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## Strategies for putting an end to dog bite injuries: Let's start at the very beginning?

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### Abstract

Despite the fact that dogs are carnivores, derived genetically from one of the most fearsome predators on earth, most dogs never bite people. This is miraculous given the number of dogs in our community and how closely they live with humans. A very small proportion of dogs do bite people, sometimes causing significant injury or even death. This is perhaps not surprising, given their genetic heritage and the environment in which we keep them, but it is not acceptable. Given the fact that most dogs never bite, it is clearly theoretically possible to aim for a world in which no dogs bite. To achieve this aim it is important to understand where modern dogs come from and to generate strategies for producing 'better' canine companions. In this session the dog breeding industry in Australia will be briefly analysed. Panel members will then interactively discuss alternative breeding strategies that could potentially reduce and perhaps even put an end to the problem of dog bites.

### Defining the problem

When Australians are asked what characteristics they want in a companion dog, nearly all say that they want a dog that is safe with children, sociable, healthy, non-aggressive and easy to manage (King, Marston & Bennett, 2009). Why then, do we have dogs in our community that are none of these things? Is it simply because not all dog owners agree with this general objective? It is because some people do not know how to socialise and train their dog appropriately? Is it that some dogs are inherently less well equipped to cope with our modern environment than others? Or is it, like most complex issues, a combination of various factors?

Socialisation, training and management are clearly important determinants of canine behaviour (Scott & Fuller, 1965), but current strategies to control dangerous dogs at the level of individual owners have not been successful in reducing dog-bite injuries. This partially reflects the low incidence of serious dog bites in the community but, in addition, available research suggests that many canine behavioural

characteristics are at least partially inherited (Haupt, 2007). While the primary response to this scientific fact has been breed-specific legislation, variability within a dog breed means that it may be preferable to target specific genes, or specific genetic combinations, rather than specific breeds. Although these genes have yet to be identified at the molecular level in domestic dogs, careful breeding practices which target the behaviours indicative of their presence could potentially eliminate the 'dangerous dog' problem in all dog breeds. For this reason, it is relevant to consider current breeding practices and the objectives of modern dog breeders.

### Current dog breeding practices

Until relatively recently, dogs were selected for breeding based on their capacity to perform a certain function, whether this be hunting, guarding, herding or providing companionship (Serpell, 1995). In developed countries like the USA, UK and Australia, pet dogs were rarely desexed, relatively inexpensive (often free) and readily available. Good dogs found homes, bad dogs disappeared and their genes were effectively removed from the gene pool (Grier, 2006).

With the widespread acceptance in Australia of desexing and confinement, dog breeding is now conducted by three main sectors of the population, Australian National Kennel Club registered breeders, commercial breeders and private (backyard) breeders. The goals of each group vary, but one can reasonably ask whether any is sufficiently focused on producing dogs that fulfil the requirements of the average companion dog owner. Registered breeders have been criticised in recent times for focusing too much on how their dogs present in the show ring and too little on the health and temperament of the dogs (Asher, Diesel, Summers, McGreevy, & Collins, 2009; Rooney & Sargan, 2010; Summers, Diesel, Asher, McGreevy, & Collins, 2010). Commercial breeders, meanwhile, are driven primarily by profit. One could argue that cute puppies sell well, regardless of the behavioural potentiality carried in their genes.

Private breeders presumably respond to a variety of idiosyncratic factors, which may or may not be relevant to the issue at hand.

One can also ask whether breeders are sufficiently accountable for the dogs they produce. Is it fair to blame breeders rather than owners when things go horribly wrong? More importantly, what strategies are available to help motivate breeders to produce dogs that do fit comfortably within contemporary societies? At present, the main strategy employed to control commercial breeders, at least in some Australian states, is legislation, supported by a code of ethics? This specifies welfare and housing concerns but says little about the behavioural characteristics of dogs chosen for breeding. Similarly, while ANKC breeders are required to comply with a code of ethics and to work towards elimination of various genetic diseases, there is little requirement for them to breed only from dogs of good temperament; at least as defined by companion dog owners. Private dog breeding, meanwhile, is increasingly subject to legislation intended to encourage or mandate desexing of almost all companion dogs. Whether this is likely to lead to a 'better' gene pool, or have the unintended effect of eliminating good genes from our canine population while retaining those possessed by dogs belonging to less responsible owners who choose not to conform to local requirements, remains unknown.

One finding from our research is that social normative (peer-group) pressure is effective in promoting a range of responsible ownership practices (Rohlf, Bennett, Toukhsati, & Coleman, 2010). Could such pressure be similarly applied to dog breeders and, if so, what effect might this produce in the next decade?

## Conclusion

Modern communities cannot be expected to tolerate dangerous dogs. Current strategies to control such dogs, including better management of identified animals and breed-specific legislation, have not produced a measurable effect. Nor are they likely to do so, given the large number of dogs in the community and the low number of serious bites that currently occur. New strategies are required, beginning at the level of egg and sperm. Dog breeding in most areas of Australia is almost entirely controlled by humans. Hence, dangerous dogs do not just happen but are a likely consequence of poor or outdated breeding practices. Whether these practices can be significantly improved is unknown, but strategies designed to further this aim should be developed as a matter of priority by key stakeholders.

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Pauleen is director of the Anthrozoology Research Group, a group of researchers who specialise in understanding and improving human-companion animal relationships. She has been instrumental in initiating many research projects in the area which have direct application to the field of animal management and has recently taken up a new position in the School of Psychological Science at La Trobe University, based at the lovely rural campus in Bendigo.

