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Pair Formation and Reintroduction of Temporarily Separated Partners

A Discussion on the Laboratory Animal Refinement & Enrichment Forum

The following discussion (which has been edited) took place from October 25 to 28, 2005, between Erik Moreau [*cichlid@colba.net*], Dawn Abney [*dmonkeywoman@hotmail.com*], Autumn Sorrells [*autumn.sorrells@ucsf.edu*], and Viktor Reinhardt [*viktor@snowcrest.net*]. To subscribe to the Forum, send an e-mail to <*viktor@snowcrest.net*>.

Moreau: "How have you been re-introducing a previously established pair after a brief period of separation?"

Reinhardt: "My experience with rhesus has taught me never to directly reintroduce partners after one of them has been removed from the home cage for more than 24 hours. When you simply put them together, there is a risk that the two companions do not recognize each other quickly enough at the moment of introduction but treat each other as strangers. The consequences of this misunderstanding can be VERY severe.

"You can avoid this risk by inserting a transparent or grated mesh divider, and then introduce the one who had been away into the empty half of the cage. Let them find out who they are, and then remove the divider. This trick always worked with rhesus, and there is no reason why it shouldn't work also for your cynos. I know there is an extra time investment but I think it pays off in the safety of the animals."

Moreau: "I had never had a problem rotating one of my adult rhesus between two other males. This guy was quite submissive and he showed it very clearly. This may be the reason why the other two males never started to assert themselves by means of overt aggression: the submissive one gave them no reason."

Abney: "I have had great success with pairing cynos in the past. For some obscure reason, adult cyno males have been easier to pair than females. You might have a little bit of trouble re-pairing them if they were separated for a month or longer with no visual contact, but I have put pairs back together, after being separated for two weeks, with no problem. We use a clear panel placed between the two cages so the pair can maintain visual contact while separated, but even when that's not possible the pair typically goes back together just fine. The only animals I have had problems re-pairing after more than one month-long separations were adult male rhesus.

"If your cyno males are separated for one or two days only, I really don't think you have anything to worry about when it comes to re-pairing them without preliminaries. Cynos don't always group well, but it is my experience that they make pretty good pairs distinguished by a long-lasting, firm compatibility!"

Reinhardt: "Your message is very encouraging because you make it quite clear that adult cyno males CAN be paired without undue risks. Many people were made to believe that adult cyno males are better not paired because they were assumed to be intolerant of each other. Obviously this does not need to be true, depending on how you pair the animals and how you keep them after the pair has been established.

"I should perhaps point out that there are published articles that are in line with your observations:

Lynch, R. (1998). Successful pair-housing of male macaques (*Macaca fascicularis*). *Laboratory Primate Newsletter, 37[*1], 4-5, <www.brown.edu/Research/Primate/lpn37-1.html#pair>.

Hartner, M. K., Hall, J., Penderhest, J., & Clark, L. P. (2001). Group-housing subadult male cynomolgus macaques in a pharmaceutical environment. *Lab Animal, 30*[8], 53-57.

Seelig, D. (1998). Pair-housing male *Macaca fascicularis*: A Summary. *Laboratory Primate Newsletter, 37*[3], 14-16, <www.brown.edu/Research/Primate/lpn37-3.html#seelig>.

Watson, L. M. (2002). A successful program for same- and cross-age pair-housing adult and subadult male *Macaca fascicularis*. *Laboratory Primate Newsletter, 41*[2], 6-9, <www.brown.edu/Research/Primate/lpn41-2.html#watson>."

Sorrells: "Please do let us know what technique you use to match up male partners. We have great difficulty pairing 3- to 7-year-old male cynos. Females never give us a problem."

Abney: "I am a little surprised that your 3- and 4-year-old males don't go together well. With animals that young, I usually just put them directly together. They are typically compatible without any ado. I never had problems with young males."

Reinhardt: "I also introduced young rhesus macaques directly without encountering problems. When they are over three years old, rhesus — especially males — often show strong dominance status ambitions, so I first allowed them to establish their rank relationships during a non-contact familiarization period before introducing them as a pair. This eliminated the risk of injurious fighting over dominance at the moment of introduction."

Abney: "With our cyno males older than 5 years, I definitively take no chances but always start off with a transparent panel between the two intended partners. From this I can usually gauge how the socialization will go: Attacking the panel = bad; Lipsmacking or showing

curiosity = good. Most of the time I know within the first 30 minutes whether or not things will work out when I eventually give them full access to each other by removing the panel. Needless to say, I separate partners the moment they show signs of imminent fighting; otherwise I leave them together. Compatible partners are not separated during the night."

Sorrells: "Yes, this is the same technique we use. Yet, many of the animals tested showed lipsmacking for about 20 minutes and then started sham-attacking the partner behind the panel over and over again for up to two hours. We do not take the risk of removing the dividing panel in these cases, but even other partners who give the impression of being more at ease with each other often end up fighting and injuring each other when we remove the panel. This isn't to say we have never paired male cynos, but we haven't had great luck. We keep trying though, much to the PIs' dismay!"

Reinhardt: "Are you pairing the males in a male-only environment with no females being around?"

Sorrells: "Yes, we are."

Reinhardt: "Did you try introducing partners whom you deem compatible in a different cage? When I started pairing adult rhesus, I familiarized potential partners with the help of a grated cage divider, which I simply removed once the pair had established a clear dominance-subordinance relationship. This usually worked, but on one occasion both partners engaged in serious territorial aggression, and this was the end of the pairing attempt. From then on, I always took the trouble to introduce the two partners in a different double cage, and if needed return them to their original location a few days later."

Sorrells: "Yes, we do this too, but I think it does not make a big difference. Our males just don't work out very well in a pair situation."

Reinhardt: "To sum up, it seems advisable to monitor the reintroduction of temporarily separated partners very carefully, and if possible, to allow the animals to first recognize each other before they are reunited as a pair. There is no good reason to believe that male cynos are less suitable for isosexual pair-housing than rhesus. If and how experimentally-induced pathophysiological processes affect the compatibility of pairs needs to be explored."