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Terminology Tumult: Coming to Terms with Terms
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Behavior science is on the map and that is good news for companion parrots and their caregivers. With science as our starting point, we can better navigate our way to more effective, humane practices and improve the quality of life for our birds in captivity. With the World Wide Web, we now have access to more science information than ever before but with this information boon also comes added confusion, misconceptions and controversy. This is due in large part to the diverse backgrounds of the professionals involved with parrots that have different focuses and add new concepts and new vocabulary to the mix.

Adding to the confusion are those words that mean one thing in everyday life but something else in the technical language of science. Scientific terms typically have very specific, precise meanings so that standard dictionaries are not always the best source of correct definitions. Further, technical dictionaries from different, related disciplines and even those within a single discipline, sometimes define the same terms differently. This creates a Tower of Babel, or is it a Tower of Babble, that has us talking at cross-purposes.

Admittedly, developing a standard lexicon is not the most exciting aspect of living and learning with parrots but the lack of a common language is a significant barrier to developing a cohesive community of parrot caregivers and professionals. Without common meaning, words cannot maintain their usefulness, partners cannot communicate, and knowledge across different fields cannot be combined.

A standard set of terms is made all the more important because the very names we use influence the way we perceive and think about what we observe. We've all experienced this phenomenon, best characterized as, "If I didn't believe it, I wouldn't have seen it!" In a stunning example of this expectation effect, just last year Erich Jarvis, a neuroscientist from Duke University, and 28 other scientists renamed the 100 year old terminology for avian brain structures to reflect mammalian counterparts. The traditional view relied heavily on prefixes like "paleo" and "archi" that indicated the primitive nature of bird's brains. Five decades of behavioral and brain research has shown that in fact the major parts of avian brains are comparable to three major structures associated with complex behavior in mammalian brains. (See www.nsf.gov for more information and great graphics on this subject).

Before considering some ways to overcome this barrier to communication, let's look at an example of this terminology tumult with the one pair of terms that may win the award for the most misconstrued behavior science terms ever – redirected aggression and displacement behaviors. In addition to illustrating the problem, we can use this opportunity to come to terms with these terms!

Redirected Aggression and Displacement Behaviors

It isn't any wonder that we are confused by the terms redirected aggression and displacement behavior. These terms are 1) borrowed from every day language, 2) have different meanings in 3 different fields -- biology, behavior analysis and clinical psychology, and 3) are frequently used incorrectly or inadequately in popular parrot literature. Consulting relevant dictionaries is a sound first step to sorting out technical terms and so I started with Barrows' *Animal Behavior Desk Reference: A Dictionary of Animal Behavior, Ecology, and Evolution* (2001, p.12), which defines "redirected aggression, redirection" this way:

n. An animal's action that it deflects from an object that arouses it toward a neutral (or substitute) object, e.g., a lower-ranking conspecifics, a stone, or a clump of grass which it might pull (grass pulling) (Dewsbury 1978, 19; Immelmann and Baer, 1989. 246).

cf. aggression: displaced aggression, behavior: displacement behavior

Comments: "Redirected aggression" involves an animal's switching its target, while "displacement behavior" involves its changing its kind of behavior. This concept is comparable to the psychological term "aversion-induced aggression" (Immelmann and Baer 1989, 24) and the psychoanalytic term "displaced aggression" (Dewsbury 1978, 19).

It is immediately apparent that figuring out the standard dictionary symbol system is essential to researching meanings to avoid misconstruing how the terms listed in the definition are related. The "cf." included above (from the Latin *confer*) directs the reader to related terms (sometimes antonyms) and related information to help clarify the main entry. Without knowing this, one might misinterpret the words following *cf.* as synonyms for the main entry. "Comments" refers to the entire entry, not just one particular definition within the entry, where multiple definitions are provided. With this particular definition, it is the comments that hold the key to clarifying the meaning of redirected aggression and contrasting how it is different than displacement behaviors, according to Barrows dictionary. Let's take these definitions for a spin. Below are two examples of what redirection and displacement behavior look like with companion parrots. Which is which?

JoJo is Wilma's parrot who enjoys perching on Wilma's shoulder when Wilma works at her desk in the evenings. Most often it is Wilma's husband Jack who returns JoJo to her cage at day's end.

Behavior #1: Lately, when Jack comes into the room to get JoJo, she lets out a loud squawk and bites Wilma hard on the back her neck.

Behavior #2: Lately, when Jack comes into the room to get JoJo, she starts vigorously preening her tail feathers.

If you labeled behavior #1 redirected aggression and behavior #2 displacement behavior, you've distinguished and applied the terms correctly, according to the conventional meaning used by many biologists. With behavior #1, it appears (i.e., we hypothesize) that JoJo *redirected* the target of her bite from Jack to Wilma. With behavior #2, it appears that JoJo *displaced* biting with preening. Displacement activities are characterized as irrelevant behaviors, given the circumstances, and are often self-

directed, like grooming behaviors. Both redirected and displacement behaviors appear to be most likely when an animal is thwarted or in conflict between two opposing tendencies, such as choosing between defense and escape behaviors (Manning and Stamp Dawkins, 1992).

It's important to note that these terms only describe, rather than explain, JoJo's biting and vigorous preening. Like all behavior, we assume redirection and displacement behaviors are the result of each animal's genetic and learning histories. In any case, to the extent that these terms allow us to observe and predict our parrot's behavior more sensitively, they can be very practical additions to our companion parrot behavior vocabulary. Adopting these meanings also allows us to communicate more effectively with biologists and other professionals working with parrots.

Bonanafanafana...the Name Game

Our goal to develop a standard language among parrot caregivers and professionals is made all the more challenging when different words have the same or similar meanings and when the same or similar words have different meanings. Again the terms redirection and displacement provide good examples. Experimental behavior analysts use the terms *adjunctive* or interim behavior to describe excessive, irrelevant behavior observed in the laboratory induced by the timing of reinforcement (similar to Barrows' displacement). Applied behavior analysts often advise parents and teachers to *redirect* problem behaviors to more appropriate activities, such as when a child is handed a coloring book to distract her from nail biting (similar to Barrows' displacement). And Freudian psychologists diagnose *displacement* in cases where they believe the real drive to engage in an acceptable behavior is an unconscious wish to engage in a socially inappropriate behavior, such as when someone hits a punching bag rather than his boss (similar to Barrows' redirected aggression)!

You can see why I propose that we turn to Barrows' meanings for these two particular terms. Of the various choices, in this particular case, it is the biology usage that provides the most relevant descriptions of the behaviors we often observe with parrots.

When Does it Matter that a Tomato is a Fruit?

Terminology is never final. Meanings may change as new information becomes available and old information is clarified. On the one hand, there are rarely absolute definitions agreed on by everyone, all the time. On the other hand, terminology can not be used meaningfully or practically if we accept a verbal free-for-all. With the World Wide Web, technical glossaries are at our finger tips, which expedite developing a common language to describe the behaviors, processes and procedures relevant to our work with birds. One glossary that I highly recommend for its breadth and accuracy of behavior analysis terms can be found at www.behavior.org. Barrows' *Animal Behavior Desk Reference* is an excellent resource for ethology terminology and although the currently available second edition very expensive, the first edition is still very useful and can be purchased very reasonably.

When terms are misused or inadequately used, parrots lose: Our ability to make sense of the relationships between their behavior and the environment we provide is diminished; our need to communicate with one another meaningfully is unfulfilled; and our hope to combine information from related fields with our own experience is dashed.

But, as you can see from this exercise with these two terms, it takes earnest effort to track down competing meanings; it takes serious commitment to engage in discussions in the face of disagreement; and, it takes stalwart ethics to make the inevitable public self-corrections required to maintain some consensus about our terms. These are expectable growing pains for any field and a standard of professionalism that our parrots are well worth striving to achieve.

References

Barrows, E. M. *Animal Behavior Desk Reference: A dictionary of Animal Behavior, ecology, and evolution* (2nd ed.) FL: CRC Press.

Manning, A., Stamp Dawkins, M. (1992) *An Introduction to Animal Behavior* (4th ed.). Cambridge: Cambridge University Press.