

## **“Pay That Bird!” – The Use (and Abuse) of Analogies in Training**

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### **Abstract**

“Treat”. “Reward”. “Reinforcer”. “Pay”. “Tidbit”. Familiar to some, foreign to others, and frequently holding different meanings for different people. These labels (sometimes colloquialisms, sometimes scientific definitions) for the intended positive consequence that we hope will result in an animal maintaining or increasing a specific behavior, are many and varied. At best, their proper use is something for colleagues to argue about over a beer (or three) at training conferences. At worst, they’re a confusing tangle of constructs that are intimidating to the novice and a point of contention to more experienced trainers. But is formal scientific accuracy always best, regardless of the situation? Can the use of analogies during day-to-day training dialogue actually increase conceptual comprehension and skill in the trainer? Exploring the use (and abuse) of training metaphors may assist trainers of all experience levels in their quest to increase their levels of skill, empathy, and flexibility during training sessions with their animals.

### **The Language of Training**

As with most professional fields, the science of behavior change has its own language. That language is made up of the specific terminology used by its practitioners, and it is not an easy one for new initiates to become fluent in. In some cases, even current professionals may find it a challenge to maintain their fluency as terminology develops and changes over time. Not only is the vocabulary itself consistently misused in popular culture outside of the field (most laymen have heard the term ‘negative reinforcement’ but are unlikely to be able to explain it accurately) but exact technical definitions are frequently debated within the field itself. The different—and sometimes inconsistent—meanings attached to key terms are further complicated by the existence of different schools of opinion and methodologies. While all of this confusion may be a sign of scientific progress self-correcting (as it should!), the ultimate result is that a new trainer entering the field for the first time may find themselves awash in an ocean of contradicting information and conflicting vocabulary ‘dos and don’ts’. Meanwhile, current professionals are at the proverbial bar arguing semantics until either a consensus is reached or everyone gets tired and goes to bed.

The animal training field is currently unregulated and often fragmented by species or taxon. Primates, pinnipeds, large carnivores, cetaceans, parrots, raptors, dogs, horses, and other groupings all have their own styles, preferences, terms, and practices. Each, too, has a common higher language that (at least in theory) allows cross-communication with other groups. For newcomers to the field as a whole, an ‘expert’ may be identified as the person who types the most, speaks the loudest, or has the most easily accessed information. While there are many

talented and passionate trainers producing groundbreaking and well-written papers, the onus still lies on the newcomer to sift the suspect information out from the good, figure out who to listen to, and determine how to grow their skills and use ‘proper’ terminology in their own day-to-day training dialogue. The debates and opinion pieces a new trainer must sort through are almost endless:

*“Don’t say ‘treat’, say ‘reinforce’!”*

*“That’s not what a ‘time out’ means!”*

*“Don’t use human emotions to describe animal behavior!”*

The newcomer is at a marked disadvantage here, and current trainers may also find themselves distracted or confused by shifts in terminology—or how that terminology is applied—to the point at which it causes them uncertainty in training. It is beyond the scope of this paper to make any meaningful sense of the existing tangle. However, acknowledging up front that language is mutable and transitory in nature allows us to nod, move on, and collectively agree to focus on overall comprehension of concepts rather than specific and fiddly details. Technical accuracy with specific scientific terminology is useful and meaningful, but it is not as important in day-to-day interactions with animals as is an intuitive grasp of how to apply theory to practice.

In both practice and theory, communication between individuals of any species who do not share a written or verbal language is a struggle that requires ingenuity, dedication, and flexibility in order to overcome, and it is perhaps our most fundamental challenge as animal trainers. It benefits us and our animals to have as many tools in our metaphorical toolbox as possible, in order to ensure our communication is efficient and clear. It is hard enough to communicate effectively with members of our *own* species, after all, so we might as well arm ourselves as best we can.

Where do we acquire those tools? How do we use them? As mentioned above, some trainers do it through dedicated acquisition of technical knowledge—by devouring textbooks and listening to podcasts and presentations delivered by the best training minds of our generation. Some trainers do it through dedicated practice—by spending as much time as possible working with their animals and intuitively adapting their strategy based on the feedback they receive from training sessions. Most will find a middle ground between the two extremes. All three of these groups—especially when they come together to discuss the art and science of animal training—may find themselves struggling to communicate their experiences effectively to their compatriots. Technical practitioners may lose their more intuitive or newer peers by using overly specific and intimidating jargon, while those peers struggle to label an intuitive leap with scientific language that their companions can properly quantify. Mutual understanding, at times, seems unobtainable.

## **The Road to Mutual Understanding**

While most new trainers make an effort to increase their scientific knowledge, is excessive technicality ever detrimental to training dialogue? In my mind it can be, especially when used by an experienced trainer as a weapon on newcomers who are grappling to master concepts in their

own time. Many of the ‘rules’ the newcomer hears repeated as best practices can be misinterpreted or misapplied, adding to the confusion. For instance, we are often encouraged to avoid labeling our animals, despite the fact that useful labels exist and are used all the time. It is important to distinguish between the use of *meaningful* labels—those that convey legitimate and useful information and promote mutual understanding—and the use of throwaway explanatory labels which define an animal as an action while transferring no useful meaning. The former increases the efficiency and fluency of communication, while the latter is the type of circular, dead-end excuse that we have all been warned to avoid.

It is worth pointing out that language itself is a system of labels. We, as humans, rely on our mutual understanding of a label’s definition to convey meaning from one individual to another. The same can be said in the context of a training dialogue, so long as everyone partaking in that dialogue understands the entire meaning of the label being used.

As mentioned above, trainers may find themselves given constructive feedback from their mentors or peers about avoiding the terms ‘reward’ or ‘treat’ and replacing them with the term ‘reinforce’. Those same peers may not fully acknowledge that a reinforcer is only accurately described as such *after* a behavior has been seen to maintain or increase in conjunction with that item being gained as a consequence. If technical precision is your only goal, the term ‘reinforcer’ as it is generally used more accurately means: *“I have provided this item as an intended positive consequence for this animal. In the past and/or in other situations, this item has predictably increased or maintained behavior, and therefore it is likely to be a reinforcer now as well... so I’m calling it a reinforcer.”* Clearly, that is unwieldy to say, and both unnecessary and intrusive to the training dialogue. Mutual understanding about the use of ‘reinforcer’ as a label allows a coworker to say that she reinforced a crane’s behavior with mealworms, and to trust that we both know exactly what she means.

When communicating with colleagues outside of your immediate peerage, this sort of ‘soft’ language may require an extra moment of explanation to ensure your new audience has all of the information you possess. Again, language and communication are challenging. The clever use of analogies can help pave the way towards true mutual understanding.

## **The Use of Analogies**

In order to ensure that technical definitions are not a sticking point (and to practice ‘useful’ labelling), any time this paper refers to an analogy, it does so with the understanding that it is *“a comparison between two things, typically for the purpose of explanation or clarification”*.

As with the above-described ‘good labels’, the use of a good analogy can clarify training concepts for a novice trainer and help more experienced trainers fine-tune the fluency of their communication. Rather than being bound by the restrictions of scientifically accurate terminology, a trainer may develop an intuitive connection to variables like rate and value of reinforcement, size of approximations, and can improve their ability to view the antecedents, behaviors, and consequences from the point of view of the animal itself.

The most beneficial analogy of this sort I've yet encountered is that of the 'Trust Account' (Martin/Friedman, 2013) which is widely used and likely familiar to most readers. Paraphrased, it's the concept of envisioning the relationship between a trainer and an animal as a bank account which can have deposits put in and withdrawals taken out. The currency is positive or negative interactions, with a bankrupted or overdrawn account the eventual consequence of too many negative interactions. As with a real bank account, this shortfall can be corrected by subsequent deposits over time. In useful analogies such as this one, the comparison between trust and currency rings true to us as humans on a deep and familiar level. It aids in comprehension of the consequences of negative interactions and the benefits of positive ones. It helps trainers intuitively decide whether or not they have the positive balance required to make a necessary withdrawal without bankrupting their relationship, and it encourages them to check in frequently with their animal to get an idea for where they stand at any given time.

Drawing a parallel between the give-and-take relationship trainers have with their animals and the barter-and-exchange concept of money is perceptive and feels natural. Perhaps because of that, we often use the term 'pay' interchangeably with 'reinforce' in training sessions at work. It is, in my opinion, both a 'good label' (in that everyone understands exactly what it means) and a useful analogy as well: as with the concept of the Trust Account, I have found it to be a sound and beneficial addition to my own understanding of training principles. Additionally, it removes the implication that we as trainers can know the outcome of the consequence immediately. We 'pay' the bird, and we will find out in time whether or not that pay was reinforcing enough to maintain or increase the behavior in question. We, as trainers, are always testing.

In this analogy, the animal's behavior becomes a job, and—if a positive-reinforcement strategy is in play—the consequence of performing work is therefore compensation for said job (i.e.: payment). In our day to day human terms, we are literally paying them for their labor. While perhaps a colder, more pragmatic equivalent than some would find ideal, I have found this analogy holds with surprising depth, and is useful both in interactions with the animals I'm training and when communicating concepts to other trainers. The challenges of language become secondary to fluently allowing innate understanding to guide the decision-making process. You ask an animal to do a job (a 'cue', or direct antecedent stimulus), the animal does a job or a part of said job (the behavior), and you provide payment for services rendered (the consequence.)

This particular analogy encourages the trainer to view the animal's labor as an effort just as valuable as their own, and to acknowledge the physical and mental work that an animal must exert to complete a behavior successfully. It is the job of the trainer as the 'employer' to provide payment in the form of a reinforcer that will (hopefully) act as ample enough compensation for the work they've completed that they will chose to engage in that same job again when asked to do so in the future. The exact type and value of the currency which makes up the reinforcer is up to the trainer to determine, and the concept of 'payment' helps the trainer determine what is fair.

Consider: An eagle flies 10ft in no wind from point A to point B and receives payment in the form of a piece of day-old chick. All other variables remaining equal, the eagle continues to fly this 10ft distance for similar pay in the future. The trainer then asks for a 50ft A-B flight in higher wind. More work is required from the bird, and therefore it is easy and natural for a trainer to intuit that a higher pay should follow, especially the first time the job is performed.

This innate knowledge need not come because they deeply understand the scientific principles of the matching law, but because it's the 'fair' thing to do within the context of the analogy. The trainer makes the right decision to bump the bird's pay, because it's how they'd want to be treated themselves if their situations were reversed. Mutual understanding—and empathy—at its finest.

Similarly, currencies aren't all the same. Two trainers can argue about the ins and outs of reinforcement schedules and variability in reinforcers, but the payment analogy steps in there as well. With the same eagle in mind, day old chick, mouse, and fish can be considered the equivalent of different denominations, with the fish being the most valuable for a particular individual (say, \$20) and the day-old chick being the least valuable. For the trainer, knowing the relative value of the reinforcers you have available to pay an animal at any given time is an incredibly useful tool. They may find they require an unexpectedly difficult job of an animal at the end of a session, and being able to compensate that job with a \$20 instead of scraping together a few measly quarters will save time and trouble for all involved.

But how does an analogy like this actually help trainers learn and grow? Some of us have watched newer trainers hesitate openly when an animal does something that is unexpected and unplanned but perhaps still desirable, before turning to their mentor to ask: "should I reinforce that?" Ignoring the fact that the opportunity for contingent reinforcement of that behavior has already passed, the answer at our facility is almost always the same: "Do you want him to do it again?" The inexperienced trainer (and we have all been there) is in danger of looking at training as a series of 'right' and 'wrong' steps. If they do *this*, I do *that*. However, the dialogue between human and animal is too complex to write out an instruction manual intricate enough to cover every possible outcome, and so the novice trainer can find themselves frozen in the face of the unexpected, fearful of making a mistake rather than focusing on seizing an opportunity. Through the use of analogies like the concept of payment and the Trust Account, the novice trainer has their own human experience to fall back on; an inherent feeling for what is fair and correct in a situation, which may help them navigate roadblocks in their future training in moments when consulting a textbook is impractical.

## **The Abuse of Analogies**

Just as there are useful and harmful labels, it is true that not all analogies are helpful. A useful analogy clarifies a situation for a learner by helping them frame the unfamiliar situation they're experiencing with a more familiar, understandable context. The result is increased comprehension in the learner, and a more innate and easily-acted-upon understanding of the current conditions and future steps.

Harmful analogies do the opposite: they obfuscate, complicate, or confuse the current situation by the addition of confounding variables.

One of my favorite analogies, used when trying to quantify an animal's level of motivation, starts out simply enough: if the animal was a college student sitting on the couch in front of a TV, and you handed him a piece of pizza, would he eat it? Will he get up and walk to the kitchen

to get a piece for himself? Would he race his roommate to it if there was only a single piece left? Would he do any of the above if the pizza was instead broccoli?

Much like the ‘money’ analogy, this one is rigorous and allows for significant manipulation of the variables without becoming either overly complex or nonsensical. Yet a trainer who I respect approached me after a discussion featuring this analogy with a concern about its use. He stated that when teaching others how to quantify and influence an animal’s motivation, he preferred to avoid the use of any food-related comparisons. His reasoning is that the use of such an analogy intrinsically pairs the concept of motivation with food in the minds of laypeople or newer trainers, which may in turn cause too much focus on food being the only reinforcer available and/or on weight manipulation being the sole method of influencing motivation. If this is true (and I have not yet found it to be so), then this would indeed be an analogy which causes more harm than good, and therefore one that should be considered carefully before use.

Any analogy, even the most robust, will start to crumble around the edges when pushed to the extreme. The motivation behind encouraging (or at the very least, not condemning) their use during training dialogue isn’t to encourage everyone to adopt any of the concepts contained within, or to become rigidly attached to a particular manner of viewing things. Language is mutable. It changes. So, too, does science—including the science of behavior change. While every trainer may not always be able to keep up to date with the newest definition of how to ‘properly’ use an LRS (or what it even is), most trainers intuitively know something more important: how to provide fair, positive consequences for their animals. If it is beneficial to keep in mind that these are living beings performing effortful labor in exchange for a desirable result from their environment, then perhaps using the term ‘pay’ can be just as valuable as the term ‘reinforcer’ in the right context. So long as we can make it worth it to them, we are doing something right. All the better if we can also help bridge the gap between intuitive understanding and technical knowledge, and therefore increase mutual understanding overall.

## **Conclusion**

Scientific knowledge and accurate use of terminology is a useful tool, but it changes over time. Sometimes, it’s distant and cold and confusing, and there’s a divide between making intuitive decisions in the moment and having the theoretical knowledge there to explain those decisions accurately. On the other hand, completely informal colloquial language is easy and comfortable to use but may carry conflicting or detrimental meanings and lose context when used with individuals unfamiliar with the ‘lingo’. The use of sensible, robust, and helpful analogies builds a bridge between these two extremes. They can help a trainer empathize with their animal, increase the efficacy of training decisions, and assist in the development of a more intuitive dialogue between humans and the non-human animals with which they work. Isn’t language wonderful?

## **References**

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