring the human dimension is considered in conservation efforts aiming to protect wildlife. This article reports process and outcome evaluation results for a social marketing program that aimed to reduce dog and koala interactions. This project aimed to leverage pilot study outcomes. Specifically, the program sought to embed koala aversion (the ability for a dog to avoid koalas) skills within one local government area. A total of 2,013 dog owners were surveyed to assess program outcomes, with improved dog abilities observed following city-wide program implementation. Further evidence of program success were indicated in the process evaluation. Dog trainers and dog owners were satisfied, willing to recommend the program to other people, and they were willing to attend events in future. Lessons learned, implications, limitations of the current study and future directions are outlined.

Keywords: wildlife conservation; social marketing, koala aversion, behaviour change

Introduction

Literature makes it clear that pet owners need to be empowered (McLeod et al, 2019) or engaged (Linklater et al., 2019) to achieve the environmental outcomes sought. Approaches that have been applied to reduce domestic pet and wildlife interactions have mainly focussed on reducing interactions through installation of collars and bells (Calver et al. 2007, Hall et al. 2016), which serve as noise deterrents warning wildlife that predators (e.g., domestic cats) are nearby. These interventions require owners to be willing to place the collar onto the cat. More work is needed to understand what pet owners want and need. For example, a study by Nelson, Evans, and Bradbury (2005) concluded that bells or sonic devices mounted on quick release collars appear to offer an effective means of partially alleviating wildlife attacks without compromising cat welfare. This demonstrates researcher focus on addressing pet owner concern for the cats' welfare, delivering a device that can spring off, keeping the cat safe thereby meeting pet owners' needs.

In addition to the need to consider pet owners, other people who influence pet owners (e.g., vets, pet shop owners and workers, friends, family and other people) must also be taken into consideration. A lack of stakeholder consideration across planning, implementation, design and evaluation of interventions is evident (Buyucek et al. 2016), and the need to act 'with' stakeholders has been noted (McLeod et al., 2019). In addition to including pet owners, the involvement of other stakeholders in program design, implementation and evaluation is optimal. In light of the need to include primary stakeholders in behaviour change programs, the two dimensions of stakeholder theory (Freeman 1984) framed city wide program design and implementation. The first dimension of the stakeholder theory focuses on 'firm' purpose. Within this program we considered what the program could do for trainers. Consequently, program planning

sought to assist dog trainers to embed koala aversion as a core skill they could deliver in their dog training services. The second dimension considered the role of other stakeholders with an interest in reducing pet and wildlife interactions.

To understand what dog owners' think, feel and do, and what had previously been implemented to reduce dog and koala interactions, the team undertook a systematic literature review, survey and expert interviews, followed by consumer co-design sessions with dog owners (see Rundle-Thiele et al., 2019 for full study detail). Dog owners wanted programs that were fun and focussed on a broader range of wildlife (e.g., including a focus on possums, snakes, birds, toads and lizards). Dog owners made it clear in the co-design sessions that they did not want programs that focussed solely on koalas. Importantly, dog owners wanted to be shown what to do. Dog owners sought programs that could help them to build confidence (see Rundle-Thiele et al., 2019). Denning practices were also recommended in the co-design sessions as an additional means that dog owners would consider for ensuring the safety of wildlife at night. Koala movement occurs during the night so dog and koala interactions can be reduced by ensuring dogs sleep in secure spaces at night, rather than being left free to roam.

From the findings the pilot (Stage 1) was designed. The pilot study concentrated on two behaviours - denning and koala aversion (the ability for dogs to avoid koalas). The program was trialled in the Redland City Council area, in South East Queensland, Australia, in 2017 with a four-week dog training course that included koala aversion as one of seven skills. Dog owners paid for this dog training program (see Rundle-Thiele et al., 2019). The trial delivered a proof of concept demonstrating that trainers servicing the local council area could learn to teach koala aversion and in turn they could teach dog owners, improving dog abilities to avoid koalas (David et al. 2019).

Following success in the trial, a city-wide roll out of the *Leave It* program followed. Stage 2 of the project sought to extend the piloted approach. It aimed to engage all dog training companies, breeders and veterinarians servicing the Redland City Council area in the training program. *Leave It* training delivered by expert dog trainers equipped the dog training companies with the ability to teach koala aversion. Dog trainers were able to include koala aversion as and when needed in their dog training service offerings. This article reports the process and outcome evaluation results of the initial city-wide rollout of the *Leave It* program, which occurred over a 12-month period. It also describes the communication materials and outlines the different platforms utilised by the project team. Finally, the article discusses factors that contribute to the low uptake from dog trainers in the Redlands area.

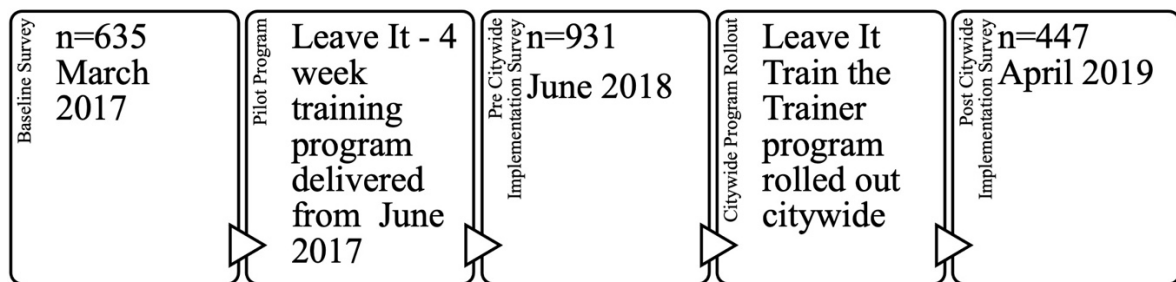
Method

Guided by the RE-AIM framework (Glasgow, Vogt, and Boles 1999), a multi-method process and outcome evaluation was undertaken to evaluate the city-wide roll out for the *Leave It* program. The outcome evaluation, administered through self-report surveys, was conducted using three waves of data collected before the *Leave It* pilot, prior to, and following Stage 2 of the *Leave It* program. A repeated measure design was used to assess dog abilities pre and post program implementation to measure program success (or failure to achieve desired outcomes). Further, the RE-AIM framework measured and monitored communication channels (e.g., radio, bus shelter advertising, social media and flyers).

Baseline data was collected prior to the *Leave It* pilot program in March 2017 (n=635). See David et al. (2019) for more details of the pilot program evaluation. The second round was conducted prior to city-wide implementation of the *Leave It* program

in June 2018 (n=931). Post implementation of Stage 2 of the city-wide *Leave It* program delivery, a follow-up survey was conducted in April 2019 (n=447). See Figure 1.

Figure 1. Leave It Citywide Rollout- Project Implementation and Evaluation



City-wide (Stage 2) baseline survey

Prior to implementation of *Leave It* city-wide program, a sample of dog owners residing in the Redland City Council area was asked about their dog abilities (sit, stay, stay quiet on command, come when called, koala aversion and more) and denning practices (where the dog sleeps at night). Intercept surveys were conducted to recruit dog owners. Trained research assistants were deployed in dog parks, bus stations, and shopping malls to collect surveys over a three-week period. Dog behaviours were measured through the question ‘Which of the following [behaviours] can your dog do?’ For each one of the seven behaviours, respondents rated their dogs’ behaviour using a 5-point Likert-type scale where 1 is ‘Never’ and 5 is ‘Always’. A total of 931 people completed the survey prior to Stage 2 city-wide roll out for the *Leave It* program, which

represents approximately 0.5% of the region's population, given the estimated population size of Redlands is 158,815 according to Redland City Council website.

Recruitment of dog trainers

A comprehensive process was used to identify dog trainers servicing the Redland City area. The Internet was searched, experts were asked and finally residents completing the baseline survey were asked whether they had previously received dog training. Following identification of dog training, dog breeding and veterinarian companies servicing the Redland City area, dog trainers were contacted, and they were offered free koala aversion and denning training delivered by two well-known expert trainers. Trainers who attended the free one-day workshop were asked to include the new training techniques into their daily programs. As incentive, trainers were able to offer dog owners whose dogs could demonstrate the koala aversion ability a free 6-month Redland City Council registration.

Train-the-trainer workshops

Twenty-four dog training companies were able to be contacted. From those contacted, 11 participated in the free one-day training sessions – a sign up rate of 46 per cent. One-day train-the-trainer workshops were held on 15th September and 27th October 2018. A total of 31 trainers from the 11 companies attended sessions. Trainers brought some dogs along which gave them practical hands-on experience. The main techniques used on the day focussed on the use of koala scent (scat drawn from the local area) that was applied to a taxidermy koala (mounted deceased koala) or a soft toy koala. The koala scat delivers the scent needed to train dogs to avoid koalas. Trainers completed an

evaluation survey at the end of their training day to assess satisfaction level with the workshops. Survey measures used 5-point Likert-type scales where 1 was 'very dissatisfied' and 5 was 'very satisfied'. All 31 trainers completed the survey.

Public seminars

The expert trainers also ran two, two-hour seminars for the public, on the 15th September and 27th October 2018. The public seminars focussed on a range of dog abilities including 'sit, stay, come, basic recall, denning and koala aversion'. A survey was handed out at the end of each seminar to attendees. A total of 218 people attended and a survey response of 49 per cent was achieved (n =107). The public seminar survey aimed to understand satisfaction rating (Tam 2004), likelihood of re-attendance (Merom et al. 2005) and willingness to recommend future seminars to other dog owners (Hodgkins et al. 2019). Again, the survey measures used 5-point Likert-type scales where 1 was 'very dissatisfied' and 5 was 'very satisfied'.

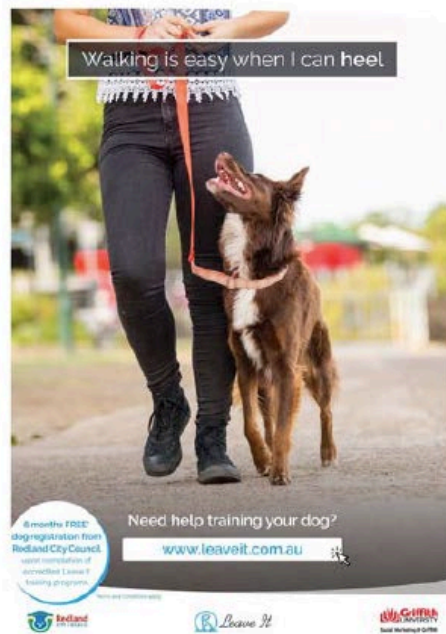
Communications campaign

The train-the-trainer workshops and public seminars were supported with a comprehensive communication campaign delivering messages direct to the public through a variety of platforms including social media, radio, bus shelters, flyers and posters. Communication materials aimed to raise awareness for seminars and to direct dog owners to the *Leave It* website over the 12 month city wide roll out period. Examples of the communication messages are displayed in Figure 2.

Figure 2. Selection of marketing material from the *Leave It* campaign



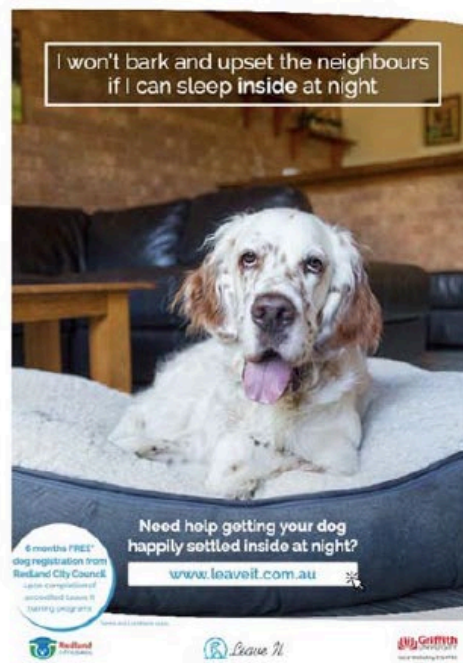
(a)



(b)



(c)



(d)

Social media was utilised to promote both the train-the-trainers and public seminars (see Figure 2). Flyers and posters were placed in local businesses servicing the Redland City dog owning community. These delivered specific communication messages emphasising benefits of dog training and denning and encouraging dog owners to seek

training help. All printed and online messages contained direct links to the *Leave It* website. Radio advertising for the public seminars was conducted over a one-week period prior to each seminar. Bus shelter advertising was also used in two locations, delivering messages on dog training and denning practices. Finally, a community magazine was used to help reach the audience. Metrics of the success of the communications included reach, likes, comments, shares and ultimately sign-ups to the workshops. Social media analytics were also recorded such as likes, shares, impressions over the course of the campaign.

Follow up survey

The same survey was sent once again in May 2019, following program implementation, to 361 dog owners who had indicated their willingness to be re-contacted in the city-wide baseline survey. Outcome measures (e.g. dog behaviours) were identical to the baseline survey with added campaign evaluation questions (e.g. awareness and liking of campaign elements). A further 1192 dog owners who had participated in the 2017 pilot had indicated their willingness to be re-contacted by the research team. See more details from David et al. (2019). In total all 1553 respondents were re-contacted from all previous surveys. Independent samples t-tests were used to compare dog owners who had participated in the *Leave It* program (n = 44) with dog owners who had not been exposed to the program (n = 317).

Results

Workshops and public seminars

The results from each workshop and public seminar are shown in Table 1 below. Results indicated high levels of satisfaction, with all local dog trainers reporting being satisfied or very satisfied with the workshops. Trainers indicated they would be likely to

recommend workshops to other trainers and to re-attend workshops in future. Evaluation surveys were also collected in public seminars. Results from people attending the public seminars indicated that dog owners were satisfied or very satisfied with the public seminars. The majority of the trainers and participants indicated high satisfaction, a willingness to recommend the program to other dog trainers and they were willing to attend again in future.

Table 1. Satisfaction and re-attendance for trainers and public seminars

Workshops	Number of participants	Satisfaction rating Satisfied/very satisfied	Likelihood of re-attendance	Recommendation to others Likely/very
Train-the-trainers workshop 1	15	100%	100%	100%
Train-the-trainers workshop 2	16	88%	94%	100%
Public seminar 1	24	100%	83%	96%
Public seminar 2	25	84%	96%	96%

Feedback from dog training companies that chose not to participate indicated a lack of interest in koala aversion training. Some said there was no value in receiving additional denning training, as denning is a main training protocol. Some said they did not want to come to training held by a university or a council, and that they did not want to have stipulations placed on their business to adhere too. Stipulations included promotion of *Leave It* in their training modules, time provided to the animal shelter once trained in *Leave It* and providing field notes from their training when uses *Leave It* methods. Others made statements such as ‘[we] have been in this business for years, and

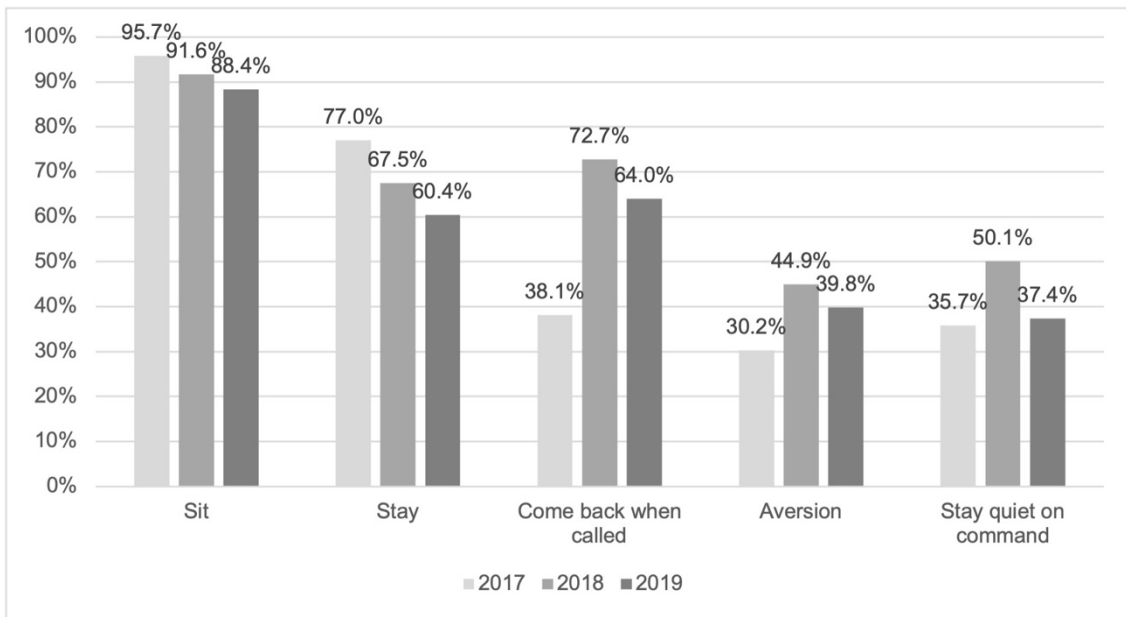
don't need training' or they felt that *'we are in direct competition with your trainers.'*

Finally, the timing of the train-the-trainer workshop may have affected the decision for some trainers to attend (or not). Dog trainers advised that weekends were their busiest times and having these training days impacted their business.

Outcome evaluation of dog abilities

All of the surveys measured dog abilities, including sit, stay, comeback when called, aversion, and stay quiet on command (see Figure 3). Repeated outcome measures applied in the surveys across all three waves indicated that sit and stay are the most common dog abilities present in the Redland City Council area. Despite remaining high, rates of ability to sit and stay decreased over time. Our expert train the trainer sessions were delivered as a one-off event and feedback from the expert trainers indicated that trainer abilities could be further improved. Lack of sustained change in dog abilities suggests that follow up train the trainer sessions are needed to achieve long term increases in dog abilities. The results show that aversion and stay quiet on command increased between the first (2017) and second survey waves (2018) while rates reduced by the time of the third and final survey (2019), suggesting continued efforts are needed for increases over time.

Figure 3. Outcome evaluation of dog abilities



Evaluation of communications

Overall a positive impact through social media likes, shares and comments from organic social media posts. In total 463 Redland City community members were reached through multiple Facebook pages (for example, Redland City Council official page and Animal Management page). In total there were 164 responses to invitations to the four workshops and seminars provided to the public. Table 2 below provides a full breakdown of social media outcomes. Both the train-the-trainers and the seminar (public) were promoted together on social media. This was done from the Facebook pages *Leave It wasn't running* (Redland City Council official page and Animal Management page). Promotion on flyers throughout the area were promoted separately. When a dog owner or trainer saw the posts on social media, the link provided a choice to either register as a dog trainer or dog owner.

Table 2. Organic (unpaid) social media reach

Social media channels	Likes	Shares	Comments	Confirmations	Total reach
Workshop and seminar announcement 1	67	25	42	69	203
Workshop and seminar announcement 2	57	18	17	59	151
Advanced training	30	9	34	36	109
Total	154	52	93	164	463

Bus shelter advertising was used for the last six months of the *Leave It* campaign (January to July 2019). Total reach for drivers going past two bus shelters was 37-38,000 per day and the average number of people using both bus shelters was 37 per day. Both areas are high reach sites for bus shelter advertising in the Redland City Council city area. Radio advertising had enormous reach with an estimated audience of 988,000, reaching beyond the Redland City Council local government area. While reach was high, only three sign-ups could be directly attributed to the radio advertisement. A total of 447 respondents participating in the post survey collected in April 2019 were asked whether they recalled the *Leave It* program, 12.2 per cent could recall the *Leave It* program, indicating that only one in ten dog owners was aware of the *Leave It* program. These

respondents reported receiving *Leave It* messages or training materials in the follow-up survey in 2019 through multiple channels, including posters, training companies, Redland City Council Facebook page, as well as friends and family.

Program summary

Overall, the RE-AIM framework provides a summary of all the above outcome results from the city-wide roll out (see Table 3).

Table 3. RE-AIM outcome results

RE-AIM dimension	Project aims	Outcomes
Reach	<p>10% increase in unique visits on the <i>Leave It</i> website</p> <p>10% increase in people reached on Facebook</p> <p>10% increase in likes and comments on <i>Leave It</i> Instagram account</p>	<p>2,037 unique visits on the <i>program</i> website (29% increase from pilot)</p> <p>Over 350 flyers distributed</p> <p>48,694 people reached on Facebook (31% increase from pilot)</p> <p>199 likes, 45 shares, and 96 comments for organic workshop and seminar Facebook posts</p> <p>198,000 people reached on radio advertisement and bus shelters.</p>
Effectiveness	<p>To increase dog obedience abilities through the participation in the <i>Leave It</i> program (Sit, stay, heel, aversion/not chase things, come back when called, stay quiet on command, crate use)</p>	<p>While increases in come back when called, aversion and stay quiet on command are higher in 2018 and 2019 than pre <i>Leave It</i> levels, the results of the city-wide roll out indicate that the addition of the <i>Leave It</i> branded dog training (aversion and denning) may not have been embedded fully into programs.</p>
Adoption	<p>Achieve 85% uptake for local dog trainers and dog breeders in train-the-trainer sessions over the 12-month period (minimum of 12 of the 14 dog training companies in Redland City Council undertake <i>Leave It</i> - Train the Trainer sessions)</p> <p>A minimum of 4,500 dog owners to participate in individual or group training sessions, talks or workshops that incorporate koala aversion training</p>	<p>46% of dog training companies from the Redland City Council area became <i>Leave It</i> accredited by undertaking the program's training.</p> <p>A precise number of dog owners trained in koala aversion skills cannot be confirmed directly. 11 dog training businesses undertook <i>Leave It</i> Train-the-Trainer sessions. 169 dog owners attended public seminars.</p>

RE-AIM dimension	Project aims	Outcomes
Implementation	Satisfaction for <i>Leave It</i> program participants to remain high and stakeholder participation benefits to remain high >6.0 out of 7	Over 87% participants in the train the trainer workshops reported they were satisfied, and over 93% reported they were likely to attend another workshop. Over 84% public seminar attendees reported high levels of satisfaction. 12.2% of the surveyed community reported recalling <i>Leave It</i> .
Maintenance	85% of participants express their intention to attend <i>Leave It</i> seminars again	83% respondents attending the first public seminar reported high likelihood they would attend the seminar again. 96% respondents attending the second public seminar reported high likelihood they would attend the seminar again.

Discussion

This study contributes to the literature in two ways. First, this paper demonstrates that progress can be made to incorporate skills into a community to benefit wildlife and it delivers additional evidence outlining how a program focussed on meeting dog owner needs can be rolled out to empower a community to change its behaviour, benefitting wildlife. These contributions are discussed in turn.

Skills can be embedded into communities to benefit wildlife

This study attempted to implement the city-wide roll out of a behaviour change program that aimed to embed koala aversion as a skill that could be taught by dog trainers servicing the Redland City Council. It encouraged residents within the Redland City area to take up the training provided through public seminars on aversion and denning practices in urban and peri-urban areas where koalas are present, and to advise the community of the importance of having well trained dogs. Identifying and collaborating through stakeholder engagement was needed to ensure long term success (Thompson et al. 2003, Atkins et al. 2017) including communicating with an array of stakeholders. The outcome evaluation data indicated that koala aversion was higher following program implementation. It is important to note, outcome results indicate more work is needed to increase koala aversion abilities. The process evaluation indicated that more progress can be made with local dog trainers, given low uptake of koala aversion training by dog trainers (46 per cent of all dog trainers elected to participate in free one-day workshops) and low awareness for *Leave It* offerings in the community - with only one in ten dog owners aware of the program was evident following program implementation.

Using human-centred design to increase wildlife aversion in dogs

Human-centred design and implementation approaches listen to people, understanding how people chose to work, live and play (Rundle-Thiele et al. 2019). Human-centred design should be used to build programs that people want, to ensure benefits sought can be realised. This understanding is used by program designers to ensure that the desired outcome (wildlife aversion) was implemented in a manner that meets people's needs and wants (David et al. 2019). This article contributes further evidence that specialised skills (e.g. koala aversion) can be developed in the dog training community servicing a local government area, to benefit koalas in the area.

Extending the human centred design to all stakeholders

A final contribution arises from research conducted during this project. City wide implementation sought to roll out the pilot program approach indicated by dog owners in co-creation research (see Rundle-Thiele et al., 2019). This city-wide implementation project did not apply co-creation research with stakeholders including the dog training community prior to city wide program implementation. The lack of stakeholder consideration across the planning, implementation, design and evaluation was evident in program performance. Although the *Leave It* city-wide roll out commenced with large-scale effort focussed on identifying all dog trainers, dog breeders and veterinarians servicing the local government area, there was no program uptake from dog breeders and veterinarians, which suggests alternative value offerings are needed. A key deficiency in the stakeholder consideration in this project was the failure to include all stakeholders in program design and planning (trainers, breeders and veterinarians). In order to deliver lasting long-term partnerships, consideration of the needs and wants of each key stakeholder group are needed to ensure their interests and needs are met from

participation in any program (Buyucek et al. 2016) in addition to the needs of dog owners whom they service.

While the 4-week *Leave It* pilot program was initially built with dog owners and included input from some stakeholders (e.g. one on one interviews with each stakeholder type) we had not applied the co-design method to learn what dog trainers, vets and dogs breeders wanted and needed from a program aiming to involve them to equip dog owners with koala aversion skills.

Limitations and suggestions for future research

One key limitation of the study is the lack of measures of dog attacks on koalas following program implementation. Future research is recommended that collects veterinary hospital data, wildlife care and injured species management to monitor the number of koala deaths from dog attacks that occur in local government areas. By tracking koala deaths over time an understanding of the extent that the *Leave It* program reduces koala deaths from dog attacks can emerge. Technologies are available to support dog owners in delivering real time data via koala GPS tracking. GPS tracking can alert dog owners when koalas are present, delivering a call to action to keep their dogs inside when koalas are nearby. Ideally, research should be undertaken with the people who report koala deaths to gain insights into koala death causes. For example, understanding whether dog owners were present and where dogs were housed at night will deliver further insights from the community, to assist in program planning.

As noted previously, co-design was not used in the citywide implementation project for *Leave It* and this is considered a key limitation. Co-design is one participatory design method that can be applied to ensure programs are designed by and not for stakeholders (David et al. 2019, McLeod, Hine, and Driver 2019). Future research is

needed to extend understanding about why some trainers servicing the council area chose not to engage in the *Leave It* program. Co-design offers one methodological approach that can be applied to understand what a koala aversion and denning program would like for all citywide stakeholders who would be involved in program implementation. Process evaluation results identified that weekends were the busiest times for dog trainers and offering training days on weekends, as occurred in the citywide implementation project, was inconvenient. Had research been undertaken prior to citywide implementation to take stakeholders needs and wants into consideration this issue would have been identified prior to program roll-out. More offerings should be held through the week to combat timing issues identified in this study. Based on the learnings from the city-wide roll-out of the project and the limited number of businesses that signed up; the need to understand the barriers and challenges faced by dog trainers is crucial when attempting to change behaviours.

Conclusion

This article has contributed to understanding demonstrating successes and failures in human centred approaches to wildlife protection. Drawing on outcome success demonstrated in a 4-week pilot program this implementation project aimed to embed the program citywide. Whilst progress was made increasing a range of dog abilities, areas for improvement were identified. This study delivers further evidence that the city wide roll out of approaches that are designed by dog owners and are supported by experts including dog trainers can deliver the intended outcomes. Progress in the koala aversion ability demonstrates capacity for the one-off training sessions to deliver improved outcomes that can benefit wildlife. Follow up sessions are needed to ensure sustained improvements over time given that wear out effects were evident. Moving forward stakeholder

involvement at all stages including stakeholder involvement in co-design are recommended.

Reference List

- Atkins, Lou, Jill Francis, Rafat Islam, Denise O'Connor, Andrea Patey, Noah Ivers, Robbie Foy, Eilidh M Duncan, Heather Colquhoun, and Jeremy M Grimshaw. 2017. "A guide to using the Theoretical Domains Framework of behaviour change to investigate implementation problems." *Implementation Science* 12 (1):1-18.
- Buyucek, Nuray, Krzysztof Kubacki, Sharyn Rundle-Thiele, and Bo Pang. 2016. "A systematic review of stakeholder involvement in social marketing interventions." *Australasian Marketing Journal (AMJ)* 24 (1):8-19. doi: 10.1016/j.ausmj.2015.11.001.
- Calver, Michael, Sandra Thomas, Stuart Bradley, and Helen McCutcheon. 2007. "Reducing the rate of predation on wildlife by pet cats: The efficacy and practicability of collar-mounted pounce protectors." *Biological Conservation* 137 (3):341-348. doi: 10.1016/j.biocon.2007.02.015.
- David, Patricia, Sharyn Rundle-Thiele, Bo Pang, Kathy Knox, Joy Parkinson, and Felix Hussenoder. 2019. "Engaging the Dog Owner Community in the Design of an Effective Koala Aversion Program." *Social Marketing Quarterly* 25 (1):55-68. doi: 10.1177/1524500418821583.
- Duane, Sinead, Christine Domegan, Patricia McHugh, and Michelle Devaney. 2016. "From restricted to complex exchange and beyond: social marketing's change agenda." *Journal of Marketing Management* 32 (9-10):856-876. doi: 10.1080/0267257X.2016.1189449.
- Fauville, Géraldine, Craig Strang, Matthew A. Cannady, and Ying-Fang Chen. 2019. "Development of the International Ocean Literacy Survey: measuring knowledge across the world." *Environmental Education Research* 25 (2):238-263. doi: 10.1080/13504622.2018.1440381.
- Freeman, R. Edward. 1984. *Strategic Management: a stakeholder approach*. Vol. 25. Boston: Pitman.
- Glasgow, R. E., T. M. Vogt, and S. M. Boles. 1999. "Evaluating the public health impact of health promotion interventions: the RE-AIM framework." *American Journal of Public Health* 89 (9):1322-1327. doi: 10.2105/AJPH.89.9.1322.
- Hall, Catherine M., Kate A. Bryant, Joseph B. Fontaine, and Michael C. Calver. 2016. "Do collar-mounted predation deterrents restrict wandering in pet domestic cats?" *Applied Animal Behaviour Science* 176:96-104. doi: 10.1016/j.applanim.2015.12.006.
- Hodgkins, S., S. Rundle-Thiele, K. Knox, and J. Kim. 2019. "Utilising stakeholder theory for social marketing process evaluation in a food waste context." *Journal of Social Marketing*.
- Hurt, Aimee, and Deborah A Smith. 2009. "Conservation dogs." *Canine ergonomics: the science of working dogs*. CRC Press, Boca Raton, Florida, USA:175-194.
- McLeod, Lynette J, Donald W Hine, and Aaron B Driver. 2019. "Change the humans first: Principles for improving the management of free-roaming cats." *Animals* 9 (8):555.
- Merom, Dafna, Chris Rissel, Ajsa Mahmic, and Adrian Bauman. 2005. "Process evaluation of the New South Wales Walk Safely to School Day." *Health Promotion Journal of Australia* 16 (2):100. doi: 10.2271/1036-1073.16.2.2611.

- Nelson, SH, AD Evans, and RB Bradbury. 2005. "The efficacy of collar-mounted devices in reducing the rate of predation of wildlife by domestic cats." *Applied Animal Behaviour Science* 94 (3-4):273-285.
- Rundle-Thiele, S., B. Pang, K. Knox, P. David, J. Parkinson, and F. Hussenoeder. 2019. "Generating new directions for managing dog and koala interactions: A social marketing formative research study". *Australasian Journal of Environmental Management*. 26(2), 173-187. doi: <https://doi.org/10.1080/14486563.2019.1599740>.
- Tam, Jackie LM. 2004. "Customer satisfaction, service quality and perceived value: an integrative model." *Journal of marketing management* 20 (7-8):897-917.
- Thompson, Janette R, Joe P Colletti, Steven E Jungst, and Barbara L Licklider. 2003. "Preparing tomorrow's foresters: Embedding professional interactive skills in a technical discipline." *Journal of forestry* 101 (7):8-13.