

Dispelling Some Fishkeeper Delusions

Our commonly accepted ideas may turn out to be untrue.

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We often hear that “fish feel no pain” and that “fish have no memory.” Many people, including aquarists, have commonly held these beliefs for quite some time, and both have nearly achieved the status of proverbial sayings.

These ideas are used to justify all kinds of cruelties toward fishes and other aquatic animals. You wouldn't ever crush a rat to euthanize it, would you? Would you flush a live canary down your toilet? Would you whack your dog with a club if you grew tired of cleaning up after it? Unfortunately, these kinds of behaviors have been advocated throughout the history of the hobby as acceptable means of disposing of unwanted fishes and invertebrates.

The Reasons Behind Our Actions

Thankfully, these practices have been recognized as undesirable and have fallen into disuse. However, the reason for this change in our behavior as fishkeepers wasn't necessarily caused by a realization that fish may feel pain or remember their experiences.

The first method mentioned, where a fish is euthanized by being struck or crushed, is still advocated by some as an acceptable means of disposing of unwanted fishes. The other case, where fishes are flushed down toilets, is often dismissed not on the grounds of its being cruel, but rather because it may potentially cause ecological damage through the introduction of unwanted biological organisms, such as diseases and parasites, into water supplies and ecosystems.

These attitudes are often justified by the idea that fishes don't feel any pain or have any memories. Why worry about what we do to fishes, the argument goes, if they don't feel pain and don't remember anything anyway?

Dubious License

Based on this argument, some might say that we have an implied license to do whatever we want with our aquatic charges. Since they can't be hurt and can't remember anything, harming fishes and other aquatic creatures is free of any moral censure under this argument.

But are the premises of this argument – that fish feel nothing and remember nothing – true? While it is difficult to examine questions about the experiences of other animals, and we can't be certain yet, many in the scientific community are slowly coming to the conclusion that both premises are indeed false.

For example, a recent study carried out by professors Bob Elwood and Mirjam Appel from the School of Biological Sciences at Queen's University Belfast, in the United Kingdom, found that crabs likely feel and remember pain.

In the study, hermit crabs were exposed to small electric shocks and their reactions were observed and measured. Those crabs exposed to electric shocks were more likely to leave their shells in search of new shells to inhabit than were crabs not exposed to the electric shocks.

Also, certain crabs were exposed to lower-level electric shocks that did not cause them to leave their shells when no other shells were available for inhabitation. Afterward, the same crabs were presented with another shell to inhabit, and those that had been shocked were more likely to change their shells, suggesting that they remembered the unpleasant shock associated with their original shells.

Similarly, researchers Sneddon, Braithwaite and Gentle from the Roslin Institute and the University of Edinburgh, in the United Kingdom, performed tests on 20 trout to determine if the trout experienced pain. Just as expected, the trout responded to what we would expect to be painful stimuli by – surprise – attempting to avoid the stimuli.

In one part of the experiment, several of the trout's lips were injected with harmful chemicals. The trout reacted by showing signs of distress. When the trout were given injections of morphine, the distressed behavior subsided. That sounds like a pain-related reaction to me.

Animal Comparisons

We have laws preventing cruelty to many animals. People are justifiably made upset when someone like Michael Vick

tortures his dogs. But the level of indignation at Vick's actions is totally unlike anything we see when aquatic pets are abused (in fact, the degree of public anger in Vick's case was much greater than we see in most cases involving murder or torture committed by humans against other humans, but that's a totally different issue). Why is there a disparity in the public's reaction?

I suggest this is part of a common human trait whereby animals that are similar to humans in appearance or are considered "cute" – that is, creatures that are easier for us to relate to, such as dogs and monkeys – are given more respect, consideration and protection. Animals that are unlike humans in form, that appear alien to us, are often treated with less regard for their well-being.

Finding Proof of Pain and Memory

Those who hold that fishes and other animals whose brains and nervous systems are not similar to ours – or are entirely absent – in turn do not feel pain generally argue that pain is a psychological experience separate from reactions to stimuli we would expect to cause injury.

Those subscribing to this reasoning hold that because these two things – reactions to stimuli and actual states of awareness – are separate, we should not say that fishes feel pain. Of course, this argument must be extrapolated out to apply to the vast bulk of all life on the planet.

Those who believe this argument are generally of the opinion that creatures lacking sufficiently complex brain and nervous system structure cannot be aware of anything at all. They merely react, per their biology, to stimuli. They do not have experiences as we understand them.

Under this argument, it is irrelevant if fishes or other animals react to stimuli we expect to cause pain and discomfort. Their reaction is not proof of an experience of pain. Their brains are biologically incapable of experiencing pain, the argument goes, so therefore they must not be able to experience pain.

Deeper Considerations

Furthermore, some who argue fishes don't feel pain state that their reactions to stimuli cannot be said to provide proof of fear because the brain states that cause fear cannot occur in fishes. How can you be sure biological brain states are causing fear or pain in any animal? Our psychological experience of fear or pain is a subjective, qualitative feeling. Conversely, the biological processes we observe in the brain are objective facts.

How can we make the leap from objective facts about biology to subjective, qualitative experience? Never mind the argument about fish pain, for a moment. How can we, as humans, say that certain brain states are solely responsible for our objective, qualitative experiences of pain? What in our brains gives rise to these subjective, qualitative experiences?

The fact is we still don't know what objective biological processes in our own brains lead to our subjective, qualitative experiences. This is the fundamental problem of consciousness. In the absence of our understanding the precise cause of our own subjective experiences, I don't think we can make any broad assumptions about the biological truth of fish brain states definitively proving that fishes don't have what we think of as awareness.

Now, as someone who believes in the methods of science, I have to admit that I cannot say, from a scientific standpoint, that fishes or any other animals unequivocally experience mental states that I associate with pain.

Ethical Considerations

However, I am also concerned with moral and ethical issues, and both are not always informed by the same reasoning we have to use as good scientists.

Consider the ethical implications of the "fish feel no pain" argument. According to "no pain" proponents, animals lacking sufficiently complex nervous systems and requisite brain complexity can't feel pain, and therefore we should not talk about their behavior as exhibiting evidence of pain or awareness. According to these people, fishes are nothing more than biological machines, no different in terms of awareness than cars or flashlights. If we accept this line of reasoning, we should not treat certain undefined non-human animals as experiencing pain.

I have many questions for those holding the argument that fishes don't feel pain. First, where is the cut-off point between animals that have awareness and those that don't? Can we definitively state where in biology pain and awareness begin? How are we required, from an ethical standpoint, to treat animals we assume have no awareness compared to animals we assume have awareness?

What are the moral and ethical ramifications of this argument? If we can't be sure other animals are aware at all, who is to say we should treat them differently than we treat other unaware matter?

I put it to those holding this belief about certain animals lacking awareness: Based on your arguments, can we ethically treat animals as we treat other unaware matter? Can I morally bash a fish's head in like I would crush a rock without feeling anything about it at all?

What if I did the same thing to a dog? Is my behavior ethically different in this case? If I kept on going down the evolutionary ladder, animal by animal, where would I finally be able to say that I hadn't committed an ethical infraction?

I'm not trying to argue that anyone who holds the belief that fishes don't feel pain would advocate harming fishes or any other animals. Quite the contrary: I believe such people would be quite upset by such instances of animal cruelty. I'm trying to point out that, to be consistent, those making the case that fishes feel no pain would have to be oblivious to certain cases of animal cruelty if they really believed what they claim to believe. I argue that the very term "animal cruelty" is largely an oxymoron for these people.

If you hold the belief that fishes feel no pain, how would you feel if I did something like what is described above in front of you? If you felt that I had done something wrong, would you be justified in your belief? Can we disregard all ethical considerations we would normally apply to aware agents when it comes to animal life about whose awareness we are unsure?

I state that in the absence of direct knowledge of other animals' experiences, we have to side with the cautious assumption that it is possible other animals, including fishes and other lower organisms, do indeed feel pain. At the very least, we should consider they feel something like a precursor to pain that we cannot adequately interpret from an ethical standpoint using the scientific method alone.

How Should Non-Scientists Act?

Can we prove definitively that any given animal has the capacity to feel pain? No, or at least, not yet. But we have to use common sense. We generally believe that dogs can feel pain, but we have no better information suggesting this is true than we have for fishes, other than the fact that a dog's brain is far more complex than a fish's brain.

Following the logic of those who claim animals lacking sufficiently complex brain and nervous system structure in turn lack awareness, if we go down the evolutionary scale far enough, we'll find a creature whose ability to be aware is uncertain, based on their argument. How are we ethically required to treat that animal?

Consider your own experiences with your fishes. Do your fishes behave as if they don't feel pain? When my fishes encounter something I would expect them to find unpleasant or painful, they definitely do behave as though they are experiencing something painful.

This line of reasoning goes for fish memories, too. Any aquarist knows that fishes can be conditioned to perform certain tasks. Just think of your fishes' eager behavior when you come to the tank for their morning feeding. Fishes can even be taught to run an aquatic maze for a reward. Goldfish used in experiments can remember to run a specific course within a maze for several days.

Also, some wild fishes, such as steelhead trout, seem to "remember" the location of their birth when they return to the same location to reproduce. Various fishes will also hold specific territories, and some species can potentially identify relatives. Some fish species even seem to remember their predators, exemplified in certain species' hiding and avoidance behaviors.

A Call to Educate Others

Some might accuse me of being a softie. Maybe I'm just too sensitive to the potential feelings of our helpless aquatic pets. I'm not saying that we can't eat seafood, or that we have to refrain from fishing. In these cases, I argue that our need for sustenance outweighs a fish's possible experiences of pain.

I'm mostly concerned about how we treat our aquatic pets. We have to be aware that our actions have consequences, and that we have to give some respect to all creatures, not just those we find cuddly or that we assume have the capacity for awareness.

These myths have persisted for too long. The preponderance of evidence suggests that fishes and other aquatic animals do feel pain and retain memories of pain. Let's stop acting like we don't know this already, and make sure that those in the

hobby who don't know it are made aware so that any unneeded suffering aquatic pets may experience is put to an end.

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