Communicating the Culture of Care – how to win friends and influence people

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Summary

Plenty of information is available on potential refinements to procedures, housing, husbandry and care but achieving buy-in from colleagues and implementation in practice is not always straightforward. This paper discusses how animal technologists and named persons can communicate effectively about refinement which will contribute towards a positive local Culture of Care and sets out some action points to help with the development of communication skills.

Introduction

This paper was prompted by a presentation given by Tania Boden at a meeting on reducing and avoiding severe suffering which was convened by the RSPCA and held in Brussels in June 2016. The talk described a process of refining rheumatoid arthritis research using mice and rats and how this was fed into an expert working group report but it also included some extremely useful guidance on how to communicate effectively and positively about refinement so that you can make a significant difference for the animals.[1]

The expert working group on refining rheumatoid arthritis was also convened by the RSPCA and involved people from different disciplines with different expertise, who shared a common goal of improving welfare in rheumatoid arthritis models. This included scientists and animal technologists from industry and academia, a laboratory animal veterinarian, a Home Office Inspector and representatives from scientific welfare organisations, thus providing a valuable opportunity for everyone to interact and draw up practical, feasible recommendations that would reduce severity without compromising the science. The basis for these was that a significant reduction in suffering could be achieved by introducing a number of refinements such as appropriate environmental enrichment tailored to rheumatoid arthritis studies, the potential to use analgesia, refining handling methods, refining welfare assessments and humane endpoints. These were based on the literature and good practice among the authors, published in an open access journal and shared widely.[1]

From publication to practice – good communication is key

So far, so good but how can animal technologists present project and personal licence holders with refinements like these and suggest that they apply them to their established animal models? Although some researchers are keen to trial refinements, you may encounter one or more of these common reactions:

- no
- why?
- what's the benefit?
- 'task to value' ratio (i.e. if they completed the 'task', how much value would it add to the experiment)?
- how much time will it take?
- how much more will it cost?
- will this affect variability or reproducibility?
- will I have to change the licence?
- if I have to ...

Some of these responses will be down to human nature, as people are generally reluctant to change their behaviour or try new things.[2] In the case of scientists, they are also working in a highly pressured and very competitive environment which is a disincentive to change established practices if these are believed to work well enough.[3] However, if you are well-prepared and working in a facility with a good culture of care, it should be possible to effectively tackle these obstacles through positive discussions and good communication skills.

Animal technologists are actually in a strong position when it comes to influencing practice and promoting refinement, for two reasons. First, always remember that the 3Rs (Replacement, Reduction and Refinement) are embedded into the Animals (Scientific Procedures) Act, 1986 (ASPA) and the Home Office expects all establishments to create and maintain a good local Culture of Care.[4,5] This should include striving to

achieve good practice with respect to all aspects of every animal's lifetime, through discussion and agreement with all stakeholders. There should be an ongoing dialogue to reflect new knowledge about animal welfare, refinement and the 3Rs, which can only be successful if everybody works towards a common goal. Everyone should feel free to initiate discussions without having to ask permission which creates a better Culture of Care for people and animals alike.

Secondly, animal technologists often have a sound basis for promoting refinement because they frequently access information on 3Rs initiatives such as websites, meetings and presentations, in addition to their training which includes animal welfare, 3Rs and ethics components.[6] The technologist's role within an organisation often includes working with and caring for a wide range of animals, at different ages, different sexes and of different strains, used in different procedures. Animal technologists therefore gain knowledge based on a wide variety of observations and interactions, along with a sound theoretical background of animal biology and welfare.[7]

A ten point plan

Despite the above, it is sometimes difficult to persuade researchers to change their protocols and apply refinements (especially with established animal 'models') as they fear this will affect their results. However, constructive discussion can help to identify whether objections are perceived or real and how to move forward. Good preparation will help you to make your case. Here is a ten point plan for successful persuasion:

1. **Do some background reading,** so that you know some more about the science. This helps to promote mutual respect of one another's work between scientists and animal technologists. For example, you could review project licences and see whether there are any areas that you could discuss and suggest improvements. Check scientific papers and welfare websites for ideas and initiatives or note down your own ideas. Your Named Information Officer should be able to help you with this.
2. **Start a conversation**, rather than confronting. This does not have to be a formal conversation; it could be within the laboratory, animal rooms, canteen or the car park! Do not confront people with the latest welfare journal papers and demand to know why they haven't instigated the newest practices; the idea is to create a culture in which chatting about welfare is normal and everybody feels comfortable doing so. Show your interest; chat to the researcher and ask them to explain their project and its objectives – you might be surprised how keen they are to discuss their experiments and the science behind them. Then you can discuss refinements ...
3. **Think about the questions you may be asked.** All scientists will have questions or concerns about the effects of refinements on their experiments; some examples are in the list of common reactions above. Considering in advance how you might respond to these will help you to keep the conversation flowing and sell the idea of implementing refinement. Remember the legal and ethical imperative to implement refinement too; adequate resource should be made available by the establishment or funding body.
4. **Be enthusiastic** about the refinements you are suggesting – this is often catching! If you are excited about what you might achieve together, you are more likely to have an upbeat conversation which will end with a positive result.
5. **Reiterate the positives.** It is widely accepted that better welfare means better science and implementing Refinement (and the other 3Rs) also often leads to financial savings or more effective use of resources. Talk about all the benefits associated with the 3Rs and point out that small changes can make big differences.
6. **Offer to work together.** Volunteer your assistance to implement any changes, keep logs of animal behaviour as a way of evaluating refinements or liaise with named persons regarding any changes.
7. **End with an agreement.** Even if you only agree to discuss things further, you have achieved a tacit acknowledgement that there may be room for improvement. Do not give up!
8. **Review any changes.** Always explore what worked, what did not and what might work if some changes are made. This should be an ongoing process and it maps on to Animal Welfare and Ethical Review Body (AWERB) tasks such as following the development and outcome of projects.[4,5]

Use your AWERB

There are several AWERB tasks that should help you promote the Culture of Care and communicate about refinement. For example, AWERBs should:

- support named persons and other staff dealing with animals, on animal welfare, ethical issues and provision of appropriate training;
- help to promote a Culture of Care;
- promote awareness of animal welfare and the Three Rs and
- provide a forum for discussion and development of ethical advise to the establishment licence holder on all matters related to animal welfare, care and use.

If you are an active member of your AWERB, you can also help it to advise staff on animal welfare and the application of the Three Rs; follow the development and outcome of projects (including implementation of refinement) and review processes for monitoring welfare.[4,5,8]

9. **Feedback** to colleagues who have had an input, as well as to a wider audience.
10. **Suggest that your establishment offers incentives to implement the 3Rs.** The AWERB could be a good forum to put this forward (see box). Incentives could include funding attendance at a relevant conference, peer recognition or a cash prize. Different people are motivated by different rewards; scientists may be more motivated by the opportunity to produce a poster or publish a paper on their initiative. Producing papers or posters is also a good idea to promote mutual respect and sharing of ideas, as everyone can collaborate on these.

The overarching concepts are that it is highly beneficial for animal technologists to positively engage scientists in the 3Rs and your interactions with scientists should not be seen as something negative or that happens only when there is a problem. For example, when there are new starters, make sure you can take some time to show them around the facility and let them know that the animal care team is available to help and advise them. It is also important to communicate with animal care staff and explain to them the reasons for refinements to non-regulated activities such as cage cleaning or animal handling. People are often asked to use techniques and equipment without any background explanation, so they proceed without thinking about why they are doing things that way or whether further refinements might be possible.

Whoever you are speaking with, beginning with a positive interaction, e.g. by praising people for good practice, can then make it easier to persuade them to try further refinements. For example, you could start a conversation on a topic such as the length of time animals are in warming cabinets or why a particular needle size is being used, explaining the impact on the animals and saying how positive it is to see good practice. You could discuss alternative approaches, or just tell them about new initiatives you have seen on websites or at meetings. If this is done often enough, it becomes normal to discuss the 3Rs and animal welfare; this can be achieved at all levels and with all job roles. A further benefit of making such discussions normal working practice is that any concerns are likely to arise in discussions between colleagues, making it more likely that any issues will be dealt with before they escalate.

Beyond conversations

Another way of communicating positively is to create a newsletter that goes out regularly to all licence holders and unit staff, with updates on available training, new equipment, new members of staff and any particular expertise they have, meetings such as the AWERB and external meetings. The newsletter can also include links to internal and external resources and initiatives relating to animal welfare and the3Rs, with relevant contact details.

Creating posters is another option for communication, for example setting out information about the species housed in each room with good practice for diet, light cycles, enrichment, social housing and temperature etc. (Figure 1),* or reminding people to check their project licences and local good practice for dosing and blood sampling.

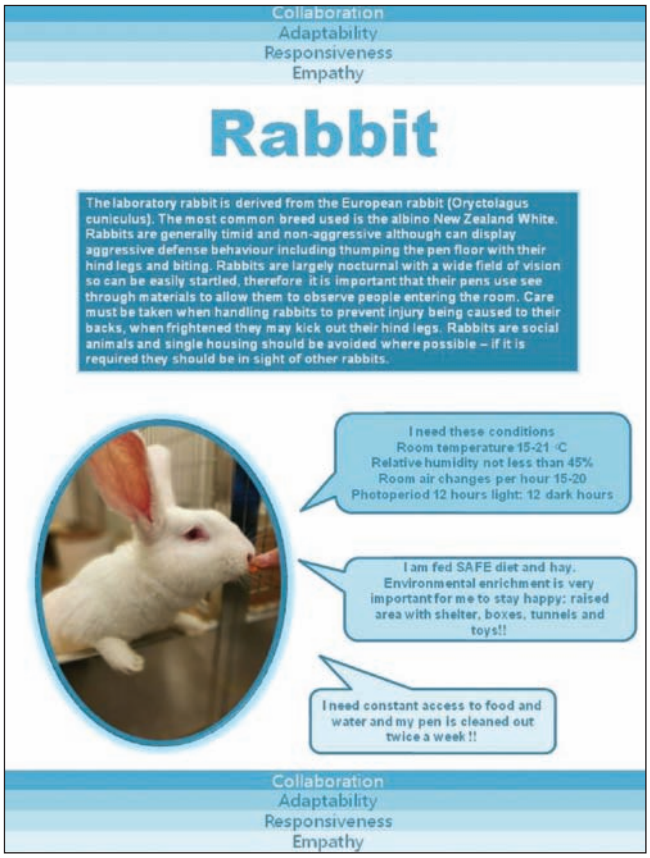

Figure 1. Poster showing a healthy rabbit.
Legend: Poster by Mark Hasler, UCB

You could also produce posters depicting healthy animals, stating 'I am healthy' with some positive images. These can also be used to check and assess the welfare of experimental animals, as sometimes scientists forget what a healthy animal looks like because they are used to dealing with sick animals! Changing the posters regularly will help to keep people interested.

A practical example

Table 1 sets out how good communications and team work enabled significant progress with both developing an establishment's Culture of Care and refining the collagen-induced arthritis (CIA) and collagen antibody-induced (CAIA) mouse model of rheumatoid arthritis.

* This information is also useful with respect to reporting experimental results according to the ARRIVE guidelines; **nc3rs.org.uk/ARRIVE**

Refinement	Outcome of review
DBA/1 male mice were used for the CIA protocol which is quite an aggressive strain. We found that keeping the mice in the facility one month before the start of the experiment increased the incidence of rheumatoid arthritis (which was probably an immunological effect) but also increased fighting. The increased aggression was a concern and could have had the opposite effect on disease uptake due to stress. After discussion with the scientist, we tried different approaches to reduce fighting. Working together, and communicating regularly, we introduced: – The number of animals per cage was reduced to 5, after ensuring that this was appropriate for experimental group sizes. The animals were less likely to form separate groups and fight for dominance. We also put two houses in the cage, so in the case of any aggression they would have separate areas within the cage or would not guard the house. – We also put wheels within the cage, finding that the animals would expend energy on wheel running rather than each other! – A study to see whether we could use females. This would reduce the problems with aggression but all historic data and other labs use males. We aimed to evaluate responses in males and females, in the hope that there were no significant differences so we could use females in the future.	When the numbers per cage were reduced and wheels were added, disease uptake was slightly improved, fighting was reduced, fewer animals had to be separated and experimental groups remained constant, leading to less variability. This did not take any more time, and the only financial outlay was the wheels and houses which are re-used. Both the scientist and the NACWO were content with the situation. The outcome of the 'males vs. females' study was inconclusive and more work is needed on this.
The injection site at the base of the tail became a concern, as the adjuvant often caused ulceration or sores on this very thin piece of skin. Discussion with the scientist about moving injection sites revealed concerns about moving away from sites near the draining lymph nodes, in case this resulted in less disease. So, in each further study, the injection sites were moved slightly further away from the base of the tail towards the flanks while monitoring the disease incidence.	The scientist and NACWO were happy with the injection sites. Using the new sites took no more time, the disease incidence stayed the same, complications at injection sites were reduced and we have only needed to humanely kill very few animals due to ulceration.
Next, we found that animal models which relied on an observational scoring system, such as CIA, could be liable to bias if the experiment was scored by a person who had an interest in the outcome. As a result we decided to use animal technologists to score the animals daily, or to check the scientists' scores twice a week. The techs worked closely with the scientists for a few weeks until everybody was satisfied that they were scoring the animals in the same way. The animal technologists then took over scoring and passed the results to the scientists.	Everybody was content with this approach, which gave more involvement to animal technologists, freed up the scientists' time and hopefully reduced any bias.
It was then noticed that some animals were scratching around their injection sites and causing ulceration. We consulted with the scientist and the NVS, who recommended the use of EMLA local anaesthetic cream to relieve the symptoms. The scratching stopped!	Fewer animals developed ulceration and had to be euthanased, therefore overall experimental numbers were reduced.
Animals developing rheumatoid arthritis were still eating less food and losing weight. We therefore started to supplement their food with more palatable or favourable treats before estimated disease onset. This was discussed with the scientist and agreement was reached on what we both would be happy with. We put more palatable food (Nutella® and wet mash), sunflower seeds, and orange segments on the cage floor, with longer nozzles on the water bottles so the animals did not have to reach up so much.	There was no impact on the disease process, no animals were euthanased for weight loss and we were able to reduce endpoints from 20% to 15% (although we rarely see weight loss of more than 5%).
In the light of the above improvements, we could then review the welfare scoring sheet and reduce humane endpoints, include the Mouse Grimace Scale (MGS) and score cumulative suffering. The score sheets for CIA and CAIA were differentiated, as we found the disease symptoms were different and this needed to be captured, and new endpoints added, for CAIA.	Refining the scoring sheets reduced endpoints and enabled the introduction of new scoring parameters e.g. the MGS.
Next, a literature review suggested that the antibody cocktail amounts for the induction of CAIA produced a disease profile that was more severe than was actually needed to study drug efficacy. The project and personal licence holders worked together to titrate the antibody to a level that gave a less severe outcome for the animals.	Refining the protocol enabled an efficacious animal model, where very few animals reached the endpoints which meant reductions in both animal numbers and suffering.
Immediately after the CAIA challenge with lipopolysaccharide (LPS), difficulties were encountered with blood sampling due to transient effects of LPS. This was noted by the NACWO, who asked whether the blood volumes for PK profiling could be reduced. The licence holder investigated this with other departments and it was agreed to reduce the volumes.	The impact on the animals was reduced and the procedure became easier for the personal licence holder.
We discussed and trialled different analgesics, with an on-going process to try and quantify or measure success.	We have successfully used analgesics in drinking water in some studies,[1] which has enabled us to alleviate pain without handling the animals (and has not compromised the science). Work to evaluate the effectiveness of different analgesics, using a battery of different techniques including the MGS, is ongoing.
The most recent refinement is the introduction of Vetbed® to restrain animals with swollen paws.	It is much easier to handle animals, presumably because it is less painful for them. We now use Vetbed® when training staff to handle animals.

Table 1. Step by step refinement of rheumatoid arthritis studies.

This was a well-established model that had been running for a number of years and there was resistance to change any part of the protocol, or how the animals were cared for, in case this changed the disease process. So, we suggested implementing refinements in steps and reviewing each change. Introducing small changes in this way has had a big impact on the procedures themselves, reducing numbers and severity and improving the science.[9] The process of researching, considering and implementing refinements has evolved so that it now includes all parties; the Named Animal Care and Welfare Officer (NACWO), Named Veterinary Surgeon (NVS), project and personal licence holders, animal technologists and care staff. As the researchers could see the benefits to their science over time, they began to suggest further improvements and refinements, especially when it became clear that most of the refinements had no cost or time implications and actually made the experiments easier.

It became a normal process to discuss and follow the refinements on a daily basis until everybody was happy with the refined protocols. Along with the positive outcome for the animals, in terms of reduced severity, the process has had a positive effect on everybody that has been involved. Some positive outcomes are:

1. Two internal 3Rs prizes have been won.
2. A poster was presented at the Laboratory Animal Science Association annual congress.
3. A scientist and the Facility Manager/NACWO/Named Training and Competency Officer (NTCO) jointly presented a talk at the RSPCA/Universities Federation for Animal Welfare (UFAW) Rodent Welfare Meeting.[10]
4. Participation in an Expert Working Group on refining rheumatoid arthritis research,[1] which also led to collaboration between academic and industry scientists with respect to refinement.
5. A talk was presented at the international meeting on reducing severe suffering convened by the RSPCA in 2016.

All of the above have assisted in career development and these examples can be used as a 'carrot' when discussing other models with other scientists.

Conclusions and action points

So-called 'soft skills', such as communication skills, assertiveness and the ability to build relationships, are essential for animal technologists who want to help build their establishment's Culture of Care and promote the 3Rs, including Refinement. However, little if any training in these skills is routinely provided for animal technologists or other people who are critical to the Culture of Care such as AWERB members.[11] We hope this paper provides some encouragement and useful tips for those who want to have more of an influence at their establishment and elsewhere and suggest the actions below as a starting point.

- be confident in your knowledge base, connections and training
- … or if you are not, talk to a sympathetic senior colleague (such as a NACWO) about how you could work on these
- set yourself a goal of getting to know more of the researchers at your facility and more about what they do
- try out the ten point plan next time you want to promote refinement (or the other two of the 3Rs)
- use the AWERB to support you and consider becoming more involved – see reference 8
- think about other ways of communicating and creating a positive atmosphere, such as posters and newsletters
- tell us what kind of training you would find helpful, with respect to the 'soft skills' listed above – you can email **research.animals@rspca.org.uk** – and raise this at your establishment also, for example via the AWERB or the NTCO.

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