

Introduction of Three Sub-Adult Female Western Gorillas To a Reintroduced Silverback

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Attempts to release orphaned mountain gorilla infants to the wild population have always failed, even after initial promising results in some cases (Harcourt 1989, Mudakikwa 2002, Whittier 2004). This has led to the current plan to wait for a female orphan to reach sub-adult age before introduction, and thus to more closely mirror wild female immigration events (Whittier & Fawcett 2006, Childs 2007, 2008). We present here a case-study of the closest comparable event in western gorillas, that of the introduction of a rehabilitated group of three sub-adult females to an unknown reintroduced silverback, and subsequently to three adult females, in the southwest Lefini Reserve (Republic of Congo). The reintroduction programme for western gorillas to two sites within the former range of the species in the Batéké Plateau region of Congo and Gabon, managed and financed by the UK-based charity The Aspinnall Foundation as part of *Projet Protection des Gorilles* (PPG), is described in detail

elsewhere (eg Courage 2002, King 2005, King & Chamberlan 2007, Pearson et al. 2008). Most releases have involved mixed-sex groups into areas separated to some extent from other reintroduced groups. We describe here the preparations and post-release results concerning the most recent release of the programme, of three sub-adult wild-born females, undertaken in Congo in 2006, which resulted in the introduction of the females to a silverback released over three years earlier within a mixed-sex group.

The three females were wild-born orphans of the illegal bush-meat trade, two originating from the north of Congo, the third from the southwest. The youngest was the first to arrive at the PPG-Congo gorilla sanctuary. She had been orphaned at less than 2 months old, and spent the next six months of her life as part of an Italian family in the coastal city of Pointe-Noire, where she was named H el ene. Her earliest memories are therefore of her

adopted human family, and indeed it was her transfer from that family to PPG, in June 2001, which constituted her first traumatic experience. As with all gorillas in a stressful situation, she struggled to adapt to her new life, suffering from the stress and related digestive problems. A natural fighter though, she reacted by biting a lot, and stood up for herself against all strangers. Meeting other gorillas proved another frightening experience - on her first day she sat frozen still with her eyes tightly shut. Over the course of the following year, attempts to integrate her into a free-living rehabilitated group of older orphans ultimately failed, and she was finally withdrawn from the group in October 2002, when the arrival of three new orphans allowed the formation of a new rehabilitation group.

Two of these were Likendz e and Matoko. They were discovered together in a tiny cage of chicken wire in the dark corner of an outdoor shed in the capital city of Brazzaville. An elaborate trap was immediately set-up by government officials to confiscate them and give them a chance of survival. Highly traumatized, they arrived in a wooden case only just large enough to fit them in, but when given the opportunity to leave it, they refused, scared of what might happen to them in the hands of humans. Clinging tightly to each other, Likendz e would

simply bow her head and hide her eyes when approached, Matoko would show her impressive teeth in defiant warning. Despite their tiny emaciated bodies, the size of their hands, feet and teeth showed that they were about 3.5 years old, old enough to fully understand what they had been through. Either one alone would not have survived the experience, but together they were hanging on to the threads of their existence - single gorillas of this age have never been received at PPG-Congo as they are too psychologically fragile to survive the trauma alone.



H el ene (left) and Matoko with Likendz e when they arrived. Photos courtesy of V eronique Barazzutti and Sinead Lynch.

We didn't see them move for three days and we had no idea if their legs were broken or not. The initial stage of their rehabilitation involved the building of their trust in humans. This was helped by their introduction to H  l  ne in November 2002, whose life-story was in contrast to theirs. All three benefited from the union, H  l  ne learning forest skills from the much more experienced Likendz   and Matoko, while H  l  ne's exuberance and confidence in human presence brought Likendz   and Matoko through their mistrust of people.

A first accidental introduction to a silverback: Six months before the release to the southwest Lefini, the group experienced meeting a silverback for the first time since being orphaned. Four adult males were caged at the Lesio-Louna while awaiting their transfer to a forested island at the south of the Lefini reintroduction site in 2007 (King & Chamberlan 2007). On April 9, 2006 one of these escaped and found his way to the wooden dormitory in the forest where the group had been returned following news of the escape. The 17 year-old silverback Kola, broke into the wooden cage to 'release' the three females, aged 7 (Likendz   and Matoko) and 5.5 (H  l  ne). During this time, and presumably immediately after, we could hear lots of screaming. Matoko apparently fled, and found her way quickly to the staff camp, although she had never previously been there. H  l  ne and Likendz   remained with Kola, and the three were located together the following morning. Given H  l  ne's human upbringing, we tried to recapture her by offering her human comfort, but this didn't work, and we had to anaesthetise her to prevent her returning to Kola in the forest. Neither method was possible for Likendz  , and she remained

with Kola in the forest until we finally succeeded in anaesthetizing him nine days after his escape.

Given the extent of the screaming during the initial 'introduction,' we had been very concerned for the safety of the three females. As it turned out, Matoko and H  l  ne both had various wounds, but none very deep, and some may have been due to trying to escape from the dormitory rather than from bites by Kola. It was Likendz   who exhibited the worst injuries, including one particularly deep bite-wound on her right fore-arm (appr. 4cm deep x 1 cm long), plus shallower wounds on her left inner shoulder, right inner shoulder, below her right eye, left breast, left hand, right hand, and chest, although again, some of these smaller wounds may have been due to trying to escape from the dormitory. Although we didn't get a close look at Likendz   until after the recapture of Kola, all her wounds appeared to date from the first day, with no fresh wounds apparent. We treated all three females with oral antibiotics, but this was precautionary and may not have been necessary.

The release: The three females, aged 7.5 (Likendz   and Matoko) and 6 (H  l  ne), were released in the southwest Lefini Reserve on the 15 October 2006. By the standard classification used for mountain gorillas, they would be considered sub-adult (6-8 years; between puberty and fertility). There is evidence to suggest that western gorillas may develop more slowly than mountain gorillas, in which case at least H  l  ne could still be considered juvenile. However, all three had already begun oestrus cycling, Likendz   one year earlier and H  l  ne and Matoko in the two months prior to release, so we will respect the mountain gorilla classification and consider them all as

sub-adults. The transfer from the Lesio-Louna base-camp to the release site was medically supervised by Dr. David Hayman, a British veterinarian who had undertaken TB tests on the group earlier in the year. Project staff had managed to get all three into their dormitory the previous evening, despite the fact that earlier in the week they had started to refuse to enter the dormitory, preferring to sleep outside. Each was anaesthetised for a final TB test, blood haematology and serology exam, and for placement in individual transport crates, before they were given an antidote to the anaesthetic so that they were fully recovered for the two-hour drive to the southwest Lefini, and the 25 minute boat journey to the release



Left: Kola, one year after his escape and encounter with the 3 females;
Right: Makoua, warning us to keep our distance from the females 10 days after their introduction in 2006.

Photos courtesy of Tony King.

site. The three cages were lined up together, some fruits were left amongst some bushes just in front of them, and they were released simultaneously. They headed straight for the fruits, which they ate murmuring contentedly. Their usual caregivers stayed until 17:30. The next morning, the 3 gorillas were found close to the release site in good health, having ignored the small shelter provided and slept in the forest despite heavy rain during the night.

Introduction to a reintroduced silverback: We had considered three options for the integration of the three sub-adult females to the reintroduced population: a) introduction to a solitary silverback (Bangha); b) introduction to the first released group (silverback Makoua, three adult females and a baby); or c) introduction to the second re-

leased group (nine individuals aged between 7.5 and 12 years, without a silverback, plus two new-born babies). The first option was rejected due to the overly aggressive behaviour of the silverback to other released females, which had led to him becoming solitary from the first released group, and unable to initiate females to transfer from the second released group. We therefore delayed the release of the three sub-adult females until Bangha had been removed from the release site

by transfer to a forested island. The second option was our preferred option, given the relatively gentle nature of the group silverback, but we still had doubts over his reaction and also that of the adult females in the group, particularly the dominant female (Djembo). Therefore we had chosen the third option, as none of the males had reached their full size, and we felt we could control the situation to some extent should the introduction go badly. The three females were therefore released a little to the north of the home range of the second group, to give them a month or two to settle in to the site before the introduction.

As always, the gorillas had a better plan, and two weeks after the release, the silverback from the first group had found the three females. The monitoring team had noted that Likendzé had begun oestrus on the 31st of

October, and that all three were in oestrus on the first of November. The 15 year-old silverback, Makoua, was observed directly at the release site on November 2nd, in the company of Matoko, having encountered the group earlier that morning or late the previous evening. Matoko appeared fine, while noise high in the trees nearby indicated the presence of one or both of Likendzé and Héléne. On the 3rd of November, Makoua was observed with Matoko and Héléne, while indirect observations suggested Likendzé was slightly apart from the others. On the 4th of November, Makoua and Matoko were again observed together, with Matoko still in oestrus. Likendzé was thought to be nearby, while Héléne was observed alone, scared and nervous, with small wounds on her leg,



Matoko, Likendzé and Héléne, three months before their release in 2006. Photo courtesy of Tony King.

ankle and hand. The following morning Héléne was found alone again, but by the afternoon, all three females were observed with Makoua, all calm and with no evident tension, roughly 3.5 days after the initial encounter.

The group of four continued to stay together calmly for the following days, with the minor wounds evident on Matoko and Héléne healing slowly. However, they began heading south, so to avoid them meeting the second released

group, it was decided to lead them northwards, with the hope of integrating them with the remainder of the first group. On the 10th of November Makoua was quite aggressive with Matoko, including giving her a fairly serious bite on her back. This was thought to be due to Matoko approaching the staff team too closely. By the 15th of November, the group of four had been led to the core home range of the first released group. They were not observed directly again until the 18th of November, when the two groups were observed together, calm and in good health, with no fresh injuries. This enlarged group of eight remained together for about nine days, after which there was a period of about three weeks during which the three sub-adult females became more-or-less separated from the others, although on one occasion they were observed with one of the adult females.

Even the silverback Makoua lost them for a few days, and made an unsuccessful trip to their release site, presumably to see if they might be there, although the following day, December 18th, all eight were observed together. Since then, the group has remained together, and within the original home range of the first released group. Although taking a little over six weeks to stabilise, the introduction of the three sub-adult females to the silverback and three adult females was finally successful.

Conclusions: Every gorilla has their own distinct personality, so it is almost impossible to make general conclusions about complex social interactions, especially based on small sample sizes. We have demonstrated, however, that the introduction of sub-adult orphan female gorillas to a free-ranging and unknown silverback is possible. Apart from disease transmission, which should be controlled by extensive veterinary procedures, the major risks involved appear to be a) serious injuries to the females, which can probably be reduced by careful selection of an appropriate silverback; and b) the fleeing of the females, which we observed with one of our three females during the first accidental encounter with Kola

after he escaped from his cage. Both these risks may be exacerbated with rehabilitated females by the presence of well-known humans, as a scared female may well attempt to find protection with the humans (effectively her 'natal' group), which in our experience only leads to increased aggression from the unknown silverback to assert his dominance. Another point worth noting from our experiences was that in the second case, the silverback and the three sub-adult females stabilised into an apparently cohesive and generally calm group within 3.5 days. Conversely, subsequent integration with three adult females and an infant took about six weeks to stabilise. With wild gorillas such a lengthy integration time may be unfeasible, so it appears that introduction to a solitary silverback may be a more straightforward option than introduction to a group. Further considerations, such as the timing of introduction within the oestrus cycle of the female, could probably be helped by studying the results of captive introductions. We hope that our experiences with free-ranging, wild-born gorillas will be of help for future introductions, and especially with the delicate case of wild mountain gorillas.

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