



Elephant Introductions.

A general overview & history.

February 2011.

Short Introduction.

The issue of elephant introduction have always been a problem for zoos, this article, however, is not going to be a problem solver more I hope, a discussion of some of the things that I have come across in my career that have worked and not worked in the hopes it will help you make plans, problem solving and at the same time make critical decisions when it comes to elephant introductions.

There are many reasons, I feel, why introductions are problematic but let's take a good look at the details and examine why some elephants just don't get along with each other in our zoos. There are many different types and combinations of elephant introduction and each combination has its moments, its special challenges and its idiosyncrasies.

The number of elephants being introduced can impact the outcome, this is relevant because in my experience although you have a lot of animals together it could simply be the more the merrier, with animals mingling and moving ultimately diluting the moment down into there's a lot going on so no one thing at that time is overly important. Now this does not always work and is probably more suited in a FC system than a PC handling regime, where you enter the yard and can run interference and orchestrate the hierarchy for the sub-dominate animals. This could work with the right animal combination in PC.

The different combinations however, could be unrelated adult female to adult female, male to female, for breeding, baby elephant being introduced back to its mother and possibly a baby elephant to male elephant. Many of these introductory combinations will have challenges dependent on the personality of the elephants involved, the elephant's history at the zoo and its age, also the option and experience of the zoo management, experience of your elephant staff, weather conditions and so on. There are some elephants where you can just open the door and let it happen and there are others where you would have wished you had had a plan when it all goes south. There are elephants that keepers have known for many years, believing they know the elephants intimate behavioral details and can forecast the outcome of the introduction, only to see an animal total change in character as the introduction confrontation progresses and the till then hidden lack of specie specific behaviors emerge. This article is not meant as a how to, more a sharing of experiences. But believe me a whole lot of things can go wrong if the right decision are not employed and a seemingly confident elephant can be left unsure nervous and lacking the confidence it once had.



So, why are they sometimes aggressive and why is a normally sociable animal prone to

Aggressive tendencies.



aggressive and ravenous, almost savage behavior where they will intentionally hurt each other?

I won't go into the natural herd hierarchy the nurturing herd structure details, these things you can better see and understand from "Animal Planet". Although reflecting back on to wild behavior one thing that is not generally addressed on "Animal Planet" is the importance of role playing in young elephants. Role playing in young elephants is crucial to their future characters traits, recognizing their differences as individuals becomes a blue print for adult life, because like us an elephant will also find it has strengths and weaknesses, likes and dislikes and this is all learned behavior rather like a school yard where young kids are pushing each other and finding out their personal tolerances.

I don't know if any of you remember your first confrontation as a kid at school. Some of you boys might remember getting into a fight or a pushing contest in the school yard, well you very soon at an early age find out how strong you are physiologically and physically and whether you can handle confrontation, these are the same things elephants go through obviously to a lesser extent and with far less active thought processes, I would believe, but never a less they find out who they are what level of stress they can take, even young females get pushed and bumped around creating a picture with every encounter of who they are individually. Funny thing though, I can never find a reference in the literature that recognizes the importance of social confrontations to the females of the herd, quite the contrary, one book even states that females do not fight within a group and harmony seems to be embraced.

So where does the fighting come from? I know they are animals and it's not healthy to read too much sentiment into their behavior, but elephants like many other intelligent animals, for example, none human Primates, Whales have a capacity for caring for each other well above most other animals, some even say they have the power of reasoning. Of course if you watch the nightly news on a regular basis and see how people treat each other it would be easy to determine elephants are way above us also, on the social and caring scale.

Elephants live into their sixties even seventies, have a 22 month gestation periods, outlive their young baring years, wean their young at four or five years of age and why do female elephants hang out every second of their lives together from birth? Males of course, seek or are forced into their solitary life styles after 10 yrs or so but leave the herd with a whole lot of individual specific information before they try to make it in the world.

The bachelor group's phenomenon is worth a mention and is a great example of nature filling a niche. Young male elephants have a potential of causing havoc within the herd at a certain age and even breeding back into their family. After being asked to leave they are on their own but will if permitted find a larger male to follow and travel with. A mixture of safety, companionship and I guess survival brings the groups together the very males not really caring one way or another who is around them and as they grow older there just there, now during breeding encounters the bachelor pack splits with the more mature animals witching to a different gear with a focus on the female in heat and the younger ones making themselves scares.

Elephants it seems have evolved to program and store information, information crucial to their very survival; the storage capacity has evolved to be quite a complex mechanism. Now take that possibility for learning away, what do you have? You probably have dysfunction in most

elephants, not all elephants though, because there are elephants that can coop and amongst other things take to other elephants without a hitch.

Why? I'd love to know, why do some elephants just get on with it and make friends, now there are some that make friends to the point of dysfunction where you couldn't pass a piece of paper between them so separating them any time becomes an issue.

Easier to control in FC. Having worked in both systems during elephant's introductions I found it easier to control the situation in Free Contact, the reason being of course is I could regulate the outcome by intervening. In PC you don't have that possibility. But as we all know intervening with elephants that have a problem with each other demands a certain skills, plus a strong philosophical buy-in from the institution where you are employed. Lots can go wrong when you are inside an enclosure with elephants and as PC becomes the system of choice for AZA, EAZA & BIAZA training people to be in with elephants is becoming less important.

Nita and Omar in FC. Introducing young elephants to older elephants can be tense; particularly none related animals and particularly females that have not seen a youngster before. A behavior profile of the elephant you want to introduce the youngster to would the first thing one would perform is she reliable or not. Then you should discuss and set up the introduce process plan, how, where which keepers should be there extra. I have done both FC & PC young elephant introductions and both processes have their specific details.



Omar was born at the SDWAP San Diego Wild Animal Park in 1993; his mother Connie came to San Diego as a donation from the USS Constellation to the SDZOO hence the name Connie. Connie was approximately a year old when she arrived, her natural elephant education was cut short the moment she was separated from her mother. Elephants arrived in Europe or the US a number of different ways they could have been orphaned or a man assisted separations, either way they were generally void of the basic elephant behavior the basic training and acclimation of young elephants is generally done at the zoo that they arrive at or in her case in the work camps before she arrived.

Connie was very aggressive towards Omar at birth so it was decided to hand rise him till he gained sufficient size and had formed bonds with some of the more dominant animals in the group first one was Nita in the photo to the right. This process was to give him more of an edge socially when he was introduced back to his mother. If he was friends or was being mothered by a more dominant animal in the group his mother or any other elephant in the group, for that matter, would be less likely to do him harm. A time frame for this process is not easy to determine as I said in FC you can run interference and stop most possible incidents. In PC the introduction process is much harder and more time and the use of specially built barriers might be needed.

The education an elephant receives at a zoo is not based on its biological needs or its long term philosophical welfare of an elephant because if the philosophy being employed is for the

elephant as a beast of burden most natural considerations do not apply and it becomes more about manners and demeanor and how it should act around humans. So if an elephant grows up under these circumstances, without the years of mother's milk or even maternal nurturing to support the elephants physical constitution, a huge vacuum is created, basically without us knowing because that's what we have done for 1000's of years. Unfortunately Omar died within his first year, the injuries he sustained when his mother attacked him were too much, and gradually he weakened and passed away after considerable effort from the SDWAP elephant & hospital teams.

Baby elephants to males. Baby introductions to males are generally easy, that's not to say all males are easy but they have less interest in babies than in larger females or other males. Unless of course the bull has physiological problems or heavy stereotypical issues that have altered his perspective, but you hopefully have done your research and observations, beforehand. Some males if scared, nervous or just stressed might injury a baby but this can be generally diluted by correct introduction practices and time. They have less biological ties to the young, so aggression is reduced, but don't hang your hat on that statement, do your home work, it might be safer for all concerned to leave them apart. We used a flexible yard separation technique in Spain that allowed us to move an electric fence quite easily to create or reduce space, as needed. The was designed to guide the bull back but at the same time it went over the back of the baby so could allow him to just get on with life quite un a where he was in the middle an introduction procedure.



Tina and Yhettoo at Belfast Zoo. As we said earlier, elephants are information orientated animals, they need information and will absorb a lot of surrounding information if it's made available to them. Coming up with new successful ideas firstly can be challenging, but also ideas that help the elephant with its new surroundings during introductions. That's what we did at the Belfast Zoo, Northern Ireland, January 2009, with the new arrivals to accompany their resident elephant Tina. Elephants need information to better understand their environment, just like we do, new sounds, smells, people, proximity of other elephants all create expectations for a new arrival and for a resident animal. Elephants will not automatically know each other they need time to readjust, firstly to their new surroundings even without other elephants to deal with. Elephant facilities historically, have been built for strength and convenience and for the most part for Free Contact handling, where the keeper can intervene and be the organizer of all goings on in the house and the elephant group.



To date there as only been a small number of elephant facilities built with a complete Protected Contact handling system in mind, where the personal relationship has been remove form the handling criteria. Also to explain short comings in design or to have a flexable philosohpy, or to apise the head person many institutions call their system by different names, modified PC, a type of pe-abo system where keepers are in with the elephants but its still called PC.

Back to Belfast. We choose a method of introduction that had never been done before and we planed our approach every step of the way. Belfast had one elephant and was interested in obtaining other elephants to accompany their one lone elephant. They had had also a change in philosophy concerning their contribution to captive elephant conservation. Previously they thought that breeding elephants would be the way to go and had actually had success with breeding the elephants they had. Breeding elephants has Belfast Zoo found out was not an easy direction to take. Re-thinking their stratgy they choose to open up their facility to older none viable female elephants, animals that were not considered apart of the breeding future of the European population. Older elephants bring to the table all kinds of issues mostly phycological because of the lack of socializing when they were young. The absense of a herd education does not sit well with elephants, no different, I guess as with none human primates and I suppose dolphins and whales would turn out if not kept in phisologically supporting surroundings. The play ground atmosphere that is created when young animals live and play together cannot be substituted, it's absense leaves viods of infromation that sometimes rises to the top when strange elephants meet and don't know how to act. A lack of fundimental information leaves this herd animal for the most part dysfunctional. The approach we took in Ireland was simple. The inside area where the elephants would first see each other had an electric curtain attached from the back wall and fasened at the front so it could be easily detacted when needed. The wire wall would allow the elephnats to see each other completely, no partial viewing of each other, no slaping at each other through a gate or fence and no potential excelerated aggression as they pull on each other, baiting and irratating so much that when you open the gate and let them together, it's a battle. Using the electric fence system the elephants spend time along side each other feeding and offering gestures, it is also a period of time that the staff can be observing and evaluated the process.

Using target training and rewards the elephants can be brought together at the fence moving towards eachother and then moving away so each elephant can see the other in different positions and places in the stall. This information will then be digested and programed subconsiencely, boby language as well as the audibal sounds they make are very important to the elephnat and are well underestimated in zoos.

Baby elephant back to an aggressive mother, directly after birth. The old school process of taking the baby away from the mother at birth in order to check the baby's vital signs and to let the mother calm down is slowly being replaced with a group/herd birth consideration. Has more and more facilities are moving towards a herd-nucleus sensitive management or a progressive PC style of handling the outcome of births is not so certain any more. "We can be more certain that the baby will survive if we take it away then slowly give it back when it is stronger was always the thought". Some PC programs will even chain the mother to hedge their bets of a live baby at the time of birth. Even if the mother is restrained there is still a chance of aggression to the baby. Do we make the whole process worst in our efforts to have a safe birth? Should we in the future allow fate to take its course?

Some thought these days is going into the imprinting possibilities a mother should have to bond with her baby directly at birth and what this means to the future of the baby and their long term relationship, not to mention the long term education of our elephant population in our zoos. A group birth, where ever possible, will ultimately polarize the elephants in your group into a self sustaining unit or nucleus It is hard to see a mother hurt or even kill a baby during or right after birth and on the selfish side after waiting 22 months for the baby to arrive only to see her hurt the baby is devastating to an elephant team.

There are a number of well-known zoos in Europe that now allow group/herd births even after a long history of FC, this decision wasn't made easily and has been made because they wanted to see the future of elephant management in many areas be more about the biology of the animal and be less drive by the beast of burden aspect of elephants in zoos.

Chain or not to chain is more keeper personality/experience dependent and will be an ongoing scenario and debate in the industry and as those personalities retire from our game, I feel, it will draw closer to a more herd importance and will have a greater directional impact in many aspects of elephant management in our zoos, not only birth.

Back to re-introducing the baby back to the mother after she has rejected it, either in FC or PC. Introducing a baby back to its mother directly after birth can be tricky and in PC it is even more of a challenge.

In FC it's all about the relationship and the control you have over the elephant, but even here we must be very careful because a normally tranquil animal in FC, which is not pregnant, can become an uncertain-unknown quality when giving birth. The FC breeding institutions where numerous babies are born generally have a protocol for birthing and a routine which is followed with every birth. The pasted history of the process will be your blue print and it becomes an institutional choice a personal preference which direction the birth process will take guided mostly by pass experience and success. Taking animals off restraints in FC that were normally tethered is not recommended without a serious game plan and consultation with people that might know or have been down that road.

What about Protected Contact? Well, here the rules change completely you don't have the same influence over the mother, now remember we are talking about elephants that have hurt

their babies in the past or for some reason you suspect that she will hurt her baby, or and this is a point of many debates today, it's her first birth and she has never been around a birth before. It will all come down to, are you willing to take a chance with the unknown, many people like better odds than 50/50. With first time mothers the 50/50 chance percentage is the strongest and even with this some zoos will take a chance, some zoos have lost and some have won. One zoo I know was so dedicated to its philosophy of free births it allowed babies to get hurt till the mother eventually raised her baby, foolish some would say, I believe, knowing the players at the zoo in question, it was a huge commitment which paid off and now all the elephants are in with every birth and the keepers would show up if things would go wrong.

The same standard rules apply in PC as they do in FC particularly if you go down the route of restraining the mother, because she must be trained to tethers also, which would be started many months out so the pregnancy is not affected by stress, and don't forget, all restraints must be attached through the PC wall, not easy task. Safely training the tethering routine is the first priority, this would be done every day as part of the mothers preparation. Concession would be built in so chains can be taken up or given out so the elephant has a certain amount of freedom while restrained, sounds like a contradiction doesn't it. First indication of the mother after the birth will be your sign to start taking off the chains or not. If she is trying to calmly reach the baby without any indication of aggression an executive decision can be made to get her free from restraints and see what happens, not an easy decision but it will put you at a better place than hand raising or long introductions with the mother on chains. So best case scenario is she is calm and you can release her restraints and let her relate to her calf.

Now, what if she starts trying to kick the baby violently, and she is showing every indication she will hurt the baby if she's released or still on restraints. The baby will be removed to a safe distance checked by the vet, possibly a blood sample taken, help to its feet and the reintroduction process can start. There are other more advanced considerations like serum, IV etc, but the most pressing issue at that point is the reintroduction back to mummy. Making a little harness is important at this point, a tool so you can allow the baby to drift into the mother at one side, preferably the side where you have short chained the leg exposing the nipple. The harness would be made out of cotton rope and would be 3 meters long tied so there is a loop in the middle for a longer rope to pass through. Passed over the neck of the baby with the loop on top the rope would cross through the front legs of the baby up over the back and tied at the loop. I have demonstrated this in the photo above.



Introducing the baby to the mother is of course the tricky part of the operation. Giving yourself the advantage with little heroic the mothers front leg would be taken up as in the photo so the baby can reach/see the nipple, thread a long rope through the loop on the babies harness and allow the baby to drift in to the mothers side, at this point you are looking at her reaction, is she calm or aggressive.

One could also give the mother a tranquilizer which makes the process calmer but the down side is when she comes to her senses she still might be aggressive. The introduction at this point is a time issue and how long it takes depends on the mental



status of the mother, they say once the baby latches on to the nipple it has a calming effect on the mother, not really seen that myself.

Of course, if the mother is accepting the baby and the baby is nursing the long rope can be pulled out of the loop of the harness and the baby will be free to approach the mother. Drawing the final conclusions, she could then be taken off restraints. If all's well with the process you are home free, but these are very broad steps I have explained, so seek further advice if you are uncertain.

Fence and gate aggression. Elephants are all about information, information that allows them to make decisions. I believe zoo elephants can be forced into a position that pressures them into the wrong decision.

Bared gates or adjacent stall introductions offer too little info all at once to where the elephant has to act on info it is receiving too fast, I believe we should build up a repertoire of behavior and give them elephants a chance to understand their surroundings before the elephants get close to each other. This



type of introduction can escalate into aggression if the females choose that path but there are numerous levels of behavioral possibilities when they are just put next to each other in a stall with bars for the first time. If one reviews the situation of first time contact introductions it is easy to see how it can go very wrong if the elephants do not know each other because lone animal's elephants that have been moved around a lot are usually socially uneducated and under the right scenario they are bomb ready to go off. First time stall intros are not recommended because you don't know what is going to happen, one assumes they will want to touch and investigate each other through the bars and at that point it will either escalate to aggression or not, you have a 50/50 chance of it going south. These are the odds you have when you don't make a plan and you just throw them to deal with something they are not sufficiently educated to understand.

Leaving it too long. One of the biggest problems we can have is leaving two animals too long in a holding pattern before we introduce them. There are many reasons for this, time, facilities, but mostly it's not knowing what to do next. A recommended time frame for intros would be to let the new elephants get to know the people, facility, also becoming comfortable with its surroundings, the noises of the house, then we introduce a daily routine that doesn't involve sight or contact with the other elephants, now this is all very good if you have a plan and a way of letting the elephants get to know one another immediately that doesn't elevate an aggressive scenarios like we addressed in the fence and gate section of this article. Leaving it too long is never an option to me because the moment is lost, the novelty of the surroundings have gone, the comfort level of the new elephant is very high and the confidence that can build is going to be your enemy. Providing you have made a plan and made the facility chances & additions need for a safe introduction it would only take a week or so till both elephants have

clear picture of what's happening and you have all the info you need to introduce the elephants. Now this not to say it will be a clear shot done deal, some elephant intros can take a long time till they are completely finished and the elephant are compatible. The chapters of the introduction book are not finish when they are stood together in a yard, if they are just baring each other it can still go off, but chances are if aggressive should spark off it will be much less ravenous than a first time no plan intro, the elephants will have gathered more info about each other and about themselves under these circumstances.

Breeding intros.



What can you do about it, have a plan?? Introducing females to males in breeding situation can be difficult, has the male been with females before, has the female been with males before, is she in estrous, are there moats in the enclosure, have the elephants enough obstacles to more around to re- treat into. The list goes on, but one thing will be generally understood early on in the process, if the female is not right for the male it will be known quite quickly and the safety of the female will be paramount.

Phoenix Zoo Elephant Program.



Bringing new elephants together can be tricky and as I say, you never know when the chapter of the book has been completely written or when aggression will start up again and, or it is only on hold. At Phoenix Zoo the task was simple introduce three elephants that had been with other elephants early on in their careers but now for some reason do not like other elephants. The Phoenix Zoo had acquired three adult female elephants with a history of aggression, two from the circus and one from another zoo in the US. All three were post reproductive and at a level anti-social towards other elephants. The task was easy but the implementation was going to be hard. There had been attempts with introduction before but with not so pleasant out come. So now we want to try again under different circumstances and with a different philosophy. One elephant had been the aggressor before so every focus was being given to her at the start. We started by creating the enclosure for them to be introduced with many way for the least aggressive animals to re-treat in safety. Then

yard was laid out so there was no direct access to another animal an aggressor would have to follow it query down and it would be easy to see by the observers and intervention could be introduced or not. With one combination of elephants this plan worked very well because as soon as the less threatening animal caught wind of being hunted it took off quickly leaving the aggressor with an option to follow or not. The chasing in this combination was quickly resolved and the two with the help of cooperative feeders quickly came together to eat. The third elephant in this group was tried with the two other animals but would relentlessly hunt the other two down at any opportunity; needless to say this elephant with the space that the zoo has available can only be kept on its own.



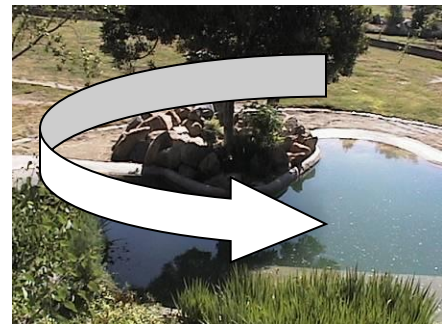
Facility considerations. Considerations when preparing for introductions, pool design and habitat furniture. There has not been, to date, a facility built that would fully accommodate aging female elephant social short-comings, some would say I over emphasis the down sides of the situation, twenty years ago I might say you were right but I now know too much about captive elephant dysfunction to turn my back on it. Elephant facilities, with a few exceptions, are underdeveloped at their conception.

Space requirements for elephants in zoos are always being under estimated or being miss interpreted, the first base value we use is the governing bodies minimum standards generally a collection of measurements that people had in their zoos at the time in their zoos when the standards were first submitted to paper. So the standards were written with minimum in mind laying down an underachiever mentality right from the start, a less is ok outlook. Rather than using the elephant's biology in more certain ways and seeing the value in what was good for the elephant such as space, light, sand as a starting point the team leaving the zoo for their fact finding excursion generally ended up measuring the last place built and adding a meter.

My mentor Karl Kock of the Hagenbeck's Tierpark organization in Hamburg, would I thought at the time, over emphasis the social structure and the compatibility of each elephant, no one else I knew in the world of elephants was talking like that , but now I can see exactly what he had in mind. Forgive my interpretation of what he might have thought completely. "The elephants are in captivity so we must do everything in our capacity to make them comfortable". My own addition of that is "In the times you are operating in, we are in 2010". Then we were in 1970.

Killing stall mates.

This seldom happens, but never the less, it has happened. In a number of ways it has happen, two older females had been together for fifteen to twenty years when the younger one turn on the older one and over a period of a few days knocked her down on numerous occasions to the point



where she couldn't/wouldn't get up. Pools have been on the focus of social issue, particularly with animals that are not compatible which was a point when we started just leaving elephants together on the heels of taking them off chains in the early 90's. New found freedoms small enclosures pushed animals together that didn't have the social education and would start the displacement of other animals around them. Trying to get away, elephants would learn to go in the pool to get away from their pursuers because they would not be followed; needless to say standing in water all night even to waist high an animal would lose core temperature and drowned. Pool design can offer an advantage to a less dominant animal.

When designing a pool for free living elephants it is always good to place an island in the middle of the pool so a pursued elephant can get out of the pool before a pursuing animal catches it, of



course the distance is critical in these circumstances. Gone are the days of the squared back one elephant pools.

As I mentioned in the Phoenix Zoo elephant program overview one thing we have found out is that furniture and multiple feeding opportunities carefully placed will defuse aggression in some animals, not all. An elephant pursuing another elephant will lose interest in the pursuit if there are sufficient objects and placed tree stumps, sand mounds that make a direct attack possible. We found that some elephants lose interest in the chase once the exertion of energy out

weighs the thrill of the hurt.

Some just get along. Some elephants just don't care but you will not know this till the time of impact. For course you never know that there could be problems if your elephant just walks out of the travel crate gives the other stall mate a big hug and everyone is happy and goes home. But please do not take luck for good management; this doesn't do anyone any good in the long haul. Having a healthy respect for the process and giving people who might have more questions than answers is the direction to follow, always air on the side of caution and have a healthy respect for what our elephant might not know socially.

Their social incompatibilities can just go on hold. This area is weird to say the least, but some elephants that are appearing to get on are just on hold and will come to the boiling point over time. We never know when but their attention will change and their intention turns aggressive. I don't really have much to say about this area because there is no visible rhyme or reason for it. Although a more complex environment with daily enhancement schedules will dilute many incompatibles as an elephants dysfunctions are absorbed into other ways of acting, not available during all avenues of the elephant's previous zoo life.

And..... some just don't get along at all, at any time, beware.

This you generally find out the hard way and at some point have to make some decision to either keep the elephants separate for the rest of its life or move the elephant to another facility, problem will be finding that facility, because most places other than a sanctuary with

normally very large enclosure could entertain such an animal. There are some cases that will change their outlook when moved to another zoo, particularly if there are a lot of elephants and the dynamics are complicated, it sometimes makes them reconsider their options and quite down.