Notes

How Do We Know They're Telling The Truth? A Critique Review

Mr Peter Thompson, Public Health Advisor, South Australian Dog & Cat Managment Board

Introduction

To be able to make useful, rational decisions to advance the cause of Urban Animal Management or any subject for that matter it is necessary to consult, investigate, research, read, seek out experts and so on to establish the necessary parameters to be considered. It is not acceptable to rely on personal opinions or theories that seem so logical especially if they suit our own personal agendas. Unfortunately this is sometimes the only rationale that decision making is driven by and contrary information is either overlooked or deliberately ignored.

There are sound sources of information to make decisions in the field of Urban Animal Management. The more important of these include creditable experts, thorough research with associated published papers and rigorously documented actual working experiences. It is from the meticulous gathering of data from such sources as these and their authors that conferences, seminars, groups and individuals can draw information leading to a fuller understanding of the situation being considered.

Unfortunately even then such sources of data are not always creditable. This paper provides some guidelines to assist in choosing the useful from the not so useful.

Creditable experts

Experts are not necessarily experts at everything. Local government animal management officers understand local government issues, but may not appreciate the point of view that a public health practitioner has of the same subject. Similarly veterinary surgeons tend to see some issues via their clinic and not in the broader context that a professional researcher would.

Consult the relevant expert for their specific field. A public health practitioner in urban animal management is primarily concerned with the effects of animals on human well being whilst a veterinary surgeon is more concerned with the well being of animals. Clearly there is overlap, but their interpretations by training and experience are different.

Consult all experts for a balanced analysis of the subject under scrutiny. It is vitally important to acknowledge that a single expert input only may result in a biased opinion

Credibility of experts is established by their qualifications and experience, but mostly by their achievements and in the public arena usually by papers and documents describing those outcomes.

Papers and documents

The most creditable information comes from (in reducing order of credibility):

1. Internationally published peer reviewed journals and publications such as The Lancet, The New England Journal of Medicine and the Medical Journal of Australia. Papers submitted to journals such as these are subjected to multiple reviews by established experts in the same field. Their acceptance in the publication assures readers that the findings and recommendations in the paper are entirely creditable.
2. Nationally published peer reviewed journals and publications. Most of these are peer reviewed and their information can also be considered to be creditable. A further examination of the publication should also be made to establish just how creditable they are. See how to examine below.
3. Conference and seminar papers often have not been through a recognised peer review process. If not they will need a careful examination to establish their credibility as described below. If they have been peer reviewed they will appear as papers from categories 1and 2 and must have their publication references included. Some of the articles referred to in these papers may have been peer reviewed and some may not. The influence of these must also be taken into consideration
4. Books, news letters, brochures and pamphlets are in the same category as 3 above. However just because information such as this has not been peer reviewed does not mean it is not valuable, but it will need to be examined to determine its value.
5. The media. Usually only good for gaining publicity to assist prioritising a particular program or attracting assistance and funding. Good for tipping the scales in your balance when politicians are involved.
6. The internet. Remember anyone can publish on the internet, however some information can be useful, but it must be subjected to the type of criteria described below.

Credibility criteria (a guide)

- **Beware of the sample of one.** Far too much influence is wielded by the expert who once had a good experience and now believes it is logical to infer his discovery to every circumstance. When next an expert tells you that they once owned a particular designated dangerous breed of dog which was just a big cuddly teddy bear it does not follow that all of the same breed are the same. This is known as anecdotal evidence and is usually valueless. Beware it is common and can appear to be very persuasive.
- **There is no substitute for sample size.** In 1997 I published a paper in the Medical Journal of Australia, one of the findings was that 51.9% of the community feared being attacked by dogs. This information was derived in 1992 from 3093 separate interviews, therefore the readers could be confident of the result. Such results in peer reviewed papers always have statistical tests. Routinely look for them and if you do not understand them find someone that does and determine if there is reason to be confident or not.
- **Has the study, research, observations, etc. been replicated?** The most powerful evidence of all is when someone else, independently examining the same issue gets the same or similar result. This is in effect the same as a bigger sample, but one that has been collected and analysed externally. Another form of replication is when an analysis is repeated by the same researcher using completely new data from a different source or time frame and getting the same result again. Creditable papers should always include references to other supporting studies if there are any.
- **Is the conclusion being promoted logical?** Some hypotheses defy logic and science and yet because they are espoused by an expert or have been written into a

paper they must be so. I frequently hear the assertion that all dogs are created equal and it is just the outer shape of the skin that is different. Extensive research over many years and many thousands of interviews and event reconstructions has shown that just a handful of dog breeds cause more than one half of the public health dog attack problem in Australia. Further more the same data show that over all breeds male dogs are 6.2 times more likely to cause injury than a female dog. This is creditable information that cannot be denied.

- **Beware of bias.** There are many examples. As a public health practitioner I have a role to protect the public from unnecessary pain and suffering. This "high moral ground" may subconsciously tempt me to adjust the data to a better outcome. Thus I need to be scrupulously careful to avoid such a bias. There are many potential bias that will cause problems with credibility. The opinion of a person who dislikes dogs for example will clearly differ from a dog lover. The bias usually manifests itself in the way that the expert uses or chooses not to use arguments that support or do not support their argument. The academic imperative is always to consider and discuss creditable information that does not agree with your hypothesis and establish good reasons if possible for by-passing it, not simply to ignore it because it does not suit your required outcome.
- **Beware of hidden agendas.** These can come in many and often rather subtle forms. If a study, research, or position paper is prepared by an organisation whose members derive profit from a particular result or the cost of the work is subsidised by a commercial company who will benefit from preferred conclusion or a group of enthusiasts who already have an outcome in mind thus their contribution is already potentially flawed. It may in fact be very useful, but it will need to be examined carefully.
- **Assertions must always be supported with evidence.** Many of the papers I have read on the topic of dog management contain significant statements that have no science, data or logic to support them. If no substantial information is provided to support such an assertion then reject it and the paper as well. There are several of these presently circulating. One of the most popular attributes the dog attack problem to a minority of irresponsible owners. This has the bias of shifting the responsibility away from all dog owners and instead onto just a few wrongdoers. Nothing could be further from the truth. I have examined in detail thousands of attacks for more than a decade. Only a very small proportion could be described as truly problem owners. The responsibility therefore still remains with all dog owners and not a small, villainous band of phantoms.
- **Watch out for "smoke and mirrors".** Be cautious of papers that are lengthy, with multiple objectives, data, charts, diagrams, tables, conclusions and pages of references. It may be that it is all designed to impress and at the same time camouflage a lack of evidence. The best reports are short with a clear hypothesis, understandable method, clearly displayed results and an unambiguous outcome. Most top rate scientific papers are around 2,000 words. With a long, complex paper try to determine what the premise is, what method is being used, are the results relevant, do they support the conclusion and are the references appropriate?

Summary

These are only some of the criteria that need to be considered when examining evidence for credibility, but they are the more common and the more important. All expert opinion whether it is spoken or written is valuable, but its credibility varies. Just because it is written on paper or published in a book does not mean it is "gospel". Similarly spoken words from an established expert may not always be relevant. All of these need to be considered in context and totality for their value.

The above guidelines will help the reader and listener to be better able to recognise creditable from non-creditable information and assist those who are uncertain to at least seek another opinion.

Peter Thompson

Peter is an Injury Epidemiologist and holds the qualification of Degree of Master of Public Health. For 20 years he has specialized in the prevention of injury in the community. Peter has researched and published widely on many hazards including the public health impact of dog attacks. In particular his work focuses on solutions as well as causes. In 2001 Peter was presented with the Child Accident Prevention Award of Australia by the Governor General for his work in the prevention of injury to children. In the same year, he was awarded the Public Health Practitioner of the year by the Public Health Association of South Australia. Peter is the public health advisor on the S.A. Dog and Cat Management Board.