
The Integration of Julia

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INTRODUCTION

Having been removed from the wild as an infant in 1982, the gorilla Julia became the focus of much controversy when bought by Dutch journalists and smuggled from Belgium into the Netherlands as part of an exposé on trade in endangered species. The ownership of her was eventually passed to the WWF Netherlands, and under their direction she was returned to Africa to lead a semi-wild existence in the Gambia in readiness for participation in an envisaged pilot gorilla rehabilitation project. Consequently, Julia spent her formative years in the Abuko Nature Reserve, often in the company of young chimpanzees. However, despite a healthy and stimulating environment, she lacked the company of her own species, a fact made all the more apparent with the onset of puberty. By 1990, the proposed rehabilitation project was yet to be initiated, and the Jersey Wildlife Preservation Trust, at the request of WWF Netherlands, agreed to undertake the resocialization of Julia through integration into its established breeding group which, at the time, comprised eight individuals (see Table 1 [not reproduced]).

QUARANTINE

Accompanied by her keeper, Karafa Badji, the nine-year-old female arrived at the Trust on 21st May 1990, where she was housed in a specially prepared area in the veterinary centre for most of the compulsory six-month quarantine period. At this stage acclimatization was a chief concern and, in order to make it a gradual and as comfortable a process as possible, early summer had been purposely chosen as the most suitable time to receive her. This very soon proved to be the correct decision, as she quickly showed a marked preference for the small outside run attached to her main heated quarters. In fact, such was her reluctance to use the bedroom area on any regular basis that some initial servicing problems were encountered. However, over the ensuing weeks a routine was established whereby all food and drink was administered from inside, which eventually encouraged Julia to be more cooperative. Fortunately, her appetite had been unaffected by the long journey and change of environment and, there being many similarities between the Jersey diet and the fruits, vegetables and eggs that she had thrived on in the Gambia, she readily consumed most items offered. Interestingly, to begin with, she did reject some of the more succulent fruits in favour of carrots, which apparently she had never tasted before, and she was also suspicious of the yoghurt and vitamin supplement mix given daily to the other gorillas.

The commercially prepared 'ape pellets' were taken with great relish, as was the low-fat skimmed powdered milk drink, though for a considerable time she insisted on lapping it up from her cupped hands.

Julia's diet at Jersey was as follows (approximate amount fed to her after a settling-in period):

- 08.00-08.30 - 1 apple, 1 orange, 2 carrots, 1/4 grapefruit;
- 12.00-12.30 - 1/2 lettuce, 1/4 cabbage, 1/4 head of celery, 2 tomatoes, 1/2 slice of brown bread, 125 g ape pellets.
- 14.00 - forage (e.g. branch, sunflower seeds or raisins, etc.);

- o 16.00-17.00 -1 apple, 1 orange, 2 carrots, an 'extra' (e.g. pear, plum, slice of pineapple or melon), 2.5 litres skimmed milk.

Over a three week period Karafa gradually relinquished his duties pertaining to the management of Julia, although he maintained an occasional presence which certainly helped to reassure her. Following his departure in mid-June, there was a noticeable change in her general disposition. At first she became moody and appeared unsettled, but then her mischievous nature emerged, and she began to display an increasing amount of what can best be described as 'attention-seeking' behaviour!

As part of the States of Jersey Department of Agriculture's requirements, it was necessary for Julia to undergo two full medical examinations, the first of which, carried out on 4th July, showed her to be in good health. Unfortunately, some four months later, she was observed displaying acute signs of stiffness in her hip and elbow joints; in addition, samples of her urine revealed traces of blood, an indication of a possible kidney infection. Subsequently, whilst under sedation for X- rays, blood and fluid sampling and joint manipulation, Julia was transferred to more spacious accommodation in the Gorilla Breeding Centre. Her weight at this time was recorded at 60 kg.

Though still effectively isolated from the other eight occupants of the building, Julia, once fully recovered, was nevertheless able to familiarize herself with most of the complex, and also sometimes, when her potential companions were outside, to observe them from windows in the exhibition area. Initially startled, but clearly excited on seeing gorillas for the first time, the new arrival was soon heard to emit grumble vocalizations indicating her pleasure.

INTEGRATION PHASE I

Quarantine restrictions were lifted on 21st November, from which point Julia was allowed regular visual and tactile contact via barred partitions with certain members of the Jersey group. Although understandably wary of their sudden close proximity, her reactions were for the most part encouraging.

Whilst Rafiki, a boisterous seven-year-old male, intimidated her with frequent teasing displays, the young females Hlala Kahilli, then approaching three years of age, and her half-sister Sakina, some four and a half years, soon proved to be more compatible. Subsequently, controlled mixings were organized in the off-show dens, with the interconnecting slides secured open just wide enough to allow the younger animals to pass through. Following a brief spell of reciprocal exploratory sniffing and touching, some tentative play interaction occurred. More often than not initiated by Julia, it took the form of vigorous grappling, mouthing and some chase retreat behaviour, which occasionally would culminate in a nervous squabble. However, as sessions increased both in frequency and duration, interactions became less frenetic, and gradually alliances began to form.

Meanwhile, the dominant females Kishka and N'Pongo, though very much intrigued by Julia to begin with, exhibited more concern for the welfare of their offspring during these boisterous mixings, and only bothered to approach the partition to vocally threaten the new female whenever she became over-enthusiastic in her attempts to play. In response to these threats, Julia would retreat to the rear of her area, where she would proceed to rock back and forth whilst clutching armfuls of bedding material. The displays by Rafiki, especially when in close proximity, also had a similar effect on her, as did the occasional alarm vocalization from the silverback male, Jambo, who at this stage had yet to be introduced into an adjoining area. Consequently, during this very testing period, Julia was often given to bouts of 'rocking', which she

sometimes accompanied with chimpanzee-like antics of 'lip smacking' and 'gaping'. Apparently she had been seen to exhibit these gestures on a fairly regular basis during her latter years in the Gambia. Abnormal behaviours such as these, along with pacing, swaying, self-biting, self-clasping etc., are generally considered to arise from rearing conditions which are inadequate in some way. It was thought possible that Julia's behaviour might have resulted from the absence of a certain level of stimulation and consistent patterns of interaction normally provided by the mother. There again, it may also have been a means of moderating anxiety or fearfulness. According to some researchers, such behaviours are often elicited in situations of novel stimulation or high anxiety. In Julia's case, the rocking, lip-smacking and gaping appeared to serve both functions.

Despite experiencing the inevitable stresses associated with integration, Julia, to her credit, remained a very approachable individual, which in turn proved extremely beneficial both in her day-to-day management and with certain of her introductions. On the positive side, her mixings with Sakina and Hlala Kahilli continued to be successful and were incorporated into a routine devised to minimize disruption within the group. In addition, she was exposed daily to all four adult females, including Nandi and the youngest, G-Anne. The duration of exposure times, which ranged from an hour to just over half a day, tended to depend very much on Julia's tolerance, particularly towards Rafiki.

By early December, she was confidently using all available inside space, and especially seemed to enjoy spending time in the large glass-fronted exhibition areas, each measuring 7.3 m by 4.8 m by 3.6 m high and furnished with ropes, scramble nets, splash pools and suspended platforms. Stick fishing in the artificial termite mounds quickly became a popular pastime with her, which served to entertain both ape and visitors alike.

On 6th December, whilst Julia was actively occupying the left-hand exhibition area, it was decided to allow Jambo access to the right-hand side. Having displayed impressively some weeks earlier, when Julia's face had suddenly appeared at a window, the silverback once again performed to intimidate. He entered in a shuffling, strutting trot with lips tucked, stood rigid for a few seconds and then shoulder-barged the barwork with considerable force. He repeated this three times in rapid succession, and then stood glaring as Julia, in surprisingly bold fashion, beat her chest, lip-smacked and then strutted defiantly along the length of the partition. It was a demonstration that Jambo seemed totally unprepared for, and for several minutes he contented himself with pacing majestically around his section of the exhibit. Inevitably, however, further goading by Julia produced additional flurries of partition battering, which eventually persuaded the female to retreat to the back dens. Whilst Julia's initial reactions could possibly be attributed to a lack of social experience, it must also be said that the silverback's overall response during this ninety - minute introductory period was, for him, unusually tame. The following day, however, after a similar initial display from each individual, Julia chose to keep her distance from the bars and remained largely impassive, whilst Jambo went through his dominant display routine. Over the next few weeks, this tended to be the pattern of behaviour observed between the two whenever they were run side by side, which was as often as routine would allow. Though for most of the time the female was generally relaxed, she was occasionally seen to comfort herself with brief bouts of stereotyped 'rocking'.

INTEGRATION PHASE II

The next significant step toward Julia's integration took place on 14th January 1991, when she and the nulliparous female G-Anne were run together using the exhibition areas. This followed an approximate ten- week period during which both individuals had, for the most part, responded in a very positive fashion towards one another. The mixing, which lasted just over an hour, saw excitable displays from each female, which on the whole were fairly good natured. Often the animals

would approach each other bipedally, chest-beating before a brief sparring bout, followed by 'rough and tumble' play. G-Anne initiated most of the action, and was always keen to get to grips with her new companion. Julia, on the other hand, was at times a little apprehensive and was always looking to limit physical contact. Shortly before they were separated, G-Anne received a sharp reprimand from Julia for her persistence, in the form of a 'push and slap' manoeuvre, and quickly responded by grabbing Julia round the neck, causing the younger female to scream. A scuffle then instantly developed, with both gorillas cough-grunting whilst grappling furiously. G-Anne then retreated to the far side of the area and sat down, only to be joined seconds later by a breathless Julia who, once again, had given an excellent account of herself. Similar mixings were then organized daily for a minimum period of one hour, and equally encouraging results were obtained.

Unfortunately, in late February, Julia suffered a severe setback when she once again showed signs of stiffness in her limbs. Beginning in her toes, arthritic-like symptoms spread to her fingers, then wrists, elbows and knees, rendering her incapable of normal movement for almost four weeks. On 5th March she was sedated for examination and, once again, X-rays were taken and blood and joint fluids were sampled. On this occasion, she was found to have shigellosis (*Shigella flexneri*), which was subsequently treated with Co-Trimoxazole. Her medical record reads:

1. X-rays- all normal;
2. Full blood picture shows high platelets, low urea and negative R.A. Latex screen polyarthropathy shows high levels of C-reactive protein, indicating an acute phase response to bacterial infection or trauma;
3. Urine shows nothing significant;
4. Fluid from wrist joint has no bacterial growth and no crystals present;
5. Throat swabs - light growth of *Klebsiella*;
6. Rectal swab - *Shigella flexneri* isolated.

The elevated C-reactive protein may be a response to the Shigellosis, a reported side-effect of which is rheumatoid or arthritic-type pain in joints, so this may well account for the signs shown by Julia. Earlier evidence from October/November 1990 indicated a kidney infection implicated in mobility problems. This may still be the case, as blood is sometimes detected in her urine.

Towards the end of March Julia began to improve, her movements became more fluid, though she continued to favour her left arm for some time. Meanwhile, N'Pongo and G-Anne, having also been found positive for Shigellosis around the same time, had failed to develop any form of stiffness. Both had responded well to the Co-Trimoxazole and, following a period of convalescence for all three, the integration programme was resumed.

From early April, Julia and G-Anne were run together daily, and from their playful, boisterous interactions it soon became apparent that a bond was beginning to develop. Even when their enthusiasm got out of hand, arguments were usually more vocal than physical, and tended to be low- key affairs.

On 13th April Julia was introduced to Nandi, a senior female who had shown the least interest in her. The mixing lasted approximately one hour and three-quarters and was comparatively uneventful. There was some initial displaying by Nandi, who strutted with hairs erect and lips tucked whenever Julia moved close to her, but little else. Nevertheless, it was a confidence-boosting experience for the younger female, who was now beginning to assert herself a little more, and also

learning to control her reactions towards those individuals who were still able to intimidate her, namely Rafiki and Jambo. It was decided not to include the former in the integration programme as he was shortly due to be exported to St Louis Zoo, U.S.A., to join their bachelor unit.

Up until this time, Julia had had little opportunity to familiarize herself with the half-acre grassed enclosure, but as the weather improved her access time to the outside area was increased. Occasionally she and G-Anne would be joined for short periods by Sakina and Hlala Kahilli, though the younger animals tended to lack confidence when out of visual contact with their mothers. Consequently, experimental mixings, firstly with N'Pongo and later with Kishka, were put into operation. Interestingly, neither adult female showed any real desire to make contact with Julia, and with the added space of the outside enclosure offering her greater flight distance, this stage of her integration proved something of an anticlimax, albeit a very welcome one.

Julia was, however, given a valuable lesson in the price of being over-confident by Nandi who, throughout most of a wet afternoon, tolerated her clowning antics as she showed off to members of the public by strutting directly in front of the exhibition windows, slapping the glass, then actively climbing and swinging on ropes and bars. This in itself was reasonably acceptable, but not when carried out within a metre or so of the thirty-one year old female. Oblivious to Nandi's tense mood, Julia continued to perform, but then made a serious misjudgement when she attempted to engage the former in play by slapping her across the back whenever she came within arm's reach. Without warning, Nandi, with hairs bristling, suddenly lunged forward, grabbed the unsuspecting Julia and bundled her over onto her side. She then managed to inflict a severe mouthing around the neck and shoulders of the younger animal before she broke free and retreated immediately to a higher level.

INTEGRATION PHASE III

Despite such naivety Julia continued to make steady progress and by July she was running regularly with the female and infant grouping (Rafiki departed for the U.S.A. on 13th July), with the majority of mixings taking place outside, and lasting sometimes up to six hours. On 16th August the final stage of her integration commenced when Jambo was let out to join the group. As expected, he displayed immediately, strutting stiff-legged with lips tucked and head turned slightly so that he viewed his females with intermittent sidelong glances. Julia, having retreated on sight of him, paced hurriedly to the far end of the area, quickly moving out of his visual range. A chorus of submissive whines and grumbles from the other group members prompted Jambo to respond with a series of soft hoot vocalizations that gradually grew louder, before merging into one lengthy hooting call as he broke into a shuffling trot that finally culminated in an impressive chest-beating session. Having announced his arrival, he then concentrated on seeking out the new female. Excited by his presence, the majority of the group escorted the silverback as he moved slowly about the enclosure; G-Anne however remained in close proximity to Julia and was later joined by Sakina and Hlala Kahilli. After approximately 20 minutes of patient stalking, Jambo managed to approach to within 15 metres of the group before breaking into a charge that scattered them in all directions. The luckless Julia, unable to avoid his rush, was subsequently bowled over several times, though her screams brought an immediate response from the others, who attacked the adult male with slaps and bites. Kishka and N'Pongo, attracted by the uproar, were also quick to add their vocal support, and when confronted in this way Jambo chose to retreat a short distance to inspect his wounds. Julia also sustained several minor injuries to her arms but, though visibly shaken, was not seriously hurt.

For a short time after this, Jambo contented himself with foraging (extra food having been distributed prior to the mixing), but the lure of the female soon led to a resumption of his search. Within a fifteen-minute period he had, once again, caught up with her only to be chased off by the younger females, but not before he had bitten Julia in the right foot, and she in turn had inflicted a similar injury to two fingers of his left hand. A few minutes later, the breathless female was allowed back into the building whilst Jambo was at the opposite end of the enclosure. Though noticeably tired after her ordeal, she was quick to perk up and after a brief rest promptly demolished her mid-day feed. The introduction had lasted just over one hour.

Throughout the remainder of August, a further twelve such mixings, totaling some 64 hours, were organized and, despite being the recipient of further dominance-related displays by Jambo, Julia rarely showed a reluctance to be part of the group. G-Anne, having undergone a similar experience herself in 1983-4, played an influential role during this time. She had become Julia's closest companion, and was always there to offer support. Also, being accomplished in monitoring the changing position of the silverback, she was, to some extent, able to minimize agonistic encounters -when, that is, Julia heeded her warnings and followed her example. By the end of the month, several mixings had been recorded in which no physical aggression had been observed between Jambo and Julia, even though the young female had frequently been seen either foraging or interacting with a conspecific within 20 metres of the adult male. As often as the weather permitted, the group were run together outside, so that by mid-October an additional 38 successful mixings had been accomplished, comprising a total of a little more than 268 hours.

THE CURRENT SITUATION

Once Jambo had ceased to assert his dominance over Julia (his last observed display being recorded in September 1991), it could have been concluded that her integration was complete. However, she does still lack complete acceptance by him, and for one very significant reason. She has yet to exhibit clear signs of oestrus, and consequently to attempt any form of solicitation. It could be that, despite her outwardly confident air, Julia is still very much intimidated by the adult male, to the extent that her cycle is being affected. Of course, there are a number of possible reasons why breeding has not occurred and, as a first step towards, hopefully, being able to rectify this problem, daily urine samples are currently being collected from Julia for investigation of ovarian cyclicity.

On the whole, Julia's integration has been a success. For such an inexperienced individual she has done remarkably well in a relatively short time to establish a place for herself within the Jersey group. Despite the set-back and physical discomfort of a recurring arthritic condition, the young female continues to cope admirably and, judging by a noticeable overall improvement in her various relationships, she seems to have gained the trust and respect of the majority of her companions. Perhaps a good example of this has been the willingness shown recently by N'Pongo to leave her seven-month-old male infant Asato in Julia's company while she foraged at leisure some 25 metres away.

As with past gorilla introductions at the Jersey Wildlife Preservation Trust, there is no doubt that the size and design of the complex, and particularly that of the outside enclosure, served to minimize the inevitable stressful encounters by providing adequate flight distances and, because of the varied terrain, potential escape routes for subordinate group members like Julia. Finally, though she still has plenty to learn, it is clear that Julia now enjoys a better quality of life in a group where most of the age-sex classes normally found in gorilla society are represented. Gradually, it seems, she is coming to terms with living with her own species.

ACKNOWLEDGEMENT

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FURTHER READING

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